According to the Latest Syllabus

IN ENGLISH

RAILWAY RECRUITMENT BOARD

Common Exam.

NTPC

RRB

- Commercial Apprentice
- Traffic Apprentice
- ECRC
- Goods Guard
- Jr. Accounts Assistant-cum-Typist
- Sr. Clerk-cum-Typist
- Assistant Station Master
- Traffic Assistant
- Sr. Time Keeper

Scanned by CamScanner

Contents

- Previous Year's Solved Paper

Section–I

General Awareness..... 1–48, 1–16

General Science..... 1–16

Section–II

Arithmetic..... 1–72

Section– III

General Intelligence & Reasoning..... 1–92

Scanned by CamScanner

Railway Recruitment Board

Common Computer Based Exam. 2016

(Non-Technical Categories)

Solved Paper

(Based on Memory)

Scanned by CamScanner

2016

1. To conduct detailed study into disease causing organism in livestock, Biosafety Laboratory has been setup in India in—
   1. Ludhiana 2. Bengaluru
   3. Anand 4. Allahabad
   (A) 4 (B) 1
   (C) 2 (D) 3

2. The medicine paracetamol is—
   1. An analgesic
   2. An antipyretic
   3. An analgesic and antipyretic
   4. A non-steroidal anti-inflammatory drug
   (A) 2 (B) 4
   (C) 3 (D) 1

3. If M = 14, TANK = 61, then STARDOM =
   1. 79 2. 89
   3. 99 4. 109
   (A) 4 (B) 1
   (C) 2 (D) 3

4. The headquarters of ISRO is located at—
   1. Bengaluru 2. New Delhi
   3. Pune 4. Mumbai
   (A) 3 (B) 2
   (C) 1 (D) 4

5. If the interior angle of a polygon is 108°, then it is a—
   1. Octagon 2. Hexagon
   3. Pentagon 3. Tetragon
   (A) 3 (B) 4
   (C) 1 (D) 2

6. Expand : $(W - 9)^2$—
   1. $(W^2 - 9W + 81)$
   2. $(W^2 - 9W + 18)$
   3. $(W^2 - 18W + 81)$
   4. $(W^2 - 18W - 81)$
   (A) 2 (B) 1
   (C) 4 (D) 3

7. Surya is 25 years older than his son. In 5 years, he will be twice as old as his son. What will be Surya's age after 3 years ?
   1. 20 2. 23
   3. 45 4. 48
   (A) 3 (B) 1
   (C) 4 (D) 2

8. Which country launched its first commerical satellite on 24th November, 2015 as a part of its National Space Program ?
   1. Russia 2. India
   3. Japan 4. China
   (A) 3 (B) 4
   (C) 2 (D) 1

9. Secularism means—
   1. Not practicing any religion.
   2. Practicing multiple religious.
   3. Freedom to join any satsang.
   4. Freedom of religion and worship.
   (A) 1 (B) 2
   (C) 3 (D) 4

10. What is the noise level of normal conversation ?
    1. About 60 db 2. About 70 db
    3. About 80 db 4. About 90 db
    (A) 1 (B) 3
    (C) 4 (D) 2

11. After 9/11 tragedy, the rebuilt World Trade Centre complex in New York is called—
    1. New World Trade Centre
    2. Empire State Building
    3. One World Trade Centre
    4. World Trade Complex
    (A) 4 (B) 2
    (C) 1 (D) 3

Scanned by CamScanner

12. Find the similarity in the following—

Olive Oil, Coconut Oil, Cod Liver Oil, Sunflower Oil

1. All of them are vegetable oils.
2. All of them are rich in Vitamin A.
3. All of them are rich in Vitamin D.
4. All of them are oills.

(A) 2 (B) 1
(C) 4 (D) 3

13. Shimla Agreement 1972 between India and Pakistan was signed in—

1. Barne's Court
2. Ellerslie Building
3. Viceregal Lodge
4. Gorton Castle

(A) 4 (B) 1
(C) 3 (D) 2

14. Which of the following fractions is the highest of all ?

1. $\frac{5}{4}$ 2. $\frac{4}{3}$
3. $\frac{3}{2}$ 4. $\frac{6}{5}$

(A) 2 (B) 4
(C) 1 (D) 3

15. 10 people can do a work in 30 days. In how many days, can 15 people complete double the work—

1. 20 2. 25
3. 40 4. 45

(A) 2 (B) 3
(C) 1 (D) 4

Directions—(Q. 16–18) The likes and professions of five friends—Rosy, Mary, Lily, Andy and Daisy are given. Consider the following information and answer questions based on it—

1. Rosy like Yellow and is a Student.
2. The Librarian likes Green.
3. Mary and Andy like Purple and Blue respectively and neither of them is a Teacher.
4. Andy is Inspector.
5. One of the five is a Principal.

16. Which colour does the Teacher like ?

1. Blue 2. Brown
3. Purple 4. Green

(A) 4 (B) 1
(C) 3 (D) 2

17. Who among the following is the wrong pair ?

1. Andy—Inspector
2. Purple—Principal
3. Daisy—Green
4. Rosy—Teacher

(A) 4 (B) 3
(C) 1 (D) 2

18. Who is the Principal ?

1. Daisy 2. Andy
3. Mary 4. Lily

(A) 4 (B) 1
(C) 2 (D) 3

19. If Deplete : Exhaust then Replenish—

1. Exhale 2. Iuhale
3. Reuse 4. Restore

(A) 3 (B) 2
(C) 4 (D) 1

20. Which of the following is a Space-Based Augmentation System ?

1. INSAT 2. GAGAN
3. GSAT 4. SARAL

(A) 4 (B) 3
(C) 2 (D) 1

21. In a certain code language if 41095 is READY and 840327 is FRAILS, then 83145419 is—

1. FEARY RED 2. FIERY RED
3. FAIRY RED 4. FIREY RED

(A) 4 (B) 2
(C) 3 (D) 1

22. The instrument used to regulate temperature to a particular degree is called—

1. Thermostat 2. Thermometer
3. Pyrometer 4. Thermocouple

(A) 4 (B) 2
(C) 3 (D) 1

Scanned by CamScanner

32. Which of the following is not a Union Territory ?

1. Puducherry 2. Chandigarh
3. Lakshadweep 4. Sikkim

(A) 2 (B) 1
(C) 3 (D) 4

33. If $\sin\theta = \frac{1}{\sqrt{2}}$ then $(\tan\theta + \cos\theta) =$

1. $\frac{1}{\sqrt{2}}$ 2. $\frac{2}{\sqrt{2}}$
3. $\frac{3}{\sqrt{2}}$ 4. $\frac{(1+\sqrt{2})}{\sqrt{2}}$

(A) 2 (B) 1
(C) 3 (D) 4

34. Which of the following will appear third, if they are arranged according to a dictionary ?

1. Autumn 2. Austere
3. Assert 4. Auspicious

(A) 3 (B) 2
(C) 1 (D) 4

35. The Gandhi-Irwin Pact was signed in the year—

1. 1930 2. 1931
3. 1932 4. 1933

(A) 2 (B) 3
(C) 4 (D) 1

36. Which key on a windows keyboard sets to full screen mode in most browsers ?

1. F_1 2. F_{10}
3. F_{11} 4. F_{12}

(A) 2 (B) 1
(C) 3 (D) 4

37. If '+' and '÷', '×' and '–' are interchanged in the equation $17 \div 7 - 27 + 7 \times 3$, then its value will be—

1. 7 2. 17
3. 27 4. 37

(A) 1 (B) 4
(C) 2 (D) 3

38. Twice the difference between two numbers is equal to their sum. If one number is 15, find the other number—

1. 15 2. 10
3. 5 4. 20

(A) 4 (B) 2
(C) 3 (D) 1

39. The percentage of nitrogen in the air is about—

1. 74% 2. 76%
3. 78% 4. 80%

(A) 1 (B) 4
(C) 3 (D) 2

40. G is twice as fast as S in doing work. If G can do a work in 30 days less than S, how many days will they take to complete the work together ?

1. 25 2. 20
3. 22 4. 15

(A) 1 (B) 2
(C) 3 (D) 4

41. Rupee sign '₹' is a—

1. Devanagari letter
2. Roman letter
3. Sanskrit script
4. A combination of Roman and Devanagari letter

(A) 2 (B) 1
(C) 3 (D) 4

42. The mean and median of 7, 5, 5, 2, 7, 6, 5, 3, 7, 6 is—

1. 5·3 and 5 2. 5 and 5·5
3. 5 and 6 4. 5·3 and 5·5

(A) 4 (B) 1
(C) 2 (D) 3

43. Which movement was called off following the violence at 'Chauri Chaura' incident ?

1. Khilafat Movement
2. Quit India Movement
3. Non Co-operation Movement
4. Home Rule Movement

(A) 4 (B) 1
(C) 2 (D) 3

44. Astrosat' is India's first—

1. Reconnaissance Satellite
2. Remote sensing satellite

Scanned by CamScanner

3. Space observatory
4. Communication Satellite

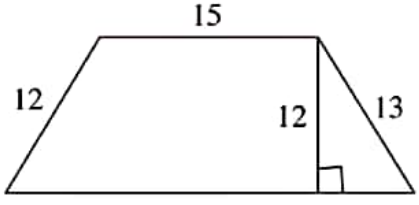
(A) 3 (B) 4
(C) 2 (D) 1

45. Find the missing (?) in the series—
14, 28, 42, 56, ?, 84, 98

1. 68 2. 70
3. 72 4. 74

(A) 2 (B) 1
(C) 3 (D) 4

46.



What is the area of this trapezoidal garden (All measurements are in cm) ?

1. 60 sq.cm 2. 180 sq.cm
3. 210 sq.cm 4. 240 sq.cm

(A) 1 (B) 2
(C) 3 (D) 4

47. The periodicity of the Commonwealth Games is—

1. No fixed interval
2. 4 years
3. 5 years
4. 6 years

(A) 4 (B) 2
(C) 3 (D) 1

48. The sum of three consecutive numbers is 126. Find the highest number—

1. 41 2. 42
3. 43 4. 44

(A) 4 (B) 3
(C) 1 (D) 2

49. Human nails are made of—

1. Pigment 2. Elastin
3. Albumin 4. Keratin

(A) 2 (B) 4
(C) 1 (D) 3

50. If the mathematical operator '+' means division, '–' means multiplication, '×' means subtraction and '÷' means addition, then the value of—
$11 \times 7 + 21 \times 2 \div 2 \times 3 - 4$ is—

1. $\frac{8}{3}$ 2. $\frac{4}{3}$
3. $\frac{-4}{3}$ 4. $\frac{-8}{3}$

(A) 2 (B) 3
(C) 1 (D) 4

51. Sachin Tendulkar made his test debut in 1989 at—

1. Karachi, Pakistan
2. Mumbai, India
3. Kolkata, India
4. Melbourne, Australia

(A) 2 (B) 1
(C) 4 (D) 3

52. The test for diagnosing HIV is .....

1. Pap Smear 2. ELISA
3. DND 4. Mantoux

(A) 3 (B) 2
(C) 1 (D) 4

53. Sunil has a son Karna and a sister Sangeeta who is the mother of Jagdish and Vijay. Harnish is Jagdish's maternal uncle. How is Harnish related to Karna ?

1. Brother 2. Father
3. Nephew 4. Paternal Uncle

(A) 4 (B) 1
(C) 2 (D) 3

54. 1·123 + 11·23 + 112·3 = ?

1. 123·453 2. 132·343
3. 124·643 4. 134·643

(A) 3 (B) 1
(C) 2 (D) 4

55. If RESEARCH is $ # ! # % $ & @ SCARE is—

1. ! & % $ # 2. ! @ % $ #
3. ! $ % # & 4. ! @ % # $

(A) 4 (B) 1
(C) 2 (D) 3

Scanned by CamScanner

56. International Maritime Organization is concerned with—
1. Air Pollution
2. Sea Pollution
3. Adulteration in food
4. Deforestation

(A) 2 (B) 4
(C) 3 (D) 1

57. Who served as the first Deputy Prime Minister of Independent India ?
1. Kamaraj
2. Morarji Desai
3. Sardar Vallabhbhai Patel
4. C. Rajagopalachari

(A) 3 (B) 2
(C) 1 (D) 4

58. A person carries ₹ 165 in the form of currency notes of ₹ 5, ₹ 10 and ₹ 20 in the ratio of 3 : 2 : 1. What is the value of currency notes of ₹ 20 denomination ?
1. ₹ 60 2. ₹ 100
3. ₹ 40 4. ₹ 80

(A) 1 (B) 2
(C) 4 (D) 3

59. Karan purchased one dozen pens for ₹ 120 and sold a pack of 3 pens for ₹ 35 each. What is his gain ?
1. 16·67% 2. 20%
3. 15% 4. 33·33%

(A) 1 (B) 3
(C) 4 (D) 2

60. A pole is taller than a Giraffe which is taller than a Tree. A signal is shorter than a pole, but taller than a building which is taller than a Giraffe. Who is the shortest ?
1. Signal 2. Giraffe
3. Tree 4. Building

(A) 2 (B) 3
(C) 4 (D) 1

61. If RATIONAL is CLETZYLW, then EXPERIENCE is—
1. OIZOCTOYMO 2. OJBDUQZOQ
3. OHZBSOXMO 4. PIAPCTPYNP

(A) 1 (B) 3
(C) 4 (D) 2

62. K purchased a table for ₹ 11,000 and sold it for ₹ 13,500. What is his gain in percentage ?
1. 19·8% 2. 20·6%
3. 22·7% 4. 22%

(A) 4 (B) 3
(C) 2 (D) 1

63. Which of the following does not belong to the group ?
1. Lakshadweep 2. Puducherry
3. Nicobar 4. Andaman

(A) 1 (B) 4
(C) 3 (D) 2

64. The name of the first bank established in India was—
1. Bank of Hindustan
2. Reserve Bank of India
3. Imperial Bank
4. State Bank of India

(A) 1 (B) 4
(C) 3 (D) 2

65. The first Olympics games was held in—
1. UK 2. USA
3. Greece 4. Italy

(A) 4 (B) 1
(C) 3 (D) 2

66. B has 32 pens, 24 pencils and 16 erasers. How many sets of these three items can B make without any left over ?
1. 6 2. 7
3. 8 4. 9

(A) 4 (B) 2
(C) 3 (D) 1

67. The value of $(\sin\theta + \cos\theta)^2 =$
1. $1 + \sin^2\theta$ 2. $\sin^2\theta + \cos^2\theta$
3. $1 + 2\cos\theta\sin\theta$ 4. $\cos^2\theta + 1$

(A) 1 (B) 3
(C) 2 (D) 4

68. For how many months is a cheque valid from the date of issue ?
1. 1 months 2. 2 months
3. 3 months 4. 6 months

(A) 2 (B) 1
(C) 3 (D) 4

Scanned by CamScanner

69. Air Quality Index is—
1. A measuring instrument of air pollution
2. A number
3. For measuring humidity level
4. For forecasting rain

(A) 3 (B) 2
(C) 1 (D) 4

70. All travels a distance of 300 m in 2 minutes and 30 seconds. What is his speed in kmph ?
1. 6·9 2. 7·1
3. 7·2 4. 7·3

(A) 4 (B) 2
(C) 3 (D) 1

71. Between small and large human intestine which one is longer ?
1. Small intestine
2. Large intestine
3. Both are equal in length
4. Depends on male or female

(A) 3 (B) 2
(C) 1 (D) 4

72. Four pairs of words are given. Find the odd one out—
1. Chalk : Slate
2. Pencil : Notebook
3. Pen : Ink
4. Sketch Pen : Drawing Book

(A) 3 (B) 1
(C) 2 (D) 4

73. What is the ratio of simple interest earned on certain amount at the rate of 12% p.a. for 9 years and that for 12 years ?
1. 1 : 2 2. 2 : 3
3. 3 : 4 4. 4 : 5

(A) 2 (B) 3
(C) 4 (D) 1

74. Statements followed by some conclusions are given below—

Statements :
1. Most people have orange scooters while some have red ones.
2. People like bright coloured scooters.

Conclusions :
I. People cannot bright coloured cars.
II. Most people prefer orange over other bright colours.

Find which of the given conclusions logically follows from the given statements—
1. Only conclusion I follows
2. Only conclusion II follows
3. Both I and II follow
4. Neither I nor II follows

(A) 4 (B) 1
(C) 2 (D) 3

75. Statement followed by some conclusions is given below—

Statements :
1. X is 7 meters tall, Y is half as high and Z is 3 times the height of X.
2. P, is taller than Z, but shorter than A and B.

Conclusions :
I. B is the tallest of all.
II. The average height of X, Y and Z is less than 10 meters.

Find which of the given conclusions logically follows from the given statements—
1. Only conclusion I follows.
2. Only conclusion II follows.
3. Both I and II follow.
4. Neither I nor II follows.

(A) 3 (B) 1
(C) 2 (D) 4

76. What is the 4th proportional of 3, 8, 12 ?
1. 36 2. 26
3. 32 4. 16

(A) 1 (B) 4
(C) 2 (D) 3

77. Eastern boundary of Kashmir is—
1. LOC 2. Jammu
3. POK 4. Ladakh region

(A) 2 (B) 1
(C) 3 (D) 4

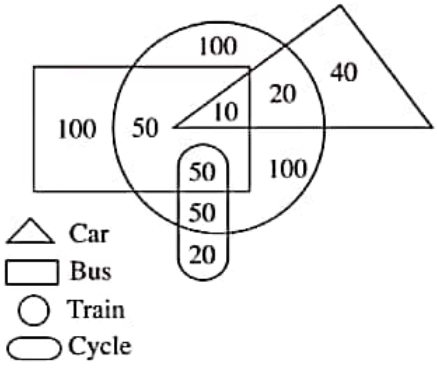
Scanned by CamScanner

78. Name the Indian who became the CEO of Google in 2015—

1. Satya Nadella 2. Cyrus Mistry
3. Sundar Pichai 4. Vishall Sikka

(A) 4 (B) 3
(C) 2 (D) 1

Directions—(Q. 79-81) Study the following diagram and answer questions based on it—



79. Which two modes of transport used by people are mutually exclusive ?

1. Car–Bus
2. Bus–Cycle
3. Car–Cycle
4. Cannot be determined

(A) 4 (B) 3
(C) 1 (D) 2

80. How many people who travel by train also travel by car or bus, but not cycle ?

1. 50 2. 70
3. 80 4. 100

(A) 3 (B) 2
(C) 1 (D) 4

81. The ratio of total number of train travellers to the people who do not travel by train is—

1. 27/16 2. 28/16
3. 37/16 4. 38/16

(A) 2 (B) 3
(C) 1 (D) 4

82. Find the range and mode of the data 17, 18, 28, 19, 16, 18, 17, 29, 18—

1. 12 and 18 2. 13 and 18
3. 12 and 17 4. 11 and 17

(A) 1 (B) 3
(C) 2 (D) 4

83. 1 \$ = ₹ 67·89. Money changer adds a margin of ₹ 1·11. What will be the cost of \$ 150 ?

1. ₹ 10,183 2. ₹ 10,350
3. ₹ 10,330 4. ₹ 10,450

(A) 3 (B) 2
(C) 4 (D) 1

84. Which of the following is not a bleaching agent ?

1. Sodium hypochlorite
2. Calcium hypochlorite
3. Hydrogen peroxide
4. Hydrogen sulphide

(A) 1 (B) 4
(C) 2 (D) 3

85. The standard deviation of the set {10, 10, 10, 10, 10} is—

1. 0 2. 1
3. 5 4. 10

(A) 4 (B) 1
(C) 2 (D) 3

86. Find the missing (?) in the series—

NA, PC, RE, TG, ?, XK, ZM

1. IV 2. VI
3. VII 4. VJ

(A) 1 (B) 2
(C) 3 (D) 4

87. A farmer purchased a piece of land for ₹ 18 lakh and spent ₹ 3 lakh for registration, fencing etc. He sold it for ₹ 24.57 lakh. Find his profit in percentage ?

1. 15% 2. 14·15%
3. 16·5% 4. 17%

(A) 2 (B) 3
(C) 4 (D) 1

88. Rearrange the jumbled letters to make a meaningful word and then select the one which is different—

1. DNHA 2. EDAH
3. THEA 4. IRHA

(A) 3 (B) 4
(C) 1 (D) 2

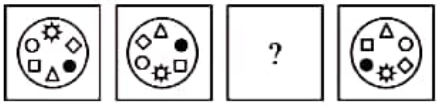
Scanned by CamScanner

89. Cricket World Cup 2023 is scheduled to be hosted by—

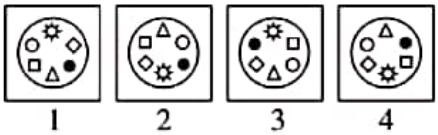
1. India
2. Pakistan
3. Sri Lanka
4. West Indies

(A) 3 (B) 4
(C) 1 (D) 2

90. Look carefully at the sequence of symbols to find the pattern—



Which of the following will replace the (?) in the sequence ?



1 2 3 4

(A) 4 (B) 1
(C) 3 (D) 2

91. National Science Day falls on—

1. 26th February
2. 27th February
3. 28th February
4. 29th February

(A) 3 (B) 1
(C) 4 (D) 2

92. If the area of a circle is 9π sq.cm, then its circumference is—

1. 9 cm
2. 6π cm
3. 3π cm
4. 6 cm

(A) 1 (B) 4
(C) 3 (D) 2

93. Which of the following statements is true with respect to ASCII ?

1. A programming language
2. ASCII chart is not for decimals
3. American Security Code for Information Interchange
4. A character encoding scheme

(A) 1 (B) 2
(C) 4 (D) 3

94. Pressure is measured terms of—

1. Mass and Density
2. Work Done
3. Force and Area
4. Force and Distance

(A) 4 (B) 1
(C) 3 (D) 2

95. An Assertion (A) and a reason (R) are given below—

Assertion (A) : Forest cover in the country has gradually decreased.

Reason (R) : Encroachment by humans one of the concerns for the forest department.

Choose the correct option—

1. Both A and R are true and R is the correct explanation of A.
2. Both A and R are true, but R is not the correct explanation of A.
3. A is true, but R is false.
4. A is false, but R is ture.

(A) 3 (B) 1
(C) 2 (D) 4

96. 'Maharatna' refers to a group of—

1. Emerging small and medium enterprises.
2. Central public sector enterprises.
3. Leading private sector enterprises.
4. Leading multi-national companies.

(A) 4 (B) 1
(C) 3 (D) 2

97. The famous Nek Chand's Rock Garden is located in—

1. Srinagar
2. Jammu
3. Chandigarh
4. Shimla

(A) 1 (B) 3
(C) 4 (D) 2

98. Which one of the following does not belong to the group ?

1. Monitor
2. Keyboard
3. Webcam
4. Mouse

(A) 2 (B) 3
(C) 4 (D) 1

99. Find the G.C.F. and L.C.M. of 20 and 28—

1. 20,280
2. 5,280
3. 10,140
4. 4,140

(A) 3 (B) 4
(C) 2 (D) 1

Scanned by CamScanner

100. On a certain principal, simple interest amounts to ₹ 1,000 in 1 year at the rate of 10% p.a. What will be the effective rate of int erest if the same is compounded on half yearly basis ?

1. 10·10 2. 10·15
3. 10·20 4. 10·25

(A) 3 (B) 1
(C) 2 (D) 4

Answers with Hints

1. (C)
2. (C) The medicine Paracetamol is an analgesic and antipyretic drug.
3. (D)

$$M = 14$$
$$TANK = 62$$
$$= 7 + 26 + 13 + 16$$
$$\therefore \quad STARDOM = 8 + 7 + 26 + 9 + 23 + 12 + 14$$
$$= 99$$

4. (C) The headquarter of ISRO is located at **Bengaluru**.
5. (A) Exterior angle of polygon

$$= 180° - 108°$$
$$= 72°$$

Number of Sides in Polygon

$$= \frac{360°}{72°}$$
$$= 5$$

$\therefore$ The polygon having Interior angle 108° is Pentagon.

6. (D) $(W - 9)^2 = W^2 - 18W + 81$
7. (C) Let the age of son $= x$ years

$\therefore$ age of Surya $= (x + 25)$ years acc. to que.

$$2(x + 5) = (x + 25 + 5)$$
$$2x + 10 = x + 30$$
$$\Rightarrow \quad x = 20$$

after 3 years Surya's age $= 20 + 25 + 3$
$= 48$ years.

8. (C) **Japan** has successfully launched its first commercial satellite on 24 November, 2015 as part of its national space program. Japanese H-IIA rocket carrying canadian TELSTAR 12V communications and broadcasting satellite for operator Telsat was successfully lifted off from Tanegashima Space Center (TSC).
9. (D) Secularism means freedom of religion and worship.
10. (A) Given chart shows the different Noise levels.

Noise	Average decibels (*d*B)
Leaves rustling, soft music, whisper	30
Average home noise	40
Normal conversation, background music	60
Office noise, inside car at 60 mph	70
Vaccum cleaner, average radio	75
Heavy traffic,,window air conditioner, noisy restaurant, power lawn mower	80-89 (sounds above 85 dB are harmful)
Subway, shouted conversation	90–95
Boom box, ATV, motorcycle	96–100
School dance	101–105
Chainsaw, leaf blower, snowmobile	106–115
Sports crowd, rock concert, loud symphony	120-129
Stock car races	130
Gun shot, siren a 100 feet	140

11. (D) 12. (C)
13. (B) In August 1972, after the 1971 war between India and Pakistan, Shimla Agreement was signed by Smt. Indira Gandhi and Mr. Zulfikar Ali Bhutto, the then prime minister of two countries. The main drawing room along with its table and chairs on which 'Simla Agreement' was signedd have been preserved.
14. (D)

$$\frac{5}{4} = 1·25$$
$$\frac{4}{3} = 1·33,$$
$$\frac{3}{2} = 1·5,$$
$$\frac{6}{5} = 1·2$$

Then $\frac{3}{2}$ is highest of all given fractions.

Scanned by CamScanner

15. (B) 10 people can do work

$= 30$ days

then 1 person can do work

$= 30 \times 10$ days

$\therefore$ 15 people can do same work

$= \frac{30 \times 10}{15}$ days

$\therefore$ 15 people can do double work

$= \frac{30 \times 10}{15} \times 2$ days

$= 40$ days

For Questions 16–18

Name	Colour	Profession
Rosy	Yellow	Student
Mary	Purple	Principal
Lily	Brown	Teacher
Andy	Blue	Inspector
Daisy	Green	Librarian

16. (D) 17. (A) 18. (D)

19. (C) Deplete means Exhaust in the same way Replenish means Restore.

20. (C) The GPs Aided GEO Augmented Navigation [GAGAN] is an implementation of a regional satellite based augmentation system [SBAS] by the Indian government.

21. (B)

4 1 0 9 5	8 4 0 3 2 7
R E A D Y	F R A I L S
8 3 1 4 5	4 1 9
F I E R Y	R E D

22. (B) 23. (C)

24. (D) Number from 1 to 100 in which 3 occur in Unit's place

3, 13, 23, 33, 43, 53, 63, 73, 83, 93

25. (D)

26. (B) Both Mandatory and compulsory are synonyms in the same way Hypothesis means Suppositions.

27. (B) Time taken for first 40 km

$= \frac{40}{60}$ H

$= \frac{40}{60} \times 60$ min.

$= 40$ min.

Time taken for rest $= \frac{100-40}{40}$

$= \frac{60}{40}$ H

$= \frac{60}{40} \times 60$ min..

$= 90$ min.

average speed $= \frac{100}{90+40} \times 60$ km/h.

$= \frac{6000}{130}$ km/h

$= 46{\cdot}15$ km/h

$\approx 46{\cdot}2$ km/h

28. (B) Total number of non fiction books

$= 350 + 400 + 450 + 300$

$= 1500$

Total number of fiction books

$= 500 + 400 + 500 + 350$

$= 1750$

Required ratio $= \frac{1500}{1750}$

$= \frac{6}{7}$

29. (C) Total books of Libraries

L1 and L3 $= 350 + 500 + 450 + 500$

$= 1800$

Total books of Libraries

L2 and L4 $= 400 + 400 + 300 + 350$

$= 1450$

Required ratio $= \frac{1800}{1450}$

$= \frac{36}{29}$

30. (A) Fiction books of L3 and L4

$= 500 + 350 = 850$

Non-Fiction books of L3 L4

$= 450 + 300 = 750$

difference $= 850 - 750$

$= 100$

Percentage difference

$= \frac{10,000}{850} \times 100$

$= \frac{1000}{850}$

$= 11{\cdot}76$

Scanned by CamScanner

31. (C) $x^2 - x - 132$

$$x^2 - 12x + 11x - 132$$
$$x(x - 12) + 11(x - 12)$$
$$(x - 12)(x + 11)$$

32. (D)

33. (D) If $\sin\theta = \frac{1}{\sqrt{2}}$

then $\theta = 45°$

$\therefore \quad \tan\theta + \cos\theta = \tan 45 + \cos 45$

$$= 1 + \frac{1}{\sqrt{2}}$$
$$= \frac{\sqrt{2}+1}{\sqrt{2}}$$
$$= \frac{1+\sqrt{2}}{\sqrt{2}}$$

34. (B) (1) Assert
(2) Auspicious
(3) Austere
(4) Autumn

35. (A) The Gandhi-Irwin Pact was a political agreement signed by Mahatma Gandhi and the Viceroy of India, Lord Irwin on 5 March 1931 before the Second Round Table Conference in London.

36. (C)

37. (B) After interchanging signs

$$= 17 + 7 \times 27 \div 7 - 7$$
$$= 17 + \frac{7 \times 27}{7} - 7$$
$$= 17 + 27 - 7$$
$$= 37$$

38. (C) Let numbers are x_1 and x_2

then

$$2(x_1 - x_2) = x_1 + x_2$$
$$2x_1 - 2x_2 = x_1 + x_2$$
$$x_1 = 3x_2$$
$$15 = 3x_2$$
$$x_2 = 5$$

39. (C) Air has 78 per cent nitrogen, just under 21 per cent oxygen, and the rest is water vapor, CO_2 and small concentrations of noble gases such as neon and argon.

40. (B)

41. (B) Rupee sign ₹ is Devangari letter.

42. (A) Mean $= \frac{7+5+5+2+7+6+5+3+7+6}{10}$

$$= \frac{53}{10}$$
$$= 5{\cdot}3$$

arranging in assending order

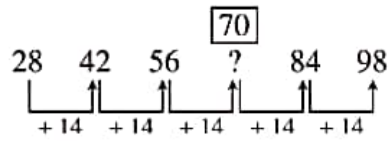
2, 3, 5, 5, 5, 6, 6, 7, 7, 7

$$\text{mode} = \frac{5+6}{2}$$
$$= \frac{11}{2}$$
$$= 5{\cdot}5$$

43. (D) The Chauri-Chaura incident occurred at Chauri-Chaura in the Gorakhpur district of the united province, British Indian on 4 February 1922, when a large group of protesters participating in the Non-cooperation movement turned vialent, leading to police opening fire. In retaliation the demonstrators. attacked and set fire to a police station, killing all of its occupants. The incident led to the deaths of three civillians and 22 or 23 Policemen.

44. (A) ASTROSAT is India's first dedicated multi wavelength space observatory. The scientific satellite mission endeavours for a more detailed understanding of our universe. One of the unique features of ASTROSAT mission is that it enables the simultaneous multi-wavelength. Observations of various astronomical objects with a single satellite.

45. (A)



46. (D) $13^2 = 12^2 + a^2$

$$169 = 144 = a^2$$
$$a^2 = 25$$
$$a = 5$$

Area of trapezoidal garden

$$= \frac{1}{2} \times 12 \times 40$$
$$= 240 \text{ sq cm}$$

Scanned by CamScanner

47. (B)

48. (B) Let the number be x then

$$x + x + 1 + x + 2 = 126$$
$$3x = 126 - 3$$
$$x = \frac{123}{3}$$
$$= 41$$

highest number

$$= 41 + 2$$
$$= 43$$

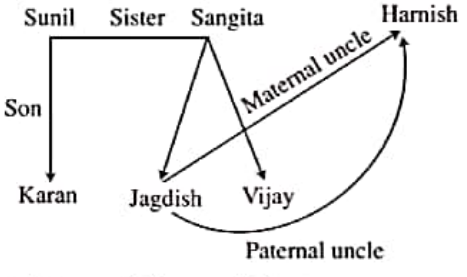
49. (B)

50. (B) By changing signs

$$11 - 7 \div 21 - 2 + 2 - 3 \times 4$$
$$= 11 - \frac{1}{3} - 12$$
$$= 11 - \frac{37}{3}$$
$$= \frac{33 - 37}{3}$$
$$= \frac{-4}{3}$$

51. (B) 52. (B)

53. (A)



54. (A) $1{\cdot}123 + 11{\cdot}23 + 111{\cdot}3$

$$= 124{\cdot}643$$

55. (B) As,

R	E	S	E	A	R	C	H
$	#	!	#	%	$	&	@

then,

S	C	A	R	E
!	&	%	$	#

56. (A) 57. (A) 58. (A)

59. (A) Gain per cent

$$= \frac{(35 - 30) \times 100}{120 \div 4}$$
$$= \frac{5 \times 100}{30}$$
$$= 16{\cdot}67\%$$

60. (B) Pole > Signal > Building > Girraf > Tree

61. (C) As,

R	A	T	I	O	N	A	L
+11 ↓	+11 ↓	+11 ↓	+11 ↓	+11 ↓	+11 ↓	+11 ↓	+11 ↓
C	L	L	T	Z	Y	L	W

In the same way

E	X	P	E	R	I	E	W	C	E
+11 ↓	+11 ↓	+11 ↓	+11 ↓	+11 ↓	+11 ↓	+11 ↓	+11 ↓	+11 ↓	+11 ↓
P	I	A	P	C	T	P	Y	N	P

62. (B) Gain percentage

$$= \frac{(13{,}500 - 11{,}000) \times 100}{11{,}000}$$
$$= 22{\cdot}7\%$$

63. (A) Except Lakshdeep, all are situated Eastern part of India.

64. (A) 65. (C)

66. (C) Only 8 because by 8 all the three numbers can be divided.

67. (B) $(\sin\theta + \cos\theta)^2$

$$= \sin^2\theta + \cos^2\theta + 2\sin\cos\theta$$

As we know,

$\sin^2\theta + \cos^2\theta$

$$= 1$$

then $1 + 2\cos\theta\sin\theta$

68. (B) From April 2012 the cheque will be valid for three months only.

69. (B)

70. (C) The speed in km $= \frac{300}{150} \times 3600$

$$= 72000 \text{ meter}$$
$$= 7{\cdot}2 \text{ km/hr.}$$

71. (C)

72. (A) Except option (C) the first word is the instrument for writing the second word.

73. (B) The ratio of simple interest earned on certain amount at the rate of 12% p.a. for 9 years and that for 12 years

$$= 12 \times 9 : 12 \times 12$$
$$= 108 : 144$$
$$= 3 : 4$$

74. (A)

75. (D) By Taking both the statement

A & B > P > Z > Y > X

↓ ↓ ↓

21m 10·5m 7m

Scanned by CamScanner

76. (D) The fourth proportional of 3, 8, 12 is

$$= \frac{8 \times 12}{3}$$

$$= 32$$

77. (D) 78. (B) 79. (D)

80. (A) $20 + 10 + 50 = 80$

81. (A) $100 + 20 + 10 + 50 + 50 + 50 : 100 + 40 + 20$

$$= 280 : 160$$

$$= 28 : 16$$

82. (C) The mode is 18 and range is 29–16

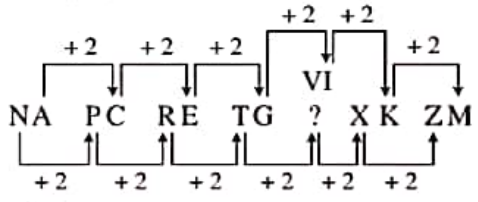
$$= 13$$

83. (B) The cost of 150 $

$$= (67{\cdot}89 + 1{\cdot}11) \times 150 \text{ ₹ } 10{,}350.$$

84. (C) 85. (A)

86. (B)



87. (C) Profit Percentage

$$= \frac{[24{\cdot}57 - (18 + 3) \times 100}{18 + 3}$$

$$= 17\%$$

88. (A) Hand head and hair are parts of body while heat is a different word.

89. (C) World Cup Cricket 2023 is scheduled to be hosted by India.

90. (C) 91. (A)

92. (D) Area of a circle πr^2

$$= 9\pi \text{ cm}^2$$

Then $r = 3\pi$ curl

Circumference of the circle

$$= 2\pi r$$

$$= 2 \times 3\pi$$

$$= 6\pi \text{ cm}$$

93. (C) 94. (C)

95. (B) Both A and R are true, but R is not the correct explanation of A.

96. (D) In 2010, the government established the higher Maharatna category, which raises a company's investment ceiling from ₹ 1000 crore to ₹ .5,000 crore

As on 30 September there are 7 Maharatnas

1. Bharat Heavy Electrical
2. Coal India
3. GAIL
4. Indian Oil Corporation
5. NTPC Ltd.
6. Oil and Natural Gas Corporation (ONGC)
7. Steel Authority of India Ltd. (SAIL)

97. (B) 98. (B) 99. (A) 100. (D)

Scanned by CamScanner

RRB Common Preliminary Examination, 2012 (Non-technical Group) Solved Paper

(Based on Memory)

1. Identify the wrong number in the following series—

   216, 163, 120, 72, 24

   (A) 216 (B) 163
   (C) 72 (D) 214

2. Some equation is solved by application of a specific method. Choose correct answer from the given options of an equation which is not solved as above equation ?

   $6 \times 4 \times 3 = 436$,
   $8 \times 4 \times ? = 468$,
   $6 \times 9 \times 8 = 986$

   (A) 3 (B) 4
   (C) 5 (D) 6

3. Choose the group of mathematical signs from the given options that may replace the sign '*' in the following equation—

   $7 * 7 * 2 * 1 = 12$

   (A) $\times - \div$ (B) $+ - \times$
   (C) $\times - +$ (D) $+ \times -$

4. In a code language, 'KINDLE' is written as 'ELDNIK'. How can EXOTIC be written in the same language ?

   (A) EXIOTC (B) COXITE
   (C) CXOTIE (D) CITOXE

5. CEGI : RTVX : IKMO : ?

   (A) JKNP (B) MNQP
   (C) LNPR (D) DFHI

Directions—(Q. 6 – 7) A sequence is given in which one term (or more terms) is missing. From the given options, choose the correct one that can complete the sequence—

6. AEI, BFJ, CGK, ?

   (A) DHL (B) DLH
   (C) EIM (D) LPT

7. 1, 6, 15, ?, 45, 66, 91

   (A) 25 (B) 26
   (C) 27 (D) 28

Directions—(Q. 8 – 12) Choose that odd one which is different from the rest three—

8. (A) Diamond (B) Aluminium
   (C) Tungsten (D) Copper

9. (A) Seller
   (B) Customer
   (C) Hawker
   (D) Middleman (broker)

10. (A) Potter (B) Weaver
    (C) Spinner (D) Engineer

11. (A) Jasmine
    (B) Magmolia
    (C) Chrysanthemum
    (D) Rose

12. (A) Typhoid (B) Cholera
    (C) Jaundice (D) Aids

Directions—(Q. 13–16) Mr. and Mrs. Sharma have two children–Asha and Shashi. Shashi married Radha who is daughter of Mrs. Mahajan. Suresh married Rita. Suresh and Rita have two children–Sonu and Rocky. Shashi and Radha have two daughters–Uma and Sudha.

13. What is Sonu's lineage-name ?

    (A) Mahajan (B) Sharma
    (C) Shashi (D) None of these

14. How is Suresh related to Sudha ?

    (A) Brother (B) Paternal uncle
    (C) Maternal uncle (D) Nephew

15. How is Asha related to Sudha ?

    (A) Sister (B) Nephew
    (C) Aunt (D) Daughter

Scanned by CamScanner

16. How is Mahajan related to Sonu ?
(A) Sister-in-law
(B) Grand son/Grand mother
(C) Son
(D) None of these

Directions—(Q. 17–20) Choose related word/ letters/number from the given options—

17. DARE : ADER : REEK : ?
(A) EEKR (B) EKER
(C) ERKE (D) EERK

18. Silkworm : Silken Saree : : Cobra : ?
(A) Venomous (B) Venom
(C) Death (D) Fear

19. L × M : 12 × 13 similarly U × W : ?
(A) 21 × 31 (B) 21 × 22
(C) 21 × 23 (D) 21 × 25

20. a : one : : f : ?
(A) feature (B) failure
(C) E (D) six

Directions—(Q. 21 – 23) Choose odd letters/ word/number-pair from the given options—

21. (A) Dilema (B) Mirage
(C) Identification (D) Delution

22. (A) Mercury (B) Moon
(C) Jupiter (D) Saturn

23. (A) 135, 123 (B) 123, 111
(C) 111, 100 (D) 100, 88

24. Among the following four options, three options have similarities in some or the other way and thus they are in form of a group. Which one is different from this group
Shoes : leather : Shirt : ?
(A) Cloth (B) Thread
(C) Tailor (D) Cotton

25. In one side of the sign : : two words are given and in other side one word is given. From the given options, choose the word that may maintain this relationship.
Bacteria : Disease : : War : ?
(A) Military (B) Defeat
(C) Arms (D) Destruction

26. If the length of a rectangle is decreased by 5 metres and breadth increased by 3 metres, its area decreases by 9 m^2. If its length is increased by 3 m and breadth by 2 m, its area increases by 67 m^2. What is the length of the rectangle ?
(A) 8 m (B) 15·6 m
(C) 17 m (D) 18·5 m

27. A feast is organised for a group of 100 people. In this feast 50 people do not like fish and 60 people like chicken. 10 people like neither fish nor chicken. How many people like both the fish and chicken ?
(A) 20 (B) 30
(C) 40 (D) 10

28. 35 is the average marks obtained by 120 students. The average marks of successful candidates was 39 and that of unsuccessful candidates was 15. What is the number of successful candidates in that examination ?
(A) 100 (B) 110
(C) 120 (D) 80

29. P and Q are two examination halls. If 10 examinees are sent from P into Q, the number of examinees becomes equal in both the halls. If 20 examinees are transferred from Q into P, the number of examinees becomes double in P in comparison with Q. What is the number of examinees in each P and Q separately ?
(A) 60, 40 (B) 70, 50
(C) 80, 60 (D) 100, 80

30. A number of two digits is equal to 'k' times to the sum of these digits. If the places of these digitszare mutually exchanged, the newly formed number is equal to the sum of these digits multiplied by which one of the following options ?
(A) $9 + k$ (B) $10 + k$
(C) $11 - k$ (D) $k - 1$

31. In a school, 10% of boys is equal to $\frac{1}{4}$ th of the number of girls. What is the ratio of the boys and the girls in that school ?
(A) 3 : 2 (B) 5 : 2
(C) 2 : 1 (D) 4 : 3

32. A train 'A' of 180 metres is running at the rate of 72 km/hr. Another train 'B' of 120 metres is coming from opposite direction at the rate of 108 km/hr. How long will they take to cross one another ?
(A) 24 sec (B) 12 sec
(C) 6 sec (D) 30 sec

Scanned by CamScanner

33. Vinod purchased a Maruti van for ₹ 1,96,000. Rate of fall of price per year of this van is $14\frac{2}{7}\%$. What will be its price after two years ?

(A) ₹ 1,44,000 (B) ₹ 1,40,000
(C) ₹ 1,68,000 (D) ₹ 1,70,000

34. Nita sold an article for ₹ 220 and earned a profit of 10%. At what cost should she sell to earn a profit of 30% ?

(A) ₹ 220 (B) ₹ 230
(C) ₹ 260 (D) ₹ 280

35. A seller sold $\frac{3}{4}$th of his goods at 24% profit. He sold rest part of the goods at cost price. What is percentage of his profit ?

(A) 15 (B) 18
(C) 24 (D) 32

36. There are 40% women workers in an office. 40% women and 60% men of that office voted for in my favour. What is percentage of total votes in my favour ?

(A) 24 (B) 42
(C) 50 (D) 52

37. There is an article of ₹ 100. Its price is raised initially by 10% and then again by 10%. How many rupees have been increased ?

(A) 20 (B) 21
(C) 110 (D) 121

38. A man went to his office on cycle at the rate of 10 km/hr and reached late by 6 minutes. When he increased the speed by 2 km/hr, he reached 6 minutes before time. What is the distance between his office and his departure point ?

(A) 6 km (B) 7 km
(C) 12 km (D) 16 km

39. 100 kms is the distance between the stations A and B. One train departed from A towards B at the rate of 50 km/hr and from B towards A at the rate of 75 km/hr. Both the trains departed simultaneously. At what distance from station A, both the trains will cross one-another ?

(A) 40 kms (B) 20 kms
(C) 30 kms (D) None of these

40. 10 persons can build a wall in 8 days. How many persons can build this wall in half day ?

(A) 80 (B) 100
(C) 120 (D) 160

41. A train of 150 metres crosses a railway bridge in 26 seconds at a speed of 90 km/hr. What is the length of this bridge ?

(A) 500 metres (B) 60 metres
(C) 650 metres (D) 550 metres

42. $\frac{8{\cdot}73 \times 8{\cdot}73 \times 8{\cdot}73 + 4{\cdot}27 \times 4{\cdot}27 \times 4{\cdot}27}{8{\cdot}73 \times 8{\cdot}73 - 8{\cdot}73 \times 4{\cdot}27 + 4{\cdot}27 \times 4{\cdot}27}$ is equal to—

(A) 11 (B) 13
(C) $1\frac{1}{7}$ (D) None of these

43. 45 is the average marks obtained by 30 students of a class. On checking, two errors were identified. On correction, one student obtained 45 more marks while other obtained 15 less marks. What is the average of corrected marks ?

(A) 45 (B) 44
(C) 47 (D) 46

44. 12 is the highest common factor of 'a' and 'b'. 'a' and 'b' are integers and $a > b > 12$. What would be the minimum values of (a, b) ?

(A) 12, 24 (B) 24, 12
(C) 24, 36 (D) 36, 24

45. A and B can complete a piece of work in 6 and 12 days separately. If they work jointly, how long will they take to complete this piece of work ?

(A) 9 days (B) 18 days
(C) 6 days (D) 4 days

46. $100 \times 10 - 100 + 2000 \div 100 = ?$

(A) 29 (B) 920
(C) 980 (D) 1000

47. A man gave $\frac{1}{4}$th part of his property to his daughter, $\frac{1}{2}$ part to his son and then donated $\frac{1}{5}$th part. Thus how much portion of his property did he give away ?

Scanned by CamScanner

(A) $\frac{1}{20}$ (B) $\frac{19}{20}$

(C) $\frac{1}{10}$ (D) $\frac{9}{10}$

48. 5 : 18 is the ratio of the length and perimeter of a rectangle. What would be the ratio of its length and breadth ?

(A) 4 : 3 (B) 3 : 5

(C) 5 : 4 (D) 4 : 7

49. What is that number, which is when added to 7, 16, 43, 79, these numbers become proportional ?

(A) 2 (B) 3

(C) 5 (D) 1

50. Marked price of a dining table is ₹ 6,000 and it is sold to a customer for ₹ 5,500. What is discount rate given on that table ?

(A) 10% (B) $8\frac{1}{3}$%

(C) 8% (D) 9%

51. If a speed of $3\frac{1}{3}$ m/s is converted into km/hr what would be its value ?

(A) 8 (B) 9

(C) 10 (D) 12

52. What is that sum which earns ₹ 420 as compound interest in second year at the annual interest rate of 5% ?

(A) ₹ 4,000 (B) ₹ 42,000

(C) ₹ 8,000 (D) ₹ 21,000

53. 5 years ago, average age of P and Q was 15 years. At present, average age of P, Q and R is 20 years. What will be the average age after 10 years ?

(A) 35 years (B) 40 years

(C) 30 years (D) 50 years

54. Exterior angle of a regular polygon is 72°. What would be the sum of all its interior angles ?

(A) 360° (B) 480°

(C) 520° (D) 540°

55. Under Union Plan, with the purpose of requisition of land for nuclear plant, the following word is written in place of amendment in Atomic Energy Act ?

(A) Jaitapur (B) Udpo

(C) Kadan Kolam (D) Narauda

56. Who won Men's singles title in this year's Wimbledon ?

(A) Roger Federer (B) Rafael Nadal

(C) N.D. Rodick (D) None of these

57. Recently, Oblapuram had been in news. It is situated in/at—

(A) At the border of Andhra Pradesh and Karnataka.

(B) Odisha

(C) Tamilnadu

(D) Kerala

58. Who among the following won silver medal in shooting in recent Olympic games ?

(A) Gagan Narang

(B) Vijay Kumar

(C) Abhinav Bindra

(D) Jaspal Rana

59. Which of the following states is at the top in cement production ?

(A) Rajasthan (B) Tamilnadu

(C) Bihar (D) None of these

60. Headquarters of South-Western Railway are located in—

(A) Bengaluru (B) Hubli

(C) Belgaum (D) Secunderabad

61. Light year is—

(A) Distance between the Earth and the Sun

(B) Distance travelled by light in a year

(C) Average distance between the Earth and the Moon

(D) None of these

62. Which country is at the top in cattle population ?

(A) India (B) China

(C) U.S.A. (D) Denmark

63. Who among the following became twice the President of India ?

(A) Dr. Rajendra Prasad

(B) Dr. S. Radhakrishnan

(C) Dr. Jakir Husain

(D) Both (A) and (B)

Scanned by CamScanner

64. Which of the following was formerly a fundamental right and now it is only a legal right ?
(A) Cultural and Educational right
(B) Right to property
(C) Right against exploitation
(D) Right to freedom and religion

65. During the last 10 years, which of the following countries laid out the highest amount of money as Foreign Direct Investment (FDI) in India ?
(A) U.S.A. (B) U.K.
(C) China (D) Japan

66. PAN is associated with income tax. What is the full form of PAN ?
(A) Permanent Account Number
(B) Payment Account Number
(C) Pass Book Account Number
(D) None of these

67. How many types of emergencies are there in Indian Constitution ?
(A) One (B) Two
(C) Three (D) Four

68. Which is that country that organised World Cup Cricket jointly and won the World Cup ?
(A) England (B) West Indies
(C) Australia (D) Sri Lanka

69. Which of the following is taken as crop ?
(A) Coffee (B) Tea
(C) Rubber (D) All these

70. Who among the following was the first to be honoured with 'Bharat Ratna' ?
(A) Jawahar Lal Nehru
(B) Govind Ballabh Pant
(C) Mahatma Gandhi
(D) C.V. Raman

71. Important folk dance of Nongkram is—
(A) Khasion (B) Garo
(C) Jention (D) Nagaon

72. 'Natya Shastra', which is an important source of Indian classical dance, was written by—
(A) Bharat Muni (B) Panini
(C) Narad Muni (D) Bhartrihari

73. The largest lake of Soft water of the world is—
(A) Lake Superior (B) Lake Victoria
(C) Hardraiswan (D) None of these

74. An error in computer programming is termed as—
(A) Big (B) Bit
(C) Wires (D) None of these

75. Physical structure of an adult human being is based on—
(A) 204 bones (B) 206 bones
(C) 208 bones (D) 214 bones

76. In absence of atmosphere, the sky will appear—
(A) Black (B) White
(C) Blue (D) Red

77. The following metal is used in storage batteries—
(A) Iron (B) Copper
(C) Zinc (D) Coating

78. Who among the following is not appointed by the President of India ?
(A) Chief Justice and the judges of High Courts
(B) Governors of States
(C) Chief Justice of India and the judges of the Supreme Court
(D) Vice President of India

79. Council of Minister is liable to—
(A) Lok Sabha
(B) Rajya Sabha
(C) The Prime Minister
(D) President

80. AGMARK is—
(A) A Cooperative Society of production of eggs
(B) An organized barley market
(C) A cooperative society of farmers
(D) A quality guarantee Seal for consumable goods like eggs, ghee, etc.

81. Where is Indian Institute of Science located ?
(A) New Delhi (B) Madras
(C) Kharagpur (D) Bengaluru

Scanned by CamScanner

82. Author of the book entitled, 'Imagining India—Ideas for the New Century', is—
(A) Chetan Bhagat
(B) N.R. Narayanmurty
(C) Nandan Neelkani
(D) Montek Singh Ahluvalia

83. The following is found in maximum quantity/number in Rajasthan—
(A) Camels (B) Heat
(C) Sand (D) Wind

84. Who has started, 'Save Narmada Movement' in 1905 for the first time ?
(A) Baba Amte
(B) Medha Patekar
(C) Madhu Kamekar
(D) Madhu Kodse

85. Who was honoured with the title 'Loknayak' ?
(A) Jay Prakash Narayan
(B) A.G. Tikri
(C) Mahatma Gandhi
(D) Jawahar Lal Nehru

86. Who had brought the Lauh Stambha in Delhi ?
(A) Qutb-ud-din Aibak
(B) Muhammad-bin-Tughluq
(C) Mohammad Gayasuddin
(D) Mohammad Kasim

87. Where will FIFA Cup Football be played next ?
(A) Argentina 2013 (B) Brazil 2013
(C) London 2013 (D) Mexico 2013

88. Which of the following is the deepest and the oldest lake of the world of fresh water ?
(A) Lake Titikaka (B) Lake Baikal
(C) Lake Chilka (D) Lake Superior

89. Inflorescence in Sunflower is of the type—
(A) Spike (B) Capitulum
(C) Bunch (D) Spadix

90. Nirmochan is insects in controlled by—
(A) Parahormone (B) Parathormone
(C) Ecdysone (D) Ecotone

91. Epicenter is related—
(A) Earthquake
(B) Fold
(C) Interior of the Earth
(D) Fault

92. Which of the following fruits is the National Fruit ?
(A) Jack-Fruit (B) Apple
(C) Mango (D) Banana

93. Which of the following languages is spoken by highest number of people ?
(A) Chinese (B) Spanish
(C) Urdu (D) English

94. Tulsidas was the poet of which of the following ?
(A) Ramcharit Manas
(B) Adi Grantha
(C) Soorsagar
(D) Bhagwat Puran

95. Coins are studied in which of the following subjects ?
(A) Archaeology (B) Historiography
(C) Numismatics (D) Epigraphy

96. Dry ice is—
(A) Ice-dust
(B) Liquefied Nitrogen
(C) Liquefied Hydrogen
(D) Solid CO_2

97. Naynar was related to the following—
(A) Vashnav Sect (B) Shaiv Sect
(C) Jain Sect (D) Bhagwat Sect

98. Name that Sufi Saint who was associated with Akbar—
(A) Sheikh Muinuddin Chisti
(B) Sheikh Nizamuddin Auliya
(C) Sheikh Salim Chisti
(D) Sheikh Farid

99. Diwan-i-Khairait was set up as a separate department by—
(A) Akbar
(B) Muhammad-bin-Tughluq
(C) Firoz Tughluq
(D) Shershah

Scanned by CamScanner

100. Who is said to be the father of Kawwali ?

(A) Amir Khusro

(B) Moihaz-e-Shiraz

(C) Ziauddin Barni

(D) Milal Shiraz

Answers with Hints

1. (B) Following is the sequence of given number-series ?

216 $\boxed{163}$ 120 72 24

−48 −48 −48 −48

∵ Correct Number 216 − 48 = 168

∴ Wrong number = 163

2. (D) ∵ $6 \times 4 \times 3 = 436$

⇒ $6 \times 9 \times 8 = 986$

⇒ $8 \times 4 \times ? = 468$

∴ ? = 6

3. (B) ∵ 7 * 7 * 2 * 1 = 12

⇒ $7 + 7 - 2 \times 1 = 12$

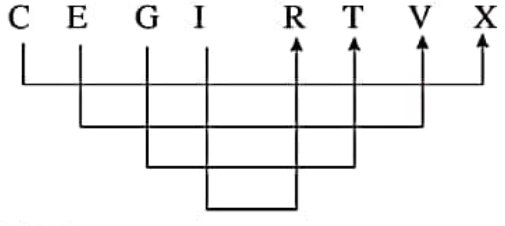
∴ Required group of mathematical signs

= + − ×

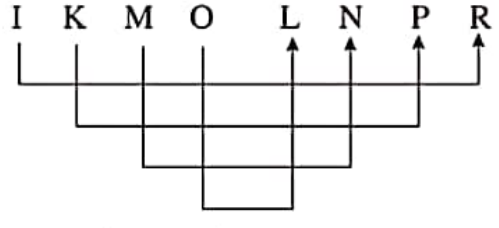
4. (D) ∵ KINDLE is written as = ELDNIK

∴ EXOTIC is written as = CITOXE

5. (C) As,



Similarly,



6. (A) ∵ A E I = 1, 5, 9

⇒ B F J = 2, 6, 10

⇒ C G K = 3, 7, 11

∴ ? = 4, 8, 12

= D H L

7. (D) Following is the sequence of given number series—

1 6 15 ? 45 66 91

+5 +9 +13 +17 +21 +25

+4 +4 +4 +4 +4

∴ ? = 15 + 13 = 28

8. (A) 9. (B) 10. (D) 11. (B) 12. (D)

13. (A) 14. (C) 15. (D) 16. (B)

17. (C) ∵ D A R E : A D E R : : R E E K : ?

∴ ? = E R K E

18. (B) Silk worm : Silken : : Cobra : ? = $\boxed{\text{Venom}}$

19. (C) As, L × M = 12 × 13

Similarly, U × W = ? [21 × 23]

20. (D) *a* : One : : *f* : ? = $\boxed{\text{six}}$

21. (C) **Identification**

22. (B) **Moon** (Natural Satellite), rest are planets

23. (C) **111, 100** (In the rest options, difference between the numbers of number-pair is 12).

24. (A) Shoes : leather : : Shirt : ? = $\boxed{\text{cloth}}$

25. (D) Bacteria : Disease : : War : ?

= $\boxed{\text{Destruction}}$

26. (C) Let the length and breadth of the rectangle are L and B respectively. Then, as per question,

∵ $(L - 5)(B + 3) = L \times B - 9$

⇒ $3L - 5B = 6$ ...(1)

⇒ $(L + 3)(B + 2) = L \times B + 67$

⇒ $2L + 3B = 61$ ...(2)

On solving Equation (1) and (2)

∵ $6L - 10B = 12$

$6L + 9B = 183$

⇒ $19B = 183 - 12 = 171$

∴ B = 9 metres

⇒ $3L = 6 + 5 \times 9 = 51$

∴ L = 17 metres

Scanned by CamScanner

27. (A) As per question,

Number of people who do not like fish

$= 50 - 10 = 40$

Number of people who do not like chicken

$= (100 - 60) - 10 = 30$

Number of people who neither likes fish nor chicken $= 10$

$\therefore$ Number of people who like fish and chicken both $= 100 - (40 + 30 + 10)$

$= 20$

28. (A) Let the number of successful candidates $= x$

Then, as per question,

$\because \; x \times 39 + (120 - x) \times 15 = 120 \times 35$

$\Rightarrow \quad x(39 - 15) = 120(35 - 15)$

$\therefore \quad x = \dfrac{120 \times 20}{24}$

$= 100$

29. (D) Let the number of examinees in hall P is x and that in Q is y.

Then, as per question,

$(x - 10) = y + 10$

$\Rightarrow \quad x - y = 20$

and $\quad (x + 20) = 2(y - 20)$

$\Rightarrow \quad 2y - x = 60$

On adding Equations (1) and (2)

$y = 20 + 60 = 80$

and $\quad x = 80 + 20 = 100$

30. (C) Let the number of two digits $= 10x + y$

Then, as per question,

$10x + y = k(x + y)$

On changing mutually the places of digits, the new number is

$= 10y + x$

$= (11 - 1)y + (11 - 10)x$

$= 11(x + y) - (10x + y)$

$= 11(x + y) - k(x + y)$

$= (11 - k)(x + y)$

Sum of the digits which will be multiplied

$= (11 - k)$

31. (B) Let the number of boys in the class is x and that of girls is y.

Then, as per question

$\because \quad 10\% \text{ of } x = \dfrac{1}{4} \times y$

$\Rightarrow \quad x \times \dfrac{10}{100} = \dfrac{1}{4} \times y$

$\therefore \quad x : y = \dfrac{10}{4}$

$= 5 : 2$

32. (C) Relative velocity of two trains running in opposite directions

$= (72 + 108)$

$= 180 \times \dfrac{5}{18}$ m/sec.

$= 50$ m/sec.

Total length of two trains $= (180 + 120)$ m

$= 300$ m

Required time $= \dfrac{\text{distance}}{\text{speed}}$

$= \dfrac{300 \text{ m}}{50 \text{ m/sec.}}$

$= 6$ seconds

33. (A) $\because$ Rate of fall of price $= 14\frac{2}{7}\% = \frac{100}{7}\%$

$\therefore$ Required price after 2 years

$= ₹\, 196000 \left(1 - \dfrac{\frac{100}{7}}{100}\right)^2$

$= ₹\, 196000 \left(1 - \dfrac{1}{7}\right)^2$

$= ₹\, 196000 \times \dfrac{36}{49}$

$= ₹\, 1,44,000$

34. (C) As per question,

Selling price of the article $= ₹\, 220$

Cost price of the article

$= ₹\, 220 \times \dfrac{100}{(100 + 10)}$

$= ₹\, 200$

$\therefore$ Required selling price of the article

$= ₹\, 200 \times \dfrac{100 + 30}{100}$

$= ₹\, 200 \times \dfrac{13}{10}$

$= ₹\, 260$

35. (B) Let cost price of all the articles $= ₹\, x$

Then, selling price of the articles

$= \dfrac{3}{4} \times x \times \dfrac{124}{100} + \dfrac{1}{4} \times x$

Scanned by CamScanner

$$= \left(\frac{93}{25}+1\right)\frac{x}{4}$$

$$= \frac{118}{100}x$$

$\therefore$ Percentage of required profit

$$= \frac{\left(\frac{118}{100}-1\right)x}{x} \times 100\%$$

$$= 18\%$$

36. (D) Let total number of employees in the office $= x$

Then, as per question,

No. of women employees = 40% of x

$$= x \times \frac{40}{100} = \frac{2}{5}x$$

$\Rightarrow$ No. of male employees $= x - \frac{2}{5}x$

$$= \frac{3}{5}x$$

$\Rightarrow$ No. of votes that I obtained

$$= 40\% \text{ of } \frac{2}{5}x + 60\% \text{ of } \frac{3}{5}x$$

$$= \frac{2}{5}x \times \frac{40}{100} + \frac{3}{5}x \times \frac{60}{100}$$

$$= \left(\frac{4}{25}+\frac{9}{25}\right)x = \frac{13}{25}x$$

$\therefore$ Required percentage of votes

$$= \frac{13}{25}x \times \frac{100\%}{x}$$

$$= 13 \times 4$$

$$= 52\%$$

37. (B) $\because$ Price of the article = ₹ 100

$\Rightarrow$ Price, after increase of 10%

$$= ₹\,100 \times \frac{110}{100}$$

$$= ₹\,110$$

$\Rightarrow$ Price, after again increase of 10%

$$= 110 \times \frac{110}{100}$$

$$= ₹\,121$$

$\therefore$ Required total increase $= 121 - 100$

$$= ₹\,21$$

38. (C) Let the distance between the office and the initial place of departure = x km and time = T hrs

Then, as per question,

$$\because \quad \frac{x}{10} = T + \frac{6}{60} \quad \ldots(1)$$

$$\text{and} \quad \frac{x}{(10+2)} = T - \frac{6}{60} \quad \ldots(2)$$

$$\Rightarrow \quad \frac{x}{10} - \frac{x}{12} = \left(T + \frac{1}{10}\right) - \left(T - \frac{1}{10}\right)$$

$$\Rightarrow \quad \frac{6x - 5x}{60} = \frac{1}{10} + \frac{1}{10} = \frac{1}{5}$$

$$\therefore \quad x = \frac{60}{5}$$

$$= 12 \text{ km}$$

39. (A) Let both the trains will cross one-another at a distance x from the station A.

Then, as per question,

$$\because \quad \frac{x}{50} = \frac{(100-x)}{75}$$

$$\Rightarrow \quad 3x = 2(100 - x)$$

$$\Rightarrow \quad (3+2)x = 2 \times 100$$

$$\therefore \quad x = \frac{200}{5}$$

$$= 40 \text{ km}$$

40. (D) $\because$ Work can be completed in 8 days by = 10 persons

$\Rightarrow$ Work can be completed in 1 day by

$$= 8 \times 10$$

$$= 80 \text{ persons}$$

$\therefore$ Work can be completed in $\frac{1}{2}$ day by

$$= \frac{80}{\left(\frac{1}{2}\right)}$$

$$= 160 \text{ persons}$$

41. (A) Let length of the bridge = L metres

Speed of the train = 90 km/hr.

$$= 90 \times \frac{5}{18} \text{ m/sec.}$$

$$= 25 \text{ m/sec.}$$

$\because$ Distance covered = Time × Speed

$$\Rightarrow \quad (150 + L) = 26 \times 25$$

$$\therefore \quad L = 650 - 150$$

$$= 500 \text{ metres}$$

Scanned by CamScanner

42. (B) Let $8{\cdot}73 = x$

And $4{\cdot}27 = y$ then,

Expression

$$= \frac{8{\cdot}73 \times 8{\cdot}73 \times 8{\cdot}73 + 4{\cdot}27 \times 4{\cdot}27 \times 4{\cdot}27}{8{\cdot}73 \times 8{\cdot}73 - 8{\cdot}73 \times 4{\cdot}27 + 4{\cdot}27 \times 4{\cdot}27}$$

$$= \frac{x^3 + y^3}{x^2 - x \cdot y + y^2}$$

$$= \frac{(x + y)(x^2 - xy + y^2)}{(x^2 - xy + y^2)}$$

$$= (x + y)$$

$$= 8{\cdot}73 + 4{\cdot}27$$

$$= 13{\cdot}00$$

43. (D) Required average of corrected marks

$$= \frac{30 \times 45 + 45 - 15}{30}$$

$$= \frac{30\,(45 + 1)}{30} = 46$$

44. (D) $\because$ Highest common factor of 'a' and 'b'

$$= 12$$

Let $a = 12x$

and $b = 12y$

$\because$ $a > b > 12$

$\Rightarrow$ $12x > 12y > 12$

$\Rightarrow$ $x > y > 1$

'a' and 'b' are positive integers. Then, minimum values of x and y will, respectively, be 2 and 3.

$\therefore$ The minimum values of (a, b) will, respectively, be $(12 \times 3 = 36)$ and $(12 \times 2 = 24)$, namely, (36, 24).

45. (D) Work done by (A + B) in 1 day

$$= \left(\frac{1}{6} + \frac{1}{12}\right)$$

$$= \left(\frac{2 + 1}{12}\right)$$

$$= \frac{1}{4} \text{ th part}$$

$\therefore$ (A + B) will jointly complete the work in 4 days.

46. (B) Given expression

$$= 100 \times 10 - 100 + 2000 \div 100$$

$$= 100\,(10 - 1) + 2000 \times \frac{1}{100}$$

$$= 900 + 20$$

$$= 920$$

47. (B) Part of property given away by the man

$$= \frac{1}{4} + \frac{1}{2} + \frac{1}{5}$$

$$= \frac{5 + 10 + 4}{20}$$

$$= \frac{19}{20}$$

48. (C) Let the length and the breadth of the rectangle are x and y, respectively. Then,

$$\frac{\text{Length}}{\text{Perimeter}} = \frac{5}{18}$$

$$\Rightarrow \quad \frac{x}{2\,(x + y)} = \frac{5}{18}$$

$$\Rightarrow \quad 9x = 5\,(x + y)$$

$$\Rightarrow \quad 4x = 5y$$

$$\therefore \quad x : y = 5 : 4$$

49. (C) Let required number $= x$

Then, as per question—

$$\because \quad \frac{(7 + x)}{(16 + x)} = \frac{(43 + x)}{(79 + x)}$$

$$\Rightarrow \quad (7 + x)(79 + x) = (16 + x)(43 + x)$$

$$\Rightarrow \quad 553 + 86x + x^2 = 688 + 59x + x^2$$

$$\Rightarrow \quad (86 - 59)x = (688 - 553)$$

$$x = \frac{135}{27}$$

$$= 5$$

50. (B) Required rate of discount $= \dfrac{500}{6000} \times 100\%$

$$= \frac{50}{6}\%$$

$$= 8\frac{1}{3}\%$$

51. (D) Required Speed $= 3\frac{1}{3}$ m/sec.

$$= \frac{10}{3} \times \frac{60 \times 60}{1000} \text{km/hr}$$

$$= 12 \text{ km/hr}$$

52. (C) Let required sum = ₹ P

Then, as per question,

Compound interest earned only during the second year

$$\Rightarrow ₹\,420 = P\left(1 + \frac{5}{100}\right)\left[\left(1 + \frac{5}{100}\right) - 1\right]$$

$$= P\left(\frac{105}{100}\right)\left[\left(\frac{105}{100}\right) - 1\right]$$

Scanned by CamScanner

$$= P\left(\frac{21}{20}\right)\left[\frac{21}{20}-1\right]$$

$$\therefore \quad P = 420 \times \frac{20 \times 20}{21}$$

$$= ₹\,8000$$

53. (C) As per question,

Sum of the ages of (P + Q + R) = 3 × 20

= 60

∴ After 10 years, the required average age

$$= \frac{(P+10)+(Q+10)+(R+10)}{3}$$

$$= \frac{(P+Q+R)+30}{3}$$

$$= \frac{60+30}{3}$$

= 30 years

54. (D) ∵ Exterior angle of the regular polygon

= 72°

∴ Interior angle of regular polygon

= 180° – 72°

= 108°

Let the number of sides of the regular polygon = n

∵ Sum of all the interior angles = $(n - 4)$ right angles

$$\Rightarrow \quad n \times 108° = (2n-4) \times 90°$$

$$n \times 6 = (2n-4) \times 5$$

$$\therefore \quad n(10-6) = 20$$

$$n = \frac{20}{4} = 5$$

∴ The sum of all the interior angles

= 5 × 108°

= 540°

55. (A) People of Jaitapur in Maharashtra have been opposing the project to set up the nuclear plant.

56. (A) Roger Federer beat Andy Murray.

57. (A) Oblapuran is located in Anantpur district of Andhra Pradesh where there is a mine of iron ore.

58. (B) Vijay Kumar won the silver medal of men's 25 metres rapid fire pistol competition.

59. (A) Rajasthan is the largest cement producing state in India. Tamilnadu is famous for leather industries.

60. (B) Headquarters of South-Western Railway is located in Hoobli. It started functioning since April 1, 2003.

61. (B) Speed of light in vacuum is 186250 miles/sec. (29979·5 km/sec.) Distance travelled by light in a year is called 'Light Year'. This is equal to 5880 billion miles (9460 billion kms.).

62. (A) India occupies the first place in buffaloes (57%) and cows (15%) breeding, second position in goat breeding, third place in sheep breeding, fifth position in poultry and tenth position in camel breeding.

63. (A) First President of India, Dr. Rajendra Prasad had been in office for two consecutive terms. His term of office was since January 26, 1950 till May 13, 1962.

64. (B) 'Right to Property' is now only a legal right. As per Constitution Amendment 44, 1978, 'Right to Property' has been allotted only as legal right.

65. (A) U.S.A. has invested 9·8 billion dollars during 2000-2011.

66. (A) PAN—Permanent Account Number.

67. (C) Indian Constitution has the provision of three types of emergencies—

(i) National Emergency (Article 352)

(ii) Constitutional Emergency (Article 356)

(iii) Financial Emergency (Article 360)

68. (D) India, Pakistan and Sri Lanka had jointly organized World Cricket Cup Tournament in 1996. In final, Sri Lanka beat Australia by 7 wickets and won the World Cup. In 2011, India, Bangladesh and Sri Lanka organized the World Cup Tournament. In final, India beat Sri Lanka and won the World Cup.

69. (D) Coffee, Tea and Rubber are called plantation crops.

Coffea sps (Coffea arbia) and Robusta (Coffea canephora).

Tea (Queen of Beverage Crop — Camellia sinensis family — Theaceae)

Rubber (Hevea brasiliensis)

70. (A) The first Prime Minister of India, Jawahar Lal Nehru, was honoured with Bharat Ratna in 1955. He had been Prime Minister since August 15, 1947 till May 27, 1964.

71. (A) Nangkram is an important folk dance of Khasi tribe of Meghalaya.

Scanned by CamScanner

72. (A) Bharat Muni had written 'Natyashastra'.
73. (A) Lake Superior is the largest lake of soft water of the world.
74. (A) 'Bug' is an error in computer software programming.
75. (B) An adult human being has 206 bones.
76. (A) The sky will appear dark.
77. (D) Zinc is used in storage batteries.
78. (D) The President appoints the Prime Minister and members of Council of Ministers, Chief Justice of India and other judges of Supreme Court, Chief Justice and other judges of High Courts, Attorney General, Governors of the States, Controller and Auditor General, etc.
79. (A) Union Council of Ministers is liable to the Lok Sabha.
80. (D) AGMARK is the symbol of quality.
81. (D) Indian Institute of Science is located in Bengaluru.
82. (C) Nandan Neelkani is the author of this book.
83. (C) Sand is in plenty in Rajasthan.
84. (B) Medha Patekar had started 'Save Narmada Movement' in 1989.
85. (A) Jay Prakash Narayan was honoured with the title of 'Lok Nayak'.
86. (C) Firoz Shah Tughluq had brought the Lauh Stambh to Delhi.
87. (B) FIFA World Cup will be organized in Brazil in 2013.
88. (B) Lake Baikal is the oldest and the deepest lake of soft water. Its maximum depth is 1637 metres.
89. (B) Inflorescence in Sunflower is of capitulum/head/anthodium type.
90. (C) Nirmochan in insects is controlled by ecdysone.
91. (A) Epicenter is associated with earthquake.
92. (C) Mango (Mangifera Indica) is the National Fruit of India and it is cultivated in India for a long time. Vitamins A, C and D are available in mangoes in plenty. It is cultivated in tropical countries.
93. (A) Chinese is spoken by the highest number of people in the world. English occupies the second place.
94. (A) Tulsidas wrote 'Ramcharita Manas'. Maharshi Valmiki wrote 'Ramayan'.
95. (C) The branch of learning that studies the coins, is called 'Numismatics'.
96. (D) Solid carbon dioxide is called 'Dry ice'.
97. (B) Saints of Shaiva sect are called 'Naynar'.
98. (C) Salim Chisti (1478–1572) was associated with emperor Akbar.
99. (C) Firoz Shah Tughluq had set up 'Diwan-i-Khairait as a separate department.
100. (A)

Scanned by CamScanner

Objective
General Knowledge

Scanned by CamScanner

Indian History and Culture

1. Which commander of Nawab Sirajuddaulah's army betrayed him at the battle of Plassey in 1757 ?
   (A) Shuja-ud-Daulah
   (B) Mir Jaffar
   (C) Neither of these
   (D) Both of these
2. The first Muslim ruler to introduce the system of price control was—
   (A) Balban
   (B) Jalaluddin Khalji
   (C) Muhammad-bin-Tughlaq
   (D) Alauddin Khalji
3. The most important text of Vedic Mathematics is—
   (A) Satapatha Brahman
   (B) Atharva Veda
   (C) Sulva Sutras
   (D) Chhandhogya Upnishad
4. Teratali is the folkdance of—
   (A) Kerala (B) Rajasthan
   (C) Madhya Pradesh (D) Tamil Nadu
5. 'Karagam' a religious folkdance is associated with—
   (A) Tamil Nadu (B) Kerala
   (C) Andhra Pradesh (D) Karnataka
6. Musical instrument 'Sitar' is the combination of–
   (A) Bansuri and Veena
   (B) Bansuri and Sarangi
   (C) Veena and Tambura
   (D) Veena and Piano
7. Which of the following Tombs is called the second Tajmahal ?
   (A) Tomb of Anarkali
   (B) Tomb of Itimad-ud-Daula
   (C) Tomb of Rabia-ud-Daurani
   (D) None of these
8. Name the poet who was with Allauddin Khalji during his siege of Chittor—
   (A) Firdausi (B) Amir Khusro
   (C) Both of them (D) None of them
9. First Buddhist council after the death of Buddha was presided over by—
   (A) Mahakashyapa (B) Dharmasen
   (C) Ajatashatru (D) Nagasen
10. Which one of the following places was known as The 'Shiraj of the East' during the reign of the Sharki Sultans ?
    (A) Agra (B) Jaunpur
    (C) Delhi (D) Varanasi
11. For the first time the department of public works was established by—
    (A) Iltutmish
    (B) Balban
    (C) Alauddin Khalji
    (D) Firoz Shah Tughlaq
12. Losoong is a festival which is celebrated in—
    (A) Tibet
    (B) Arunachal Pradesh
    (C) Sikkim
    (D) Kerala
13. Given below is a list of traditional dresses of women alongwith states. Which one of them is not correctly matched ?
    (A) Boku — Sikkim
    (B) Mekhala — Assam
    (C) Mundu — Chhattisgarh
    (D) Pheran — Kashmir

Scanned by CamScanner

14. From the excavations of which ancient site informations are gathered regarding brisk trade relations between India and Rome during early centuries of Christian era—
(A) Madurai (B) Tamralipti
(C) Tondi (D) Arikamedu

15. Which one of the following is a famous place of pilgrimage for Jains ?
(A) Parasnath (B) Sarnath
(C) Sanchi (D) Nalanda

16. The festival of 'Onam' is associated with the legend of—
(A) Ram's victory over Ravana
(B) Durga's killing of Mahishasur
(C) Shiva Shakti
(D) Maha Bali

17. The author of 'Arthashastra' was a contemporary of—
(A) Ashoka
(B) Chandragupta Maurya
(C) Chandragupta Vikramaditya
(D) Samudra Gupta

18. The world famous rock cut Kailasa Temple at Ellora was built by the—
(A) Mauryas (B) Pallavas
(C) Chalukyas (D) Rashtrakutas

19. In which of the following were two gummads used for the first time ?
(A) Sikandar Lodhi's Tomb
(B) Khijra Khan's Tomb
(C) Allauddin Khalji's Tomb
(D) Balban's Tomb

20. Dr. M. S. Subbulakshmi distinguished herself in the field of—
(A) Kathak
(B) Bharatnatyam
(C) Playing violin
(D) Vocal music

21. 'Din-i-Ilahi' was founded by—
(A) Guru Nanak Dev (B) Kabir
(C) Akbar (D) Shahjahan

22. Which of the following performing arts is associated with Sumyukta Panigrahi ?
(A) Painting (B) Violin
(C) Dance (D) Sports

23. Who was the most distinguished Hindi poet of Akbar's Court ?
(A) Birbal
(B) Abdur Rahim Khan-i-Khana
(C) Raja Bhagwan Dass
(D) Raja Man Singh

24. Amir Khusrau was the famous poet in the Court of—
(A) Akbar
(B) Shahjahan
(C) Ibrahim Lodhi
(D) Alauddin Khalji

25. Which one of the Chola Kings conquered Ceylon ?
(A) Aditya I (B) Rajaraja I
(C) Rajendra-I (D) Vijayalaya

26. Who among the following presided over the Buddhist Council held during the reign of Kanishka at Kashmir ?
(A) Parsva (B) Nagarjuna
(C) Sudraka (D) Vasumitra

27. Which one of the following animals was not represented on the seals and terracotta art of the Harappan culture ?
(A) Coco (B) Elephant
(C) Rhinoceros (D) Tiger

28. Hoysala monuments are found in—
(A) Hampi and Hospet
(B) Halebid and Belur
(C) Mysore and Bengalore
(D) Sringeri and Dharwar

29. Who among the following Indian rulers established embassies in foreign countries on modern lines ?
(A) Haider Ali (B) Mir Qasim
(C) Shah Alam II (D) Tipu Sultan

30. Who put up the most stiff resistance against the British in India ?
(A) The Sikhs (B) The Rajputs
(C) The Mughals (D) The Marathas

31. Muhammad-bin-Tughlaq's experiment of introducing token currency failed on account of the—
(A) Rejection of token coins for purchases by foreign merchants

Scanned by CamScanner

(B) Melting of token coins
(C) Large scale minting of spurious coins
(D) Poor quality of token currency

32. Who issued a firman on 12 August, 1765 granting to the English the Diwani of Bengal, Bihar and Orissa ?
(A) Shah Alam II (B) Bahadur Shah
(C) Furrukhsiyar (D) Muhammad Shah

33. The Mangols under Gengis Khan invaded India during the reign of—
(A) Balban
(B) Feroz Tughlaq
(C) Iltutmish
(D) Muhammad-bin-Tughlaq

34. Which among the following parts was called Babul Makka (Gate of Makka) during the Mughal Period ?
(A) Calicut (B) Broach
(C) Cambay (D) Surat

35. Which of the following pairs is correctly matched ?
(A) Dewan-i-Bandagani—Tughlaq
(B) Dewan-i-Mustakhraj—Balban
(C) Dewan-i-Kohi—Alauddin Khalji
(D) Dewan-i-Arz—Muhammad Tughlaq

36. In which one of the following cities is the Lingaraja Temple located ?
(A) Bhubaneswar (B) Bijapur
(C) Kolkata (D) Shreavanabelagola

37. Which one of the following pairs (of dynasties and their founders) is not correctly matched ?
(A) Slave dynasty — Balban
(B) Tughlaq dynasty — Ghiyasuddin
(C) Khalji dynasty — Jalaluddin
(D) Second Afghan Empire — Shershah Suri

38. Babar came to India originally from—
(A) Farghana (B) Khiva
(C) Khorasan (D) Seistan

39. Which one of the following sources of Islam is associated with the practices of Prophet Mohammad ?
(A) Quran (B) Hidaya
(C) Fiqah (D) Sunnah

40. The French East India Company was formed in—
(A) 1600 (B) 1660
(C) 1664 (D) 1668

41. The Indus Valley people traded with the—
(A) Chinese
(B) Mesopotamians
(C) Parthians
(D) Romans

42. The Indian National Song was composed by—
(A) Rabindranath Tagore
(B) Bankim Chandra Chatterji
(C) Bal Gangadhar Tilak
(D) Sarojini Naidu

43. Which of the following is incorrect regarding the Brahmin religion ?
(A) It preaches complete non-violence
(B) It believes in devotion
(C) It believes in the authority of the Puranas
(D) It believes in the varied forms of gods and goddesses

44. Harihara and Bukka founded which Indian Kingdom/dynasty ?
(A) Vijayanagar (B) Bahamani
(C) The Marathas (D) The Tughlaq

45. Which of the following was the first Acharya to give a philosophical basis to Bhakti ?
(A) Ramanuj (B) Shankaracharya
(C) Madhavacharya (D) Vallabhacharya

46. The Torah is the holy book of which Community ?
(A) Rastafarians (B) Buddhists
(C) Jews (D) Jesuits

47. Ashoka's Dhamma can be best described as—
(A) Modified form of Brahmanism
(B) A socio ethical code of conduct
(C) Propagation of Bhakti
(D) Modified form of Dharmasastra

48. Who was the founder of the city of Agra ?
(A) Mohammad Tughlaq
(B) Alauddin Khalji
(C) Sikandar Lodhi
(D) Ibrahim Lodhi

Scanned by CamScanner

49. Which one among the following is least like the others ?
(A) Kathakali (B) Bhangra
(C) Kuchipudi (D) Bharat Natyam

50. Who is called of the 'Nightingale of India' ?
(A) Vijay Lakshmi Pandit
(B) Sarojini Naidu
(C) Aruna Asaf Ali
(D) Sucheta Kriplani

51. The Harappans were the earliest people to produce—
(A) Seals (B) Bronze implements
(C) Cotton (D) Barley

52. Guru Nanak preached—
(A) The unity of the Sikhs
(B) Sikh religion
(C) Human brotherhood
(D) Making Sikhs a militant organisation

53. Chinese pilgrim who visited India during Harsha Vardhan's period was—
(A) Fa-hien (B) I'tsing
(C) Nishka (D) Hiuen-T-Sang

54. Chalukya King Pulakesin II was defeated by—
(A) Mahendra Varman I
(B) Narsimha Varman I
(C) Parameshwara Verman I
(D) Jatila Parantaka

55. Who among the following sultans of Delhi has been described by the historians as the mixture of opposites' ?
(A) Balban
(B) Alauddin Khalji
(C) Muhammad-Bin-Tughlaq
(D) Ibrahim Lodi

56. Who was the last ruler of Lodi Dynasty ?
(A) Bahlol Lodi
(B) Ibrahim Lodi
(C) Daulat Khan Lodi
(D) Sikandar Lodi

57. Which of the following Mughal monarchs has vividly described Indian flora and fauna, seasons, fruits etc, in his diary ?
(A) Akbar (B) Jahangir
(C) Babur (D) Aurangzeb

58. The greatness of Shershah lies in his—
(A) Victories against Humayun
(B) Superior generalship
(C) Administrative reforms
(D) Religous tolerance

59. Greek-Roman Art has found a place in—
(A) Ellora (B) Gandhara
(C) Kalinga (D) Buddhist Art

60. The Ajanta paintings belong to the—
(A) Harappan period
(B) Mauryan period
(C) Buddhist period
(D) Gupta period

61. The ruins of the glory of Vijayanagar and a place of historical importance for its architecture style is now found at—
(A) Belur (B) Hampi
(C) Srirangapatnam (D) Tanjore

62. The temple built in A.D. 1100 and dominating all other temples in Bhubaneshwar is—
(A) Raja Rani temple
(B) Kandariya Mahadev
(C) Thribhuvaneswara Lingaraja
(D) Mukhteswara

63. The Bahmani Kingdom was founded by—
(A) Ahmad Shah I
(B) Alauddin Hasan
(C) Mahmud Gawan
(D) Firoz Shah Bahmani

64. The Dilwara temples at Mount Abu in Rajasthan were built by the followers of—
(A) Buddhism (B) Jainism
(C) Hinduism (D) Sikhism

65. In the third Battle of Panipat, the Marathas were defeated by—
(A) The Afghans (B) The Mughals
(C) The English (D) The French

66. Alberuni came to India with—
(A) Mahmud of Ghazni
(B) Alexander
(C) Babur
(D) Timur

67. Where did Aurangzeb die ?
(A) Ahmed Nagar (B) Aurangabad
(C) Allahabad (D) Lahore

Scanned by CamScanner

68. What inspired the paintings of Ajanta ?
    (A) Compassionate Buddha
    (B) Radha Krishna leela
    (C) Jain Tirthankaras
    (D) Mahabharat encounters

69. The rulers of which dynasty started the practice of granting tax free villages to Brahamanas and Buddhist Monks ?
    (A) Sata-Vahanas (B) Mauryas
    (C) Guptas (D) Cholas

70. Consider the following statements :
    1. The Islamic calendar is twelve days shorter than the Gregorian calendar.
    2. The Islamic calendar began in AD 632.
    3. The Gregorian calendar is a solar calendar.

    Which of the statements given above is/are correct ?
    (A) 1 only (B) 1 and 2
    (C) 1 and 3 (D) 3 only

71. Who started the Saka Era still used by the Government of India ?
    (A) Kanishka (B) Vikramaditya
    (C) Samundragupta (D) Asoka

72. Zafarnama was a letter written to a Mughal emperor by which of the following Sikh Gurus ?
    (A) Hari Rai (B) Arjun Dev
    (C) Tegh Bahadur (D) Govind Singh

73. Buddha's preachings were concerned most with—
    (A) Devotionalism
    (B) Ritualism
    (C) Belief in the same God
    (D) Purity of thought and conduct

Answers

1. (B)	2. (D)	3. (C)	4. (B)	5. (A)
6. (C)	7. (C)	8. (B)	9. (A)	10. (B)
11. (D)	12. (B)	13. (C)	14. (D)	15. (A)
16. (D)	17. (B)	18. (D)	19. (A)	20. (D)
21. (C)	22. (C)	23. (B)	24. (D)	25. (C)
26. (D)	27. (A)	28. (B)	29. (D)	30. (D)
31. (C)	32. (A)	33. (C)	34. (D)	35. (A)
36. (A)	37. (D)	38. (A)	39. (D)	40. (C)
41. (B)	42. (B)	43. (A)	44. (A)	45. (A)
46. (C)	47. (B)	48. (C)	49. (B)	50. (B)
51. (C)	52. (C)	53. (D)	54. (B)	55. (C)
56. (B)	57. (C)	58. (C)	59. (B)	60. (D)
61. (B)	62. (C)	63. (B)	64. (B)	65. (A)
66. (A)	67. (A)	68. (A)	69. (A)	70. (C)
71. (A)	72. (D)	73. (D)		

Hint

24. He wrote in Persian as well as in Hindi.

Scanned by CamScanner

Indian Polity and Constitution

1. The primary function of the Finance Commission in India is to—
   (A) Distribute revenue between the centre and the states
   (B) Prepare the Annual Budget
   (C) Advise the President on financial matters
   (D) Allocate the funds to various ministries of the union and the state governments

2. Which amendment of the Constitution of India limits the number of Ministers ?
   (A) 73rd
   (B) 86th
   (C) 87th
   (D) 91st

3. Name the person who was elected Speaker of the Lok Sabha following general elections to the 16th Lok Sabha in April/May 2014 is—
   (A) Somnath Chatterjee
   (B) Kapil Sibal
   (C) Praful Patel
   (D) Sumitra Mahajan

4. A college student desires to get elected to the Municipal Council of his city. The validity of his nomination would depend on the important condition, among others, that—
   (A) He obtains permission from the Principal of his college
   (B) He is a member of a political party
   (C) His name figures in the voter's list
   (D) He files a declaration owing allegiance to the Constitution of India

5. In the Centre State financial relations in India, Gadgil Formula is used in—
   (A) Division of tax revenue
   (B) Formulating the policy for fresh borrowings
   (C) Writing off states' indebtedness to the Centre
   (D) Allocating Central Plan assistance between states

6. Which one of the following statements is incorrect ?
   (A) Goa attained full statehood in 1987
   (B) Diu is an island in the Gulf of Khambhat
   (C) Daman and Diu were separated from Goa by the 56th Amendment of the Constitution of India
   (D) Dadra and Nagar Haveli were under French colonial rule till 1954

7. As per the Constitution of India, a citizen of India should not be less than ..... of age to become the President of India.
   (A) 30 years (B) 35 years
   (C) 40 years (D) 50 years

8. Parliament can make any law for the whole or any part of India for implementing international treaties—
   (A) With the consent of all the states
   (B) With the consent of the majority of states
   (C) With the consent of the states concerned
   (D) Without the consent of any state

9. Which one of the following statements about a Money Bill is not correct ?
   (A) A Money Bill can be tabled in either House of Parliament
   (B) The speaker of the Lok Sabha is the final authority to decide whether a Bill is a Money Bill or not
   (C) The Rajya Sabha must return a Money Bill passed by the Lok Sabha and send it for consideration within 14 days
   (D) The President cannot return a Money Bill to the Lok Sabha for reconsideration

Scanned by CamScanner

10. The 73rd Constitution Amendment Act, 1992 refers to the—
    (A) Generation of gainful employment for the unemployed and the under employed men and women in rural areas
    (B) Generation of employment for the able-bodied adults who are in need and desirious of work during the lean agricultural season
    (C) Laying the foundation for strong and vibrant Panchayati Raj institutions in the country
    (D) Guarantee of right to life, liberty and security of persons, equality before law and protection without discrimination.
11. How many recognised National Political Parties are in India ?
    (A) 4 (B) 6
    (C) 5 (D) 7
12. Who is the Chief Election Commissioner of India at present ?
    (A) M. S. Gill
    (B) J. M. Lyngdoh
    (C) Naseem Zaidi
    (D) T. N. Seshan
13. Through which Constitutional Amendment was the Nagarpalika Bill passed ?
    (A) 70th (B) 72th
    (C) 73th (D) 74th
14. The upper House of Parliament is known as—
    (A) Parliament House
    (B) Rashtrapati Bhawan
    (C) Rajya Sabha
    (D) Lok Sabha
15. The President of India can proclaim National Emergency—
    (A) On the written advice of the Council of Ministers headed by the Prime Minister
    (B) On the advice of the Speaker
    (C) On the advice of the leader of the ruling party or set of parties in power
    (D) At his own discretion
16. According to the 73rd Constitution Amendment Act, in the event of dissolution of Panchayat Raj institutions election for the new body should be compulsorily held within—
    (A) 2 months (B) 4 months
    (C) 6 months (D) 8 months
17. A dispute relating to the election of the President of India is decided by the—
    (A) Election Commission
    (B) Chief Justice of India
    (C) Supreme Court
    (D) Parliament
18. India is a—
    (A) Union of Federal States
    (B) Federal Union of States
    (C) Union of States
    (D) Union of States and Union Territories
19. As per Indian Constitution, in the event of any conflict between the union laws and state laws—
    (A) The matter is referred to the Supreme Court
    (B) The state laws shall prevail
    (C) The union laws shall prevail
    (D) The matter is referred to the Parliamentary Committee specifically constituted to resolve the dispute
20. The sitting of the House of the people may be terminated by—
    (A) Adjournment (B) Prorogation
    (C) Dissolution (D) All of these
21. Ad hoc judges are appointed to the Supreme Court when—
    (A) Some judges go on long leave
    (B) No one is available for permanent appointment
    (C) There is an abnormal increase in cases pending before the Court
    (D) There is no quorum of the judges available to hold any session of the Court
22. Which one of the following constitutional amendments reserves seats for admission in private unaided institutions for members of scheduled castes/tribes and other backward classes ?
    (A) 92nd Constitution (Amendment) Act
    (B) 93rd Constitution (Amendment) Act
    (C) 91st Constitution (Amendment) Act
    (D) 90th Constitution (Amendment) Act

Scanned by CamScanner

23. The President can dissolve the Lok Sabha—
(A) On the advice of the Chief Justice
(B) On the advice of the Prime Minister
(C) On the advice of the Vice-President
(D) On the advice of the Speaker of the Lok Sabha

24. Which one of the following Articles of the Indian Constitution belongs to a different category ?
(A) Art. 14 (B) Art. 15
(C) Art. 16 (D) Art. 19

25. Which Article of the Indian Constitution empowers Parliament to make law for giving effect to international agreements ?
(A) Art. 249 (B) Art. 250
(C) Art. 252 (D) Art. 253

26. Who has control over the 'issue of money' from the consolidated Fund of India ?
(A) Comptroller and Auditor General of India
(B) Parliament
(C) Authorised Ministers
(D) None of the above

27. The 93rd Constitutional amendment, 2005 relates to—
(A) Making primary education as a fundamental right
(B) Inclusion of Maithili, Dogri, Bodo and Santhali in the 8th schedule of the constitution
(C) Admission to both private and Govt. Educational Institution for SC/ST
(D) None of the above

28. Money Bill has been defined by the constitution under Article—
(A) 109 (B) 110
(C) 111 (D) Both (B) and (C)

29. Zonal councils have been created by—
(A) Constitution
(B) Act of Parliament
(C) Government Resolution
(D) National Development Council

30. There is no reservation for SC and ST for Lok Shabha in—
(A) Arunachal Pradesh
(B) Jammu & Kashmir
(C) Meghalaya
(D) All the above

31. Inter state Councils owe their existence to—
(A) Provision in the Constitution
(B) Act of Parliament
(C) Recommendation of the Planning Commission
(D) Resolution adopted by Chief Ministers conference

32. According to the law enacted by Parliament in December 1989, the legal age for a citizen to become major is—
(A) 23 years (B) 22 years
(C) 20 years (D) 18 years

33. Consider the following statements :
1. The highest criminal court of the district is the Court of District and Sessions Judge.
2. The District Judges are appointed by the Governor in consultation with the High Courts.
3. A person to be eligible for appointment as a District Judge should be an advocate or a pleader of seven years' standing or more, or an officer in judicial service of the Union or the State.
4. When the Sessions Judge awards death sentence, it must be confirmed by the High Court before it is carried out.

Which of the statements given above are correct ?
(A) 1, 2, 3 and 4 (B) 1 and 2
(C) 1, 3 and 4 (D) 2, 3 and 4

34. Which among the following taxes is not shared by the Central Government with U.P. Government under the Finance Commission Award ?
(A) Income Tax
(B) Excise Duty
(C) Custom Duty
(D) Agriculture Income Tax

35. The phrase 'Procedure established by Law' is borrowed from the constitution of—
(A) South Africa (B) Japan
(C) Ireland (D) United States

36. Which of the following are not included in the Right to Freedom of Religion in the Constitution of India ?
1. Freedom of conscience and the right to practise and propagate religion.

Scanned by CamScanner

2. Levying of taxes or use of funds of the government for the promotion or maintenance of any religion.
3. Establishment and maintenance of religious and charitable institutions.
4. Imparting of religious instructions in any government maintained institutions.

Select the correct answer from the code given below :

(A) 1 and 2 (B) 1, 2 and 3
(C) 1, 3 and 4 (D) 2 and 4

37. Which one of the following provisions of the constitution does not require the consent of the states for the purpose of amendment ?
(A) 7th Schedule
(B) Fundamental rights
(C) Article 368
(D) Electoral College of the President

38. Democratic Decentralization in India means—
(A) More financial decentralization in favour of the states
(B) Decentralization of power in bureaucratic structures
(C) Distribution of subjects between the centre and the states
(D) Establishment of Panchayati Raj

39. The Estimates Committee is constituted—
(A) In the Rajya Sabha only
(B) In the Lok Sabha only
(C) In the Rajya Sabha and Lok Sabha both
(D) As a joint Committee of both Houses

40. The Union Budget is presented in—
(A) The Lok Sabha
(B) The Rajya Sabha
(C) Joint session of the Lok Sabha and the Rajya Sabha
(D) Anywhere

41. Which of the following statements regarding judiciary in India are correct ?
1. In India, judiciary is not a part of the State.
2. In India, the pattern and designation of subordinate courts in States is not uniform.
3. Munsiff Courts have both civil and criminal jurisdiction.
4. The pattern of subordinate courts in metropolitan areas is the same as that in districts.

Select the correct answer from the code given below :

(A) 2 and 3 (B) 1 and 2
(C) 1 and 3 (D) 3 and 4

42. Match List-I (Articles of the Constitution of India) with List-II (Provisions) and select the correct answer using the codes given below the lists :

List-I (Articles of the Constitution of India)

(a) Article 14 (b) Article 15
(c) Article 16 (d) Article 17

List-II (Provisions)

1. The State shall not discriminate against any citizen on grounds only of religion, race, caste, sex, place of birth or any of them.
2. The State shall not deny to any person equality before the law or the equal protection of laws within the territory of India.
3. Untouchability is abolished and its practice in any form is forbidden.
4. There shall be equality of opportunity for all citizens in matters relating to employment or appointment to any office under the State.

Codes :

	(a)	(b)	(c)	(d)
(A)	2	1	4	3
(B)	2	4	1	3
(C)	3	1	4	2
(D)	3	4	1	2

43. Judicial Review in India is based on—
(A) Procedure established by law
(B) Due process of law
(C) Rule of law
(D) Precedents and conventions

44. Which one of the following Articles of the Constitution of India says that the executive power of every State shall be so exercised as not to impede or prejudice the exercise of the executive power of the Union ?
(A) Article 257 (B) Article 258
(C) Article 355 (D) Article 356

Scanned by CamScanner

45. On the first occasion, the Prime Minister of India was appointed by—
(A) The Governor General
(B) The British Emperor
(C) Mahatma Gandhi
(D) The Viceroy of India

46. The Operational Duration of the 14th Finance Commission are for the period—
(A) 2002–07
(B) 2006–11
(C) 2004–09
(D) 2015–20

47. Under the Cabinet Mission Plan, the total number of the seats allotted to each province in the ratio of one representative to the population of—
(A) 8 lakh persons
(B) 10 lakh persons
(C) 12 lakh persons
(D) 15 lakh persons

48. Which Article of the Constitution of India deals with the appellate jurisdiction of the Supreme Court in connection with constitutional cases ?
(A) Article 131
(B) Article 132
(C) Article 132 read with Article 134A
(D) Article 133 read with Article 134A

49. Which one of the following is in the state list?
(A) Railway
(B) Corporation Tax
(C) Census
(D) Economic and social planning

50. The Constitution (86th Amendment Act, 2002) relates to—
(A) Preventing defections in Legislatures
(B) Making Primary Education for children from 6 to 14 years of age as a fundamental rights
(C) Inclusion of certain languages in the 8th schedule of the constitution
(D) None of the above

51. Who held the office of the Vice President of India for two full terms ?
(A) S. Radhakrishnan
(B) V.V. Giri
(C) B.D. Jatti
(D) M. Hidayathullah

52. Central Board of Film Certification comes under which of the following Ministries of the Government of India ?
(A) Ministry of Tourism and Culture
(B) Ministry of Human Resources Development
(C) Ministry of Information and Broadcasting
(D) Ministry of Youth Affairs and Sports

53. Fundamental Rights in the Indian Constitution have been taken from the—
(A) Russian Constitution
(B) U.S.A. Constitution
(C) British Constitution
(D) Act of 1935

54. The President of India can declare—
(A) National Emergency
(B) Financial Emergency
(C) Constitutional Emergency
(D) All of the above

55. The Philosopher President of India was—
(A) V.V. Giri
(B) Dr. Rajendra Prasad
(C) Dr. S. Radhakrishnan
(D) Dr. Fukhruddin Ali Ahmed

56. The First General Elections to the Lok Sabha were held in—
(A) 1949 (B) 1952
(C) 1950 (D) 1954

57. The Lok Sabha is called in session at least—
(A) Once a year (B) Twice a year
(C) Thrice a year (D) Four times a year

58. Who is the Human Resources Development Minister of Union ?
(A) Smriti Irani
(B) Najma Heptulla
(C) Narendra Modi
(D) Jaswant Singh

59. No person can be employed in factories or mines unless he is above the age of—
(A) 12 years (B) 14 years
(C) 18 years (D) 20 years

Scanned by CamScanner

60. When the offices of both the President and Vice-President of India are vacant, who will discharge their functions ?
(A) Prime Minister
(B) Home Minister
(C) Chief Justice of India
(D) The Speaker

61. The proclamation of Emergency under Article 352 of the Constitution of India must be approved by Parliament within—
(A) 6 months (B) 3 months
(C) 2 months (D) 1 month

62. When the two Houses of Parliament differ regarding an ordinary Bill, then the deadlock is resolved by—
(A) A joint sitting of the two Houses
(B) The President of India
(C) The Speaker of the Lok Sabha
(D) A special committee formed for the purpose

63. Who took oath as the Chief Justice of India in December 2015 ?
(A) A. S. Anand
(B) R. N. Mishra
(C) T. S. Thakur
(D) D.N. Agarwal

64. Public Accounts Committee has the following members. Tick the correct answer ?
(A) 15 (B) 16
(C) 22 (D) 27

65. How can the President of India utilize funds from the Contingency Fund ?
(A) Prior to parliamentary sanction
(B) During the national emergency
(C) After parliamentary sanction
(D) He cannot spend it

66. The largest share of revenue receipts of the state government comes from—
(A) Registration fees
(B) Land revenue
(C) General sales tax
(D) Share of union excise duty

67. Which one of the following Constitutional Amendments bans floor crossing by a member elected on a party ticket to a Legislature ?
(A) 52nd as amended by 91st Amendment Act, 2003
(B) 54th
(C) 56th
(D) 58th

68. The NDA government at the centre formed following general elections to the 16th Lok Sabha in April/May 2014 is a coalition of all the following except—
(A) BJP
(B) Samajwadi Party
(C) Shiv Sena
(D) Siromani Akali Dal

69. A new Chapter IV A on Fundamental Duties was inserted in the Indian Constitution in—
(A) 1972 (B) 1976
(C) 1980 (D) 1984

70. The new States of Chhattisgarh, Uttaranchal and Jharkhand were created in—
(A) 1999 (B) 2001
(C) 2000 (D) 2002

71. Which one of the following bodies is presided over by a non-member ?
(A) Lok Sabha
(B) Rajya Sabha
(C) Vidhan Sabhas of various States
(D) None of the above

72. Who is the Present (December 2016) President of the Bharatiya Janata Party (BJP) ?
(A) Amit Shah
(B) L. K. Advani
(C) Murli Manohar Joshi
(D) None of the above

73. The Supreme Court tenders advice to the President of India on a matter of law or fact—
(A) On its own
(B) Only when such advice is sought
(C) Only if the matter relates to some basic issues
(D) Only if the issue poses a threat to the unity and integrity of the country

74. The Shimla Pact between India and Pakistan stood for—
(A) Abstaining from first use of nuclear weapons
(B) Bilateral settlement of disputes
(C) Final resolution of Jammu and Kashmir problem
(D) Resolution of dispute relating to Ranna of Kachchh

Scanned by CamScanner

75. Six months shall NOT intervene between two sessions of the Indian Parliament because—
(A) It is the customary practice
(B) It is the British convention followed in India
(C) It is an obligation under the Constitution of India
(D) None of the above

76. The states of the Indian union can be reorganised or their boundaries altered by—
(A) The Union Parliament by a simple majority in the ordinary process of legislation
(B) Two thirds majority of both the Houses of Parliament
(C) Two thirds majority of both the Houses of Parliament and the consent of the legislatures of concerned states.
(D) An executive order of the Union Government with the consent of the concerned State Governments

77. The Basic Structure Theory of the Constitution of India was propounded by the Supreme Court in the case of—
(A) Minerva Mills *Vs*. Union of India
(B) Golaknath *Vs*. State of Punjab
(C) Maneka Gandhi *Vs*. Union of India
(D) Keshavananda *Vs*. State of Kerala

78. Which one of the following committee is not associated with Panchayati Raj in India ?
(A) Sadiq Ali
(B) Dinesh Goswami
(C) L. M. Singhvi
(D) P. K. Thungan

79. If a new state of the Indian Union is to be created, which one of the following schedules of the Constitution must be amended ?
(A) First (B) Second
(C) Third (D) Fifth

80. Which party won the largest number of seats to the 16th Lok Sabha in Uttar Pradesh in the General Elections held in 2014 ?
(A) Bhartiya Janata Party
(B) Bahujan Samaj Party
(C) Congress
(D) Samajwadi Party

81. Which Article of the Constitution provides that it shall be the endeavour of every state to provide adequate facility for instruction in the mother tongue at the primary stage of education ?
(A) Article 349 (B) Article 350
(C) Article 350A (D) Article 351

82. Which one of the following duties is not performed by the Comptroller and Auditor General of India ?
(A) To audit and report on all expenditure from the Consolidated Fund of India
(B) To audit and report on all expenditure from the Contingency Funds and Public Accounts
(C) To audit and on all trading, manufacturing, project and loss accounts
(D) To control the reciept and issue of public money and to ensure that the public revenue is lodged in the exchequer

83. How many seats did BJP win on its own in the elections to 16th Lok Sabha held in April/May, 2014 ?
(A) 145 (B) 282
(C) 186 (D) 213

84. Which one of the following statements correctly describes the fourth schedule of the constitution of India ?
(A) It lists the distribution of powers between the union and the states
(B) It contains the languages listed in the Constitution
(C) It contains the provisions regarding the administration of tribal areas
(D) It allocates seats in the Council of States

85. In what way does the Indian parliament exercise control over the administration ?
(A) Through Parliamentary Committees
(B) Through consultative committees of various Ministries
(C) By making the administrators send periodic reports
(D) By compelling the executive to issue wrists

86. The Indian National Congress got split up in Kerala. The veteran Congress politician K. Karunakaran formed a new party with the name of—
(A) Democratic Indira Congress (K)
(B) New Kerala Congress

Scanned by CamScanner

(C) Progressive Congress
(D) Nationalist Congress Party

87. Which one of the following bodies is not a creation of the Constitution ?
(A) Finance Commision
(B) Election Commision
(C) Planning Commision
(D) Union Public Service Commision

88. Who appoints the Governors of Indian states ?
(A) Council of Ministers
(B) Vice-President
(C) Prime Minister
(D) President

89. Who is the Chairman of NITI Aayog ?
(A) Arvind Pangaria (B) P. Chidambram
(C) Sonia Gandhi (D) Narendra Modi

90. How many Fundamental Duties have been provided in the Article 51A of the Constitution ? Mention the latest position—
(A) 9 (B) 10
(C) 12 (D) 11

91. Part IV of the Constitution of India deals with—
(A) Fundamental Rights
(B) Citizenship
(C) Directive Principles of State Policy
(D) Union Executive

92. Who is the Chairperson of UPA ?
(A) Sheela Dixit (B) Manmohan Singh
(C) Sonia Gandhi (D) Rahul Gandhi

93. Power, authority and responsibilities of municipalities are listed in which one of the following schedules of the Constitution of India ?
(A) Ninth (B) Tenth
(C) Eleventh (D) Twelfth

94. Who among the following is the Chairman of the National Integration Council ?
(A) The President
(B) The Vice-President
(C) The Prime Minister
(D) The Chief Justice of India

95. The basic parameters of India's foreign policy were laid down by—
(A) Dr. Rajendra Prasad
(B) Dr. Sarvepalli Radhakrishnan
(C) Jawaharlal Nehru
(D) Dr. Zakir Husain

96. Community Development Programme was initiated primarily to—
(A) Bring in development among people by raising the literacy level
(B) Increase the control of the masses over the locally available resources
(C) Bring about overall development of the villages through self-help
(D) Increase agricultural production through mechanised farming

97. Under which one of the following Articles of the Constitution of India, is the Central Government bound to place the annual budget statement before Parliament for approval ?
(A) 112 (B) 111
(C) 110 (D) 109

98. The 92nd Constitution (Amendment) Act, 2003, relates to—
(A) Preventing defections in Legislatures
(B) Making primary education for children from 6 to 14 years as fundamental rights
(C) Base year for delimitation of constituencies being raised from 1999 to 2001
(D) Inclusion of Maithili, Dogri, Bodo and Santhali in the 8th schedule of the constitution

99. The President of the Indian National Congress is—
(A) Dr. Manmohan Singh
(B) Gulam Navi Azad
(C) Sonia Gandhi
(D) None of the above

100. Which one of the following is an example of direct democracy ?
(A) Gram Sabha
(B) Village Panchayat
(C) Nagar Panchayat
(D) District Panchayat

101. Who is the present Chief Minister of U.P. ?
(A) Kalyan Singh
(B) Mulayam Singh Yadav
(C) Mayawati
(D) Akhilesh Yadav

Scanned by CamScanner

102. Can there be a common High Court for two or more states ?
(A) Yes
(B) No
(C) Only in a financial emergency
(D) Only in a national emergency

103. The right to vote in the national elections in India is based on the principle of—
(A) Restricted franchise
(B) Hereditary privileges
(C) Property qualifications
(D) Universal adult suffrage

104. Which of the following is not included in Article 19 of the Constitution ?
(A) Freedom of speech and expression
(B) Freedom of entertainment, amusement and fun
(C) Freedom of assembly, association and unions
(D) Freedom of movement, residence, settlement, profession and trade

105. The Sarvodaya Movement was started by—
(A) Mahatma Gandhi
(B) Jayaprakash Narayan
(C) Vinoba Bhave
(D) Dada Dharmadhikari

106. The Right to Information Act, 2005 came into effect on—
(A) 10 December, 2003
(B) 5 January, 2004
(C) 7 July, 2004
(D) 12 October, 2005

107. By an amendment the salary of President of India is—
(A) ₹ 50,000 (B) ₹ 1,50,000
(C) ₹ 75,000 (D) ₹ 85,000

108. The declaration about the reconstituted National Integration Council, which is chairmanned by Prime Minister Dr. Manmohan Singh was made on—
(A) Jan. 26, 2005 (B) Feb. 2, 2005
(C) Nov. 19, 2004 (D) March 8, 2005

109. By an amendment the salary of Vice-President of India is—
(A) ₹ 40,000 (B) ₹ 60,000
(C) ₹ 75,000 (D) ₹ 1,25,000

110. By an amendment the salary of Member of Parliament is—
(A) ₹ 16,000 (B) ₹ 25,000
(C) ₹ 40,000 (D) ₹ 50,000

Answers

1. (A)	2. (D)	3. (D)	4. (C)	5. (D)
6. (D)	7. (B)	8. (D)	9. (A)	10. (C)
11. (B)	12. (C)	13. (D)	14. (C)	15. (A)
16. (C)	17. (C)	18. (C)	19. (C)	20. (A)
21. (D)	22. (B)	23. (B)	24. (D)	25. (D)
26. (B)	27. (C)	28. (B)	29. (B)	30. (B)
31. (A)	32. (D)	33. (A)	34. (C)	35. (D)
36. (C)	37. (B)	38. (D)	39. (B)	40. (A)
41. (A)	42. (A)	43. (A)	44. (A)	45. (D)
46. (D)	47. (B)	48. (D)	49. (D)	50. (B)
51. (A)	52. (C)	53. (B)	54. (D)	55. (C)
56. (B)	57. (B)	58. (A)	59. (B)	60. (C)
61. (D)	62. (A)	63. (C)	64. (C)	65. (A)
66. (D)	67. (A)	68. (B)	69. (B)	70. (C)
71. (B)	72. (A)	73. (B)	74. (B)	75. (C)
76. (A)	77. (D)	78. (B)	79. (A)	80. (A)
81. (C)	82. (C)	83. (B)	84. (D)	85. (A)
86. (A)	87. (C)	88. (D)	89. (D)	90. (D)
91. (C)	92. (C)	93. (D)	94. (C)	95. (C)
96. (C)	97. (A)	98. (D)	99. (C)	100. (A)
101. (D)	102. (A)	103. (D)	104. (B)	105. (C)
106. (D)	107. (B)	108. (B)	109. (D)	110. (D)

Hints

24. Article 14, 15 and 16 relate to Right to Equality, whereas Article 19 relate to Right to Freedom.

87. Finance Commission (Article 280); Election Commission (Article 324); Union Public Service Commission (Article 315).

100. Indian National Congress bagged 27 seats.

106. The effective date is often incorrectly referred to as October 12, 2005. The Act actually come to the force on the midnight between the 12th and 13th, which means that it came into effect from 13th onwards.

Scanned by CamScanner

Indian National Movement

1. The Simon Commission was formed to review—
   (A) Legislatures in India
   (B) Fitness of India for further reforms
   (C) The position of the Viceroy
   (D) A Constitution for India

2. One time associate of Mahatma Gandhi broke off from him and launched a radical movement called 'Self respect movement' Who was he?
   (A) P. Thyagaraja Shetti
   (B) Chhatrapati Maharaj
   (C) E.V. Ramaswamy Naicker
   (D) Jyotirao Govindrao Phule

3. The first attempt to introduce a representative and popular element in the governance of India was made through—
   (A) Indian Councils Act 1861
   (B) Indian Councils Act 1892
   (C) Indian Councils Act 1909
   (D) Govenment of India Act 1919

4. What was the attempt of Jyotiba Phule's satyashodhak samaj in the last century ?
   (A) Saving the lower castes from hypocritical Brahmans and their opportunistic scriptures
   (B) Attacking the caste system
   (C) Led an anti landlord and anti mahajan upsurge in Satara
   (D) Separate representation for untouchables

5. In which of the following movements did Mahatma Gandhi make the first use of hunger strike as a weapon?
   (A) Non-Cooperation Movement 1920-22
   (B) Rowlatt Satyagraha 1919
   (C) Ahmedabad Strike 1918
   (D) Bardoli Satyagraha

6. Who led the Salt Satyagraha Movement with Gandhi ?
   (A) Annie Besant
   (B) Mridula Sarabhai
   (C) Muthu Lakshmi
   (D) Sarojini Naidu

7. Who persuaded the ratings of the RIN (Royal Indian Navy) to surrender on February 23, 1946 ?
   (A) Mahatma Gandhi
   (B) Jawaharlal Nehru and Maulana Abul Kalam Azad
   (C) Sardar Vallabh Bhai Patel and M.A. Jinnah
   (D) Morarji Desai and J.B. Kripalani

8. On September 20, 1932 Mahatma Gandhi began a fast unto death in Yervada jail against the—
   (A) British repression of the satyagrahis
   (B) Violation of the Gandhi Irwin Pact
   (C) Communal award of Ramsay Mac-Donald
   (D) Communal riots in Calcutta

9. What was the ultimate goal of Mahatma Gandhi's salt satyagraha ?
   (A) Repeal of salt satyagraha
   (B) Curtailment of the Government's power
   (C) Economic relief to the common people
   (D) Purna swaraj for India

10. In 1939, for the first time, Gandhiji tried out his specific techniques of controlled mass struggle in native state. He allowed one of his close associates to lead a satyagraha. Who was he ?
    (A) K.T. Bhashyam in Mysore
    (B) Jamnalal Bajaj in Jaipur
    (C) Sardar Vallabh Bhai Patel in Rajkot
    (D) Nebakrishna Chaudhri in Dhenkanal

Scanned by CamScanner

11. Bengal was partitioned in 1905 under the Viceroyalty of—
(A) Lord Curzon (B) Lord Dufferin
(C) Lord Hardinge (D) Lord Minto

12. Where did Mahatma Gandhi first apply his technique of satyagraha?
(A) Dandi (B) Champaran
(C) England (D) South Africa

13. The Azad Hind Fauj was formed in—
(A) 1937 (B) 1942
(C) 1943 (D) 1945

14. "In this instance we could not play off the Mohammedans against the Hindus" To which one of the following events did this remark of Aitchison relate ?
(A) Revolt of 1857
(B) Champaran Satyagraha (1942)
(C) Khilafat and Non-cooperation Movement (1919-22)
(D) August Movement of 1942

15. The first Governor General of India was appointed under the provisions of the Act of—
(A) 1773 (B) 1784
(C) 1833 (D) 1858

16. Who among the following is associated with Bardoli Satyagraha ?
(A) Kaka Kalelkar (B) Vinoba Bhave
(C) Sardar Patel (D) Mahatma Gandhi

17. Gandhiji believed that Satyagraha is a weapon of—
(A) The poor
(B) The weak
(C) The untouchables
(D) None of these

18. In the year 1905, Gopal Krishna Gokhale founded the—
(A) Servants of India Society
(B) Asiatic Society
(C) Brahmo Samaj
(D) Bharat Sewak Samaj

19. The British Prime Minister who declared his Communal Award Scheme to India in 1932 was—
(A) Winston Churchill
(B) Clement Attlee
(C) Ramsay McDonald
(D) Nerille Chamberlain

20. Santhals were associated with—
(A) Tribal Rebellion
(B) Non-cooperation Movement
(C) Salt Satyagraha
(D) Indigo Revolt

21. The Congress is tottering to its fall and one of my great ambitions, while in India, is to assist it to a peaceful demise.
Who made this statement ?
(A) Cripps (B) Curzon
(C) Dufferin (D) Irwin

22. Mahatma Gandhi left Bombay for London to participate in the Second Round Table Conference as a Congress representative in the ship known as—
(A) S. S. Rajputana
(B) S. S. Viceroy of India
(C) S. S. Mooltan
(D) S. S. Conte Rosso

23. Who had moved a resolution for the Creation of Pakistan in the Muslim League Session of 1940 ?
(A) M. A. Jinnah (B) Mohammad Iqbal
(C) Rahmat Ali (D) Khaliqujjaman

24. An anti British outfit 'Abhinava Bharat' was founded by—
(A) R. G. Bhandarkar
(B) V. D. Savarkar
(C) C. R. Das
(D) Sardar Bhagat Singh

25. Which of the following represented the Indian Christians in the First Round Table Conference held at London ?
(A) Rao Bahadur Srinivasan
(B) Sir Akbar Hydari
(C) A. T. Pannirselvam
(D) K. T. Paul

26. The Government of India Act 1935 provided for a federation with the provinces and the princely states as its units. Why did this part of the Act not come into force? Because—
(A) The Congress did not accept it

Scanned by CamScanner

(B) The Muslim league did not accept it
(C) Some of the provinces did not accept it
(D) The rulers of the princely states did not consent to join

27. The Hunter Inquiry Committee was appointed by the British Government which was expected to look into—
(A) Bardoli Satyagraha
(B) Khilafat agitation
(C) Jallianwala Bagh Massacre
(D) Chauri-Chaura incident

28. The 'Young India' was started as a weekly by—
(A) The Home Rule Party
(B) The Extremist Party
(C) Ghadar Party
(D) Swaraj Party

29. Which of the following said that Mohammad Ali Jinnah was the 'Ambassador of Hindu-Muslim unity' ?
(A) Sarojini Naidu
(B) Annie Besant
(C) Raj Kumari Amrit Kaur
(D) Aruna Asaf Ali

30. Why did the Indians decide to boycott the Simon Commission appointed to look into the working of the Act of 1919? Because—
(A) It intended to provide communal representation to the untouchables
(B) It denied the Congress the right to nominate a Muslim as a representative on the Commission
(C) It did not include any Indian as its member
(D) It accorded greater representation to the Muslims than their strength in Muslim minority areas.

31. 'Depressed Classes League' was established by—
(A) Dr. B. R. Ambedkar
(B) Babu Jagjiwan Ram
(C) N. S. Kajrolkar
(D) Mahatma Jyotiba Phule

32. Sir Thomas Munro is associated with the land revenue settlement—
(A) Permanent settlement
(B) Mahalwari settlement
(C) Rayotwari settlement
(D) None of the above

33. Persian weekly 'Miratul Akhbar' was published by—
(A) Lala Lajpat Rai
(B) Raja Ram Mohan Roy
(C) Sir Syed Ahmad Khan
(D) Maulana Shibli Nomani

34. Which of the following occurred last ?
(A) Annexation policy
(B) Partition of Bengal
(C) Permanent settlement
(D) Subsidiary Alliance

35. Karamchand Gandhi was a Dewan of—
(A) Porbandar
(B) Rajkot
(C) Wakaner
(D) All of the above states

36. Which, one of the following persons, called Irwin and Gandhiji 'the two mahatmas' ?
(A) Mira Benn
(B) Sarojini Naidu
(C) Madan Mohan Malviya
(D) Jawaharlal Nehru

37. Which one of the following was the first to impose censorship of the press ?
(A) Wellesley (B) Hastings
(C) Johan Adams (D) Dalhousie

38. Which of the following states was not annexed under the Doctrine of Lapse ?
(A) Satara (B) Jhansi
(C) Awadh (D) Nagpur

39. On November 1, 1858, Queen Victoria's Proclamation was read out at Allahabad by—
(A) Lord William Bentick
(B) Lord Canning
(C) Lord Bernham
(D) Sir Harcourt Butler.

40. The prefix 'Mahatma' was added with the name of Gandhi—
(A) During Champaran satyagrah
(B) During the satyagrah against Rowlatt Act

Scanned by CamScanner

(C) In the Amritsar session of the Indian National Congress 1919

(D) At the beginning of khilafat movement

41. Who was the first President of All India Trade Union Congress ?

(A) Dewan Chaman Lal

(B) Lala Lajpat Rai

(C) N. G. Ranga

(D) Swami Sahajanand

42. Kanpur conspirarcy case was against leaders of—

(A) Khilafat movement

(B) Non-cooperation movement

(C) Communist movement

(D) Revolutionary movement

43. Of the following who was not a signatory to the historic Poona Pact of 1932.

(A) B.R. Ambedkar

(B) Madan Mohan Malviya

(C) C. Rajgopalachari

(D) M.K. Gandhi

44. The American publicist who was with Mahatma Gandhi during his 'Quit India' movement was—

(A) Louis Fischer (B) William L. Shiver

(C) Web Miller (D) Negley Farson

45. What was Lala Lajpat Rai demostrating against when he succumbed to police brutality ?

(A) Rowlatt Act

(B) Minto Morley Reforms

(C) Pitts India Act

(D) Simon Commission

46. Who founded the Servants of India Society ?

(A) Chittaranjan Das

(B) Bal Gangadhar Tilak

(C) Lala Her Dayal

(D) Gopal Krishna Gokhale

47. Who accused Indian National Congress of practising 'politics' of prayer, petition and protest ?

(A) Lala Hardayal

(B) Bal Gangadhar Tilak

(C) Subhash Chandra Bose

(D) Sardar Bhagat Singh

48. The person who returned his token of honour to Government of India on May 30, 1919 was—

(A) Jamnalal Bajaj

(B) Tej Bahadur Sapru

(C) Mahatma Gandhi

(D) Rabindra Nath Tagore

49. Name of the leader who was regarded by Mahatma Gandhi as his political guru—

(A) Gopal Krishna Gokhale

(B) Rabindranath Tagore

(C) Lord Irwin

(D) Leo Tolstoy

50. The Simon Commision visited India after the—

(A) Civil Disobedience Movement

(B) Non-cooperation Movement

(C) Swadeshi Movement

(D) Quit India Movement

51. Vande Mataram was taken from—

(A) Rajtarangani (B) Anand Math

(C) Akbarnama (D) Akbar Kosha

52. "Repression is repression; if it is legal, (it must be resisted peacefully; but if it is illegal, it must be illegally met)". Who made this remark ?

(A) Jawaharlal Nehru

(B) Gandhiji

(C) Dadabhai Naoroji

(D) Bal Gangadhar Tilak

53. The first Governor General of The East India Company in India was—

(A) Robert Clive

(B) Sir John Shore

(C) Warren Hastings

(D) Marquis of Hastings

54. Who among the following attended all the three Round Table Conferences ?

(A) Jawaharlal Nehru

(B) Dr. B.R. Ambedkar

(C) Vallabh Bhai Patel

(D) Dr. Rajendra Prasad

55. The Indian National Army (I.N.A.) came into existence in—

(A) Burma (B) Japan

(C) Malaysia (D) Singapore

Scanned by CamScanner

56. In which of the following sessions of the Indian National Congress was the demand for 'Swarajya' made ?
(A) Lahore, 1929 (B) Lucknow, 1899
(C) Calcutta, 1928 (D) Karachi, 1931

57. Which one of the following authors put forth the theory of the Drain of India's resources to England ?
(A) Raja Rammohan Roy
(B) Bankim Chandra Chatterjee
(C) G. G. Agarkar
(D) Dadabhai Naoroji

58. During the Indian freedom struggle, an unarmed large crowd gathered in the Jallianwala Bagh at Amritsar on 13th April 1919 to protest against the arrest of—
(A) Dr. Saifuddin Kitchlu and Dr. Satyapal
(B) Swami Shraddhanand and Mazharul Haq
(C) Madan Mohan Malaviya and Mohammed Ali Jinnah
(D) Mahatma Gandhi and Abul Kalam Azad

59. Under the permanent settlement 1793, the Zamindars were required to issue pattas to the farmers which were not issued by many of the Zamindars. The reason was—
(A) The Zamindars were trusted by the farmers
(B) There was no official check upon the Zamindars.
(C) It was the responsibility of the British Government
(D) The farmers were not interested in getting pattas.

60. Who among the following leaders proposed to adopt complete Independence as the goal of the Congress in the Ahmedabad session of 1920 ?
(A) Abul Kalam Azad
(B) Hasrat Mohani
(C) Jawahar Lal Nehru
(D) Mohandas Karamchand Gandhi

61. Who among the following organized the famous Chittagong Armoury raid ?
(A) Laxmi Sehgal
(B) Surya Sen
(C) Batukeshwar Dutta
(D) J.M. Sengupta

62. A London branch of the All India Muslim League was established in 1908 under the presidency of—
(A) Aga Khan
(B) Ameer Ali
(C) Liaquat Ali Khan
(D) M.A. Jinnah

63. Who among the following was the President of The All India State 'Peoples' Conference in 1937 ?
(A) Jaya Prakash Narayan
(B) Jawahar Lal Nehru
(C) Seikh Abdullah
(D) Sardar Vallabh Bhai Patel

64. All India Muslim League was formed in—
(A) Lahor (B) Aligarh
(C) Lucknow (D) Dhaka

65. Which one of the following Viceroys of India utilised for the first time local self government as the basis of election?
(A) Lord Bentinck (B) Lord Cornwallis
(C) Lord Ripon (D) Lord Lansdowne

66. The call 'Dilli Challo' was given by—
(A) Lala Lajpat Rai
(B) Dr. Rajendra Prasad
(C) Subhash Chandra Bose
(D) Mahatma Gandhi

67. Who among the following was instrumental in the abolition of sati in 1829 ?
(A) Lord Hastings
(B) Lord Rippon
(C) Lord Bentinck
(D) Lord Irwin

68. In the colonial period of India, which one of the following was a consequence of the other three ?
(A) Reform movement of the 19th century
(B) Rise of the middle classes
(C) Spread of education
(D) Missionary activity

69. Which one of the following was the aim of the Nehru Report of 1928 ?
(A) To draft a Constitution for India
(B) To prepare a plan to achieve freedom for India through revolution

Scanned by CamScanner

(C) To bring a rapprochement between the Indian National Congress and the Muslim League

(D) To determine the responsibility of Brig-Dyer for the Jallianwala Bagh tragedy

70. Three amongst the following were charged with waging war against the King Emperor in November 1945. Who was not ?

(A) Col. Shah Nawaz Khan

(B) Capt. Sehgal

(C) Lt. G.S. Dhillon

(D) Damodar Chapekar

Answers

1. (B)	2. (C)	3. (D)	4. (B)	5. (C)
6. (D)	7. (C)	8. (C)	9. (D)	10. (B)
11. (A)	12. (D)	13. (B)	14. (C)	15. (A)
16. (C)	17. (D)	18. (A)	19. (C)	20. (A)
21. (B)	22. (A)	23. (D)	24. (B)	25. (C)
26. (A)	27. (C)	28. (A)	29. (A)	30. (C)
31. (A)	32. (C)	33. (B)	34. (B)	35. (D)
36. (B)	37. (A)	38. (C)	39. (B)	40. (A)
41. (B)	42. (C)	43. (B)	44. (A)	45. (D)
46. (D)	47. (B)	48. (D)	49. (A)	50. (B)
51. (B)	52. (D)	53. (C)	54. (B)	55. (D)
56. (A)	57. (D)	58. (A)	59. (B)	60. (D)
61. (B)	62. (B)	63. (B)	64. (D)	65. (C)
66. (C)	67. (C)	68. (A)	69. (A)	70. (D)

Hints

15. Warren Hastings.

37. Wellesley was the first to impose censorship of press in 1799.

41. The first session of All India Trade Union Congress was held at Bombay, Lala Lajpat Rai was the President of this session.

48. On May 10, 1919 Rabindra Nath Tagore returned his token of Honour to the Government of India in protest against Jallianwalah Bagh massacre.

64. In 1906.

65. In 1881-82.

Scanned by CamScanner

Economics

1. Countries known as 'The Four Pacific Tiger Economies' are—
   (A) Japan, Indonesia, Singapore and Hong Kong
   (B) China, Japan, Hongkong and Singapore
   (C) Singapore, Taiwan, Hong Kong and South Korea
   (D) Indonesia, Philippines, North Korea and Japan

2. According to World Bank Report, among largest economies of the world the ranking (based on Purchasing Power Parity by GDP) of India stands at—
   (A) Second (B) Third
   (C) Fourth (D) Fifth

3. Net growth-rate of population is determined by—
   (A) Gross reproduction rate
   (B) The birth-rate and the death-rate
   (C) The pressure of population
   (D) The birth-rate in a country

4. The Human Development Index (HDI) is based on—
   (A) Life Expectancy at birth
   (B) GDP Per Capita (PPP US $)
   (C) Mean Years of Schooling
   (D) All of the above

5. Foreign aid will—
   (A) Raise the level of investment
   (B) Be used to enlarge technical resources
   (C) Be used for building up industries
   (D) All of the above

6. Operating surplus arises in the—
   (A) Government sector
   (B) Production for self-consumption
   (C) Subsistence farming
   (D) Enterprise sector

7. The most important of the non-tariff trade barriers are—
   (A) Quotas
   (B) Health regulations
   (C) Pollution standards
   (D) Labelling and packaging regulations

8. Investment is equal to—
   (A) Gross total of all types of physical capital assets
   (B) Gross total of all capital assets minus wear and tear
   (C) Stock of plants, machines and equipments
   (D) None of the above

9. From which of the following taxes, the Central Government gets the maximum revenue ?
   (A) Corporate Tax (B) Income Tax
   (C) Excise Duties (D) Custom Duties

10. What is NABARD's primary role ?
    (A) To provide term loans to state Co-operative Banks
    (B) To assist State Governments for share capital contribution
    (C) To act as refinance institution
    (D) All of the above

11. The sale proceeds of the Government Bonds come under the budget head of—
    (A) Revenue Receipts
    (B) Current Expenditure
    (C) Capital Outlay
    (D) Capital Receipts

12. The term utility means—
    (A) Usefulness of a commodity
    (B) The satisfaction which a commodity yields
    (C) The service which a commodity is capable of rendering
    (D) None of the above

Scanned by CamScanner

13. Under flexible exchange rate system, the exchange rate is determined by—
(A) The Central Bank of the Country
(B) The forces of demand and supply in the foreign exchange market
(C) The price of gold
(D) The purchasing power of currencies

14. The size of the market for a product refers to—
(A) The number of people in the given area
(B) The geographical area served by the producers
(C) The volume of potential sales of the product
(D) The number of potential buyers of the product

15. According to the figures released by the Reserve Bank of India, on October 7, 2016 India's foreign exchange reserves were amounted to—
(A) $ 316·362 billion
(B) $ 303·482 billion
(C) $ 367·64 billion
(D) $ 396·888 billion

16. If the percentage change in demand for a commodity is at a faster rate than percentage change in the price of the commodity then the demand is—
(A) Perfectly inelastic
(B) Elastic
(C) Perfectly elastic
(D) Inelastic

17. According to new 'Census 2011' data released by Government of India if all communities are taken together the percentage of country's population below 20 years is—
(A) 63% (B) 27%
(C) 28% (D) 41%

18. The demand for money, according to Keynes, is for—
(A) Speculative motive
(B) Transaction motive
(C) Precautionary motive
(D) All the above motives

19. The Reserve Bank of India issues currency notes under the—
(A) Fixed fiduciary system
(B) Maximum fiduciary system
(C) Fixed minimum reserve system
(D) Proportional reserve system

20. The fastest growing state in terms of Gross State Domestic Products (GSDP) in 2014-15—
(A) Uttar Pradesh (B) Bihar
(C) Tamil Nadu (D) Madhya Pradesh

21. At present (October 7, 2016), what is the Cash Reserve Ratio (CRR) ?
(A) 4·00% (B) 5·50%
(C) 4·50% (D) 3·50%

22. The 'Smart City Mission' is being implemented by—
(A) Ministry of HRD
(B) Ministry of Urban Development
(C) Ministry of Housing and Urban Poverty Alleviation
(D) Ministry of Statistic and Programmes implementation

23. In which crop, the premium percentage to be paid by farmers in Pradhan Mantri Fasal Bima Yojana is the highest ?
(A) Rabi Crops
(B) Kharif Crops
(C) Horticulture
(D) All above have equal premium percentage

24. When was RBI established ?
(A) 1949 (B) 1955
(C) 1934 (D) 1935

25. The organisation which looks after the credit needs of agriculture and rural development is—
(A) FCI (B) NABARD
(C) IDBI (D) ICAR

26. Which of the following is a rural electrification scheme of government of India ?
(A) PMJJBY (B) DDUGJY
(C) DDUGKY (D) HRIDAY

27. Minimum Support Prices for Agricultural crops are recommended by—
(A) Ministry of Agriculture
(B) CACP
(C) ICAR
(D) State Govts.

Scanned by CamScanner

28. The total sum of the goods and services produced within a country in a year minus depreciation is called the—
(A) Gross National Product
(B) Net National Product
(C) Gross Domestic Product
(D) Net Domestic Product

29. Who is the pioneer of Green Revolution in India ?
(A) M. S. Swaminathan
(B) Garry Backey
(C) Neither of the above
(D) Norman E. Borlaug

30. Start up India Mission launched on—
(A) 17 January, 2016
(B) 26 January, 2016
(C) 15 August, 2015
(D) 25 December, 2015

31. 'Dumping' in the context of international trade refers to—
(A) Exporting goods at prices below the actual cost of production
(B) Exporting goods without paying the appropriate taxes in the receiving country
(C) Exporting goods of inferior quality
(D) Exporting goods only to re-import them at cheaper rates

32. The degree of inflation is measured with the help of—
(A) Market information
(B) Income-index number
(C) General price index number
(D) Prices of goods and services

33. The monetary and credit policy of RBI is now known as—
(A) The Currency and Credit Statement
(B) RBI's Annual Policy Statement
(C) Monetary and Credit Statement
(D) None of the above

34. Which one of the following agencies has the power to declare any industrial unit as a potentially sick unit ?
(A) BIFR (B) MRTPC
(C) FICCI (D) IRBI

35. As on October 7, 2016, the repo rate stands at—
(A) 6·25% (B) 7·00%
(C) 8·25% (D) 6·00%

36. "Funds of Funds" is a part—
(A) MUDRA BANK
(B) Start up India Scheme
(C) Smart City Mission
(D) Skill Development

37. The Union government has decided to withdraw the benefit of subsidised LPG to the customers having income above—
(A) ₹ 7·5 lakh (B) ₹ 10·0 lakh
(C) ₹ 12·5 lakh (D) ₹ 15·0 lakh

38. 'Open Market Operations' is a part of—
(A) Income Policy
(B) Fiscal Policy
(C) Labour Policy
(D) Credit Policy

39. According to Data released in April 2016 by Bombay Stock Exchange the unemployment rate in urban areas in India was of the order of—
(A) 12·62%
(B) 11·15%
(C) 12·15%
(D) 9·62%

40. At present (October 7, 2016), what is the Reverse Repo Rate ?
(A) 5·75% (B) 5·50%
(C) 5·75% (D) 7·00%

41. Which of the following is regarded as the 'Lender of the Last Resort' ?
(A) RBI (B) GoI
(C) NABARD (D) SBI

42. What provision has been made for defence in the Central Budget for 2016-17 ?
(A) 15% (B) 12%
(C) 10% (D) 9·7%

43. India ranks ..... on Forbes' Best countries list for business in 2015.
(A) 95th (B) 96th
(C) 97th (D) 98th

Scanned by CamScanner

44. Which of the following is not a part of Service tax ?
(A) Event Management
(B) Credit card
(C) Telephone
(D) None of the above

45. 'Namami Gange' is associated with—
(A) National Mission for Clean Ganga
(B) Ganga Action Plan
(C) Smart City Mission
(D) AMRUT

46. In which year MUDRA Micro Units Development & Refinance Agency was established ?
(A) 1991 (B) 2001
(C) 2012 (D) 2015

47. India Inclusive Innovation Fund (IIIF) will be created by—
(A) NABARD
(B) SIDBI
(C) Ministry of MSME
(D) IDBI

48. Which states have not yet established Regional Rural Banks ?
(A) Sikkim and Goa
(B) Bihar and Rajasthan
(C) Sikkim and Arunachal Pradesh
(D) Nagaland and Manipur

49. The term 'Forensic Audit' is—
(A) An examination and evaluation of a firms or individuals financial information for use as evidence in a court
(B) Can be conducted in order to prosecute a party for fraud, embezzlement or other financial claims
(C) Against willful defaulters of loans from public sector Banks
(D) All the above

50. Sustainable agriculture means—
(A) Self-sufficiency
(B) To be able to export and import under WTO norms
(C) To utilise land so that its quality remains intact
(D) To utilise waste land for agricultural purposes

51. The Jawahar Lal Nehru National Urban Renewal Mission (JNNURM) has now been subsumed in—
(A) HRIDAY
(B) PRASAD
(C) AMRUT
(D) Smart City Mission

52. How many Public Sector Companies have been included in CPSEETF ?
(A) 10 (B) 7
(C) 12 (D) 8

53. Zero Landless Project has been launched in—
(A) Kerala
(B) Madhya Pradesh
(C) Gujarat
(D) Karnataka

54. National Urban Livelihood Mission (NULM) is now renamed as—
(A) Deen Dayal Antyoday Yojana-National Urban Livelihood Mission
(B) Shahri Awas Evam Vikas Yojana
(C) NULM-Smart City Yojana
(D) None of the above

55. Structural unemployment arises due to—
(A) Deflationary conditions
(B) Heavy industry bias
(C) Shortage of raw materials
(D) Inadequate productive capacity

56. As per the World Bank, the per capita Gross National Income (Current International rate) of India in 2015 is—
(A) $ 1560 (B) $ 6020
(C) $ 1035 (D) $ 2350

57. What is the estimated replacement reproduction level per married couple to obtain zero population growth?
(A) 2·0 (B) 2·1
(C) 1·6 (D) 3·0

58. What is the quantum of India's foreign debt as on end of March 2016 ?
(A) US $ 485·6 bn (B) US $ 350·2 bn
(C) US $ 370·6 bn (D) US $ 323·9 bn

Scanned by CamScanner

59. What average rate of annual growth has been originally targeted for the 12th Five Year Plan (2012–17) ?

(A) 10% (B) 8%

(C) 9% (D) 8·5%

60. The 14th Finance Commission headed by Y.V. Reddy submitted its report to the President of India. Its recommendations are operative for the period—

(A) From April 1, 2009 to March 31, 2014

(B) From Jan. 1, 2007 to December 2013

(C) From April 1, 2007 to March 31, 2016

(D) From April 1, 2015 to March 31, 2020

61. When was Agricultural Price Commission (now known as Commission for Agricultural Costs and Prices—CACP) established ?

(A) 1965 (B) 1969

(C) 1974 (D) 1985

62. National Insurance Company Ltd. is a subsidiary of —

(A) Kotak Mahindra

(B) LIC of India

(C) Telco

(D) General Insurance Corporation of India

63. After 1991, the Central Government implemented various far-reaching reforms in the area of taxation. This was based on the recommendations of the—

(A) Wanchoo Committee

(B) Rajah Chelliah Committee

(C) Raj Committee

(D) Narasimham Committee

64. A steady increase in the general level of prices as a result of excessive increase in aggregate demand as compared to aggregate supply is termed as—

(A) Demand Pull inflation

(B) Cost Push inflation

(C) Stagflation

(D) Structural inflation

65. After the initiation of economic reforms in 1991-92, the amount of—

(A) Direct taxes increased and that of indirect taxes decreased in gross tax revenue

(B) Both direct and indirect taxes increased in gross tax revenue

(C) Both direct and indirect taxes decreased in gross tax revenue

(D) Direct taxes decreased and that of indirect taxes increased in gross tax revenue

66. Which of the following is not a scheme of urban development ?

(A) PRASAD (B) HriDAY

(C) AMRUT (D) Start up India

67. Which of the following is not a part of World Bank Group ?

(A) ADB (B) IBRD

(C) IFC (D) IDA

68. Dr. Amartya Sen who won the 1998 Nobel Prize for Economics is strongly in favour of adopting the following approach for economic development—

(A) Monetary Economics

(B) Macro Economics

(C) Welfare Economics

(D) Free Market

69. How many cities have been selected in the first phase of Smart Cities Mission ?

(A) 20 (B) 21

(C) 22 (D) 23

70. According to Economic Survey 2015-16 in India, the percentage of earning population in the tax net is—

(A) 4·0% (B) 5·5%

(C) 7·5% (D) 8·5%

71. The objective of Indian Planning is—

(A) Increasing national income

(B) Reducing inequalities in income and wealth

(C) Elimination of poverty

(D) All of the above

72. The Gandhian economy was based on the principle of—

(A) State control (B) Competition

(C) Trusteeship (D) Rural co-operation

73. The major aim of devaluation is to—

(A) Encourage imports

(B) Encourage exports

(C) Encourage both exports and imports

(D) Discourage both exports and imports

Scanned by CamScanner

74. Which of the following constitutes the maximum share in power generation ?
(A) Hydro Power
(B) Thermal Power
(C) Atomic Power
(D) All the above here equal share

75. Which of the following committees examined and suggested Financial sector reforms ?
(A) Abid Hussain Committee
(B) Bhagwati Committee
(C) Chelliah Committee
(D) Narasimham Committee

76. In newly introduced Pradhan Mantri Fasal Bima Yojana (introduced since Kharif crop 2016), farmers has to pay ..... per cent of insured premium for Kharif crops.
(A) 1·0% (B) 2·0%
(C) 3·0% (D) 5·0%

77. National Income in India is estimated by—
(A) CSO
(B) Finance Commission
(C) Planning Commission
(D) Indian Statistical Institute

78. Which of the following is a wrong match ?
(A) Santro–Korea (B) Matiz–Taiwan
(C) Zen–Japan (D) Maruti–India

79. Credit control operation in India is performed by—
(A) Rural Banks
(B) Commercial Banks
(C) Reserve Bank of India
(D) State Bank of India

80. Which of the following is a direct tax ?
(A) Entertainment tax (B) Estate duty
(C) Excise duty (D) Sales tax

81. A tax that takes away a higher proportion of one's income as the income rises is termed as—
(A) Progressive tax (B) Proportional tax
(C) Regressive tax (D) Indirect tax

82. Of which of the following items, is there no significant export from India ?
(A) Readymade garments
(B) Wool
(C) Footwear
(D) Silk Apparel

83. Who is Chairman of Tax Administration Reform Commission, constituted by the Union Government ?
(A) Urjit Patel (B) Y. B. Reddy
(C) C. Rangrajan (D) Parth Sarathy Shom

84. Which of the following state has been announced as 'a state of total organic' farming ?
(A) Sikkim (B) Karnataka
(C) Kerala (D) Punjab

85. Which of the following entrepreneur has been awarded EY Entrepreneur of the year 2016 award in October 2016 ?
(A) Ambarish Mitra
(B) Sidharth Birla
(C) Rajan Bharti
(D) Gopal Krishnan

86. Rurban Mission has been named after—
(A) Deendayal Upadhyay
(B) Nanaji Deshmukh
(C) Shyama Prasad Mukherji
(D) Atal Bihari Vajpayee

Answers

1. (C)	2. (B)	3. (B)	4. (D)	5. (D)
6. (D)	7. (A)	8. (B)	9. (A)	10. (A)
11. (D)	12. (B)	13. (B)	14. (D)	15. (C)
16. (B)	17. (D)	18. (D)	19. (C)	20. (B)
21. (A)	22. (B)	23. (C)	24. (D)	25. (B)
26. (B)	27. (B)	28. (D)	29. (D)	30. (A)
31. (A)	32. (C)	33. (B)	34. (A)	35. (A)
36. (B)	37. (B)	38. (D)	39. (D)	40. (A)
41. (A)	42. (C)	43. (C)	44. (D)	45. (A)
46. (D)	47. (C)	48. (A)	49. (D)	50. (C)
51. (C)	52. (A)	53. (A)	54. (A)	55. (B)
56. (B)	57. (B)	58. (A)	59. (B)	60. (D)
61. (A)	62. (D)	63. (B)	64. (A)	65. (B)
66. (D)	67. (A)	68. (C)	69. (A)	70. (B)
71. (D)	72. (C)	73. (B)	74. (B)	75. (D)
76. (B)	77. (A)	78. (B)	79. (C)	80. (B)
81. (A)	82. (B)	83. (D)	84. (A)	85. (A)
86. (C)				

Hint

34. Board for Industrial and Financial Reconstruction.

Scanned by CamScanner

Geography of India and Ecology

1. The correct chronological order in terms of geological sequence in which the given parts of India were formed is—
   (A) Himalayas, Peninsular India, Indo-Gangetic plain, Thar desert
   (B) Peninsular India, Himalayas, Indo-Gangetic plain, Thar desert
   (C) Peninsular India, Himalayas, Thar desert, Indo-Gangetic plain
   (D) Himalayas, Indo-Gangetic plain, Thar desert, Peninsular India
2. Which one of the following types of erosion, is responsible for the formation of Chambal Ravines ?
   (A) Splash (B) Sheet
   (C) Rill (D) Gully
3. The main advantage of crop rotation is—
   (A) Less need for irrigation
   (B) Eradication of weeds
   (C) Preservation of soil fertility
   (D) Facility of growing more than one crop in the same piece of land
4. What was the initially estimated sum required for the completion of Golden Quadrilateral Highway Project undertaken by the Government of India ?
   (A) ₹ 60,000 crore (B) ₹ 70,000 crore
   (C) ₹ 35,000 crore (D) ₹ 54,000 crore
5. The variety of coffee, largely grown in India, is—
   (A) Old chicks (B) Coorgs
   (C) Arabica (D) Kents
6. The largest estuary in India is at the mouth of river—
   (A) Hooghly (B) Bhagirathi
   (C) Godavari (D) Krishna
7. The period by which the entire country India gets the S.W. monsoonal rain—
   (A) 1st - 10th June (B) 10th - 20th June
   (C) 20th - 30th June (D) 1st - 15th July
8. The most extensive soil cover of India comprise—
   (A) Laterite soils (B) Black soils
   (C) Alluvial soils (D) Marshy soils
9. Evergreen rain forests are mainly found in regions having well distributed annual rainfall—
   (A) Below 50 cm
   (B) 50 - 100 cm
   (C) 100 - 200 cm
   (D) More than 200 cm
10. Which one of the following organisations is responsible for publishing topographical sheets ?
    (A) Geological Survey of India (G. S. I.)
    (B) National Atlas & Thematic Mapping Organisation (N. A. T. M. O.)
    (C) Indian Meteorological Department (I. M. D.)
    (D) Survey of India (S. O. I.)
11. Nepanagar in Madhya Pradesh is famous for—
    (A) Sugar mill
    (B) Newsprint paper factory
    (C) Steel plant
    (D) Heavy engineering plant
12. Which one of the following states produces about 50 per cent of the total silk textiles in India ?
    (A) Karnataka
    (B) West Bengal
    (C) Jammu and Kashmir
    (D) Assam
13. The Periyar Project is located in—
    (A) Arunachal Pradesh
    (B) Karnataka
    (C) Tamil Nadu
    (D) Kerala
14. The package technology which brought about green revolution comprised mainly of—
    (A) Man power, mechanical cultivators and electricity
    (B) Changes in crop pattern, industrialisation and chemical fertilizers
    (C) Irrigation, bio-chemical fertilizers and high yield varieties of seeds
    (D) Electricity, irrigation and introduction of dry farming

Scanned by CamScanner

15. The dotted area in the given map of India has the mean monthly temperature of January between—

(A) 10° to 15° C (B) 15° to 20° C
(C) 20° to 25° C (D) 25° to 30° C

16. The new alluvial deposits found in the gangetic plain are known as—
(A) Bhabar (B) Bhangar
(C) Khadar (D) Tarai

17. Match List-I (Cities) with List-II (Institutes) and select the correct answer using the codes given below the lists :

List-I (Cities)
1. Chennai 2. Goa
3. Hyderabad 4. Visakhapatnam

List-II (Institutes)
a. National Institute of Ocean Technology
b. National Centre for Antarctica and Ocean Research
c. Indian National Centre for Indian Ocean Information Services

Codes :

	(a)	(b)	(c)
(A)	1	2	3
(B)	1	2	4
(C)	2	1	3
(D)	2	3	4

18. Of the following pairs of Institutions of Oceanic Research and the places where they are situated which one is wrong ?
(A) National Institute of Ocean Technology — Chennai
(B) National Centre of Antarctic and Ocean Research — Goa
(C) Indian National Centre for Ocean and Information Services — Mumbai
(D) Centre for Marine Living Resources and Ecology — Kochi

19. The maximum area under crops in India is used for the cultivation of—
(A) Wheat (B) Rice
(C) Sugarcane (D) Cotton

20. Shyok is a tributary of—
(A) Brahamaputra (B) Indus
(C) Chenab (D) Sutlej

21. Uranium corporation of India Limited is situated in—
(A) Maharashtra (B) West Bengal
(C) Jharkhand (D) Rajasthan

22. A project has been taken up by BHEL corporate R & D, Hyderabad for development and field testing of 50 kW phosphoric acid fuel cell (PAFC) power plant in a chloralkali industry in Kurnool where the fuel available is—
(A) Methane (B) Ethylene
(C) Hydrogen (D) Heavy water

23. In 1498, Vasco-de-Gama reached—
(A) Trivandrum (B) Cochin
(C) Calicut (D) Ratnagiri

24. Which one of the following places ranks second among the coldest inhabited places in the world?
(A) Dras (Jammu and Kashmir)
(B) Kullu (Himachal Pradesh)
(C) Manali (Himachal Pradesh)
(D) Itanagar (Arunachal Pradesh)

25. Which of the following Indian states is broadly as large as the European nation Austria ?
(A) Kerala (B) West Bengal
(C) Odisha (D) Karnataka

26. Which of the following districts is on the inernational border of India ?
(A) Sirsa (B) Anantnag
(C) Karimganj (D) Purulia

27. The largest irrigation canal in India is called the—
(A) Yamuna Canal
(B) Sirhand Canal
(C) Indira Gandhi Canal
(D) Upper Bari Doab Canal

28. Which one of the following states had a higher literarcy rate than the rest, according to the 2011 census ?
(A) Mizoram (B) Goa
(C) Bihar (D) Jammu & Kashmir

Scanned by CamScanner

29. Which of the following states in India has the highest net sown area ?
(A) Punjab (B) Odisha
(C) Andhra Pradesh (D) Mizoram

30. The axis of rotation of the earth is tilted by 23.5° to the plane of revolution around the Sun. The latitude of Mumbai is less than 23.5° whereas the latitude of Delhi is more than 23.5°.
Which one of the following statements in this regard is correct ?
(A) The Sun can come overhead at both these places
(B) The Sun will never come overhead at either of these places
(C) At Mumbai the sun can come overhead; but it will never do so at Delhi
(D) At Delhi, the sun can come overhead but it will never do so at Mumbai

31. What is the length of the LPG pipeline dedicated to the Nation joining Jam-Nagar to Loni ?
(A) 1100 km (B) 1200 km
(C) 1250 km (D) 1350 km

32. The Thein Dam Project is situated at—
(A) River Sutlej in Punjab
(B) River Jhelum in Pakistan
(C) River Ravi in Punjab
(D) River Vyas in Punjab

33. Kohima is the capital of—
(A) Manipur (B) Mizoram
(C) Nagaland (D) Meghalaya

34. Which of the following does not belong to the group ?
(A) Itanagar (B) Dispur
(C) Chandigarh (D) Ranchi

35.

Which one of the following climatic regions does the shaded portion in the given map represent ?
(A) Tropical dry (B) Humid subtropical
(C) Semi arid (D) Arid

36. The Information Technology Capital of India is—
(A) Hyderabad (B) Bengaluru
(C) Mumbai (D) Chennai

37.

Which one of the following commercial crops is grown in the shaded areas of the above map ?
(A) Coffee (B) Jute
(C) Tea (D) Cotton

38. Kaziranga is known for—
(A) Project Tiger
(B) Two horned Rhino
(C) One horned Rhino
(D) Operation Flood

39. To which country does India export the largest quantity of iron ore ?
(A) Japan (B) U.S.A.
(C) Egypt (D) Germany

40. During Indian Decennial census operations—
(A) Only Indians on Indian soil are counted
(B) Both Indians and foreigners on Indian soil are counted
(C) Both Indians by birth and by domicile only are counted
(D) None of these

41. The logo of census 2011 was—
(A) Population Enumeration
(B) Census of India
(C) Be Indian
(D) Jana Gana Mana

42. As per the last (2011) Indian Decennial Census, ... is the most literate state in the country.
(A) Delhi (B) Maharashtra
(C) Kerala (D) Tamil Nadu

43. Palk Strait intervenes between India and—
(A) Pakistan (B) Myanmar
(C) Sri Lanka (D) Bangladesh

Scanned by CamScanner

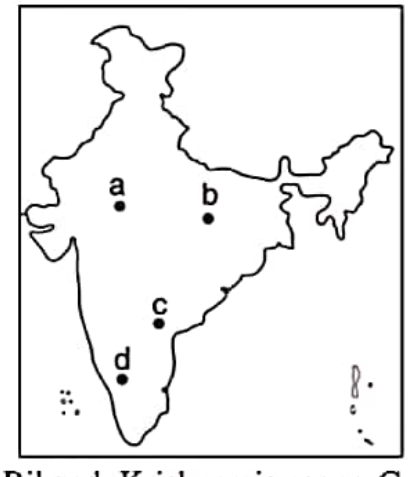
44. The Indian Railways consist of an extensive network (as on 31 March, 2015) of about—
(A) 40,000 km (B) 50,000 km
(C) 66,030 km (D) 70,000 km

45. Coastal Andhra Pradesh and Odisha often face natural disasters due to—
(A) Earthquakes (B) Landslides
(C) Tornadoes (D) Cyclones

46. River Damodar is called 'Sorrow of Bengal' because it—
(A) Causes maximum soil erosion
(B) Gets flooded often causing havoc
(C) Forms number of dangerous waterfalls
(D) Is not a perennial river

47. Which of the following forms part of environment movement in India ?
(A) Chipko Movement
(B) Silent Valley Movement
(C) Bishnoi Movement
(D) All of the above

48. The places marked a, b, c and d in the given rough outline map are respectively—



(A) Rihand, Krishnaraja sagar, Gandhi sagar and Nagrjuna sagar
(B) Gandhi sagar, Rihand, Nagarjuna sagar and Krishnaraja sagar
(C) Rihand, Gandhi sagar, Krishnaraja sagar and Nagarjuna sagar
(D) Gandhi sagar, Krishnaraja sagar, Nagarjuna sagar and Rihand

49. Which of the following Indian states is broadly as large as the European nation Poland?
(A) Bihar (B) Odisha
(C) Maharashtra (D) Madhya Pradesh

50. Laterite soils are predominant in—
(A) Malbar Coastal Region
(B) Coromandal Coastal Region
(C) Bundelkhand
(D) Baghelkhand

51. The atomic power plant which became active recently is located at—
(A) Kalpakkam (B) Narora
(C) Tarapore (D) Kaiga

52. Which of the following statements is not true about India ?
(A) India has 2% of the total geographical area
(B) Occupies 0.1% of global forest cover and 6.5% of total grazing area
(C) Receives 10% of total rainfall
(D) Holds 26% of global human population and 3% of global farm animal population

53. Foodgrain production during 2015-16 was —
(A) 252·23 mt (B) 220·61 mt
(C) 210·6 mt (D) 213·14 mt

54. Where has India installed a telescope which provides the highest window to the universe ?
(A) Dalhousie (B) Darjeeling
(C) Gangtok (D) Hosakote

55. Which one of the following crops is the greatest beneficiary of the Green Revolution in both production and productivity?
(A) Jawar (B) Maize
(C) Rice (D) Wheat

56. Which one of the following is an important tribe of the Dhauladhar Range?
(A) Abor (B) Gaddi
(C) Lepcha (D) Tharu

57. Which of the following states is the largest producer of mica in India ?
(A) Andhra Pradesh (B) Karnataka
(C) Rajasthan (D) Madhya Pradesh

58. The industry for which Nepa Nagar is known is—
(A) Cement (B) Fertilizer
(C) Handloom (D) Newsprint paper

59. Which one of the following cities is not connected by National Highway No. 3?
(A) Agra (B) Bhopal
(C) Dhule (D) Gwalior

60. Which one of the following cities does not have the special economic zone ?
(A) Chennai (B) Kandla
(C) Kochi (D) Surat

Scanned by CamScanner

61. India leads the world in the export of—
(A) Coffee (B) Cotton
(C) Manganese (D) Mica

62. How many major Ports will be therein India as declared August 2013 ?
(A) 10 (B) 11
(C) 12 (D) 15

63. In India, Dhariwal and Ludhiana towns are famous for—
(A) Silk textiles (B) Woollen textiles
(C) Cotton textiles (D) Synthetic textiles

64. Of the following pairs of Institutes and the places of their location, which one is incorrect?
(A) Forest Research Institute—Dehradun
(B) Rain Forest Research Institute—Jorhat
(C) Tropical Forestry Research Institute—Bhopal
(D) Institute of Forestry Research & Human Resources Development—Chhindwara

65. Which one of the following Ports is located on the Eastern coast of India ?
(A) Kandla (B) Kochi
(C) Marmugao (D) Paradeep

66. Maithan in Jharkhand generates ..... power.
(A) Atomic (B) Solar
(C) Thermal (D) Hydel

67. Which one of the following pairs of cities has recently been connected by a six lane express way ?
(A) Ahmedabad and Vadodra
(B) Dhaka and Chittagong
(C) Islamabad and Lahore
(D) Mumbai and Pune

68. Which one of the following statements is not true for laterite soils ?
(A) These are the soils of the humid tropical regions
(B) These are highly leached soils
(C) These are low fertility soils
(D) These are rich in lime

69. Nanda Devi Peak is—
(A) A part of the Assam Himalayas
(B) A part of the Kumaou Himalayas
(C) A part of the Nepal Himalayas
(D) A part of the Punjab Himalayas

70. Which of the following became 17th Indian Railway Zone in 2010 ?
(A) Delhi Metro Rail
(B) Kolkata Metro Rail
(C) Hugali Metro Rail
(D) None of the above

Answers

1. (B)	2. (D)	3. (C)	4. (A)	5. (C)
6. (A)	7. (D)	8. (C)	9. (D)	10. (D)
11. (B)	12. (A)	13. (D)	14. (C)	15. (C)
16. (C)	17. (A)	18. (C)	19. (B)	20. (B)
21. (C)	22. (A)	23. (C)	24. (A)	25. (B)
26. (C)	27. (C)	28. (A)	29. (A)	30. (C)
31. (C)	32. (C)	33. (C)	34. (C)	35. (C)
36. (B)	37. (C)	38. (C)	39. (A)	40. (A)
41. (B)	42. (C)	43. (C)	44. (C)	45. (D)
46. (B)	47. (D)	48. (B)	49. (C)	50. (A)
51. (D)	52. (D)	53. (A)	54. (D)	55. (D)
56. (B)	57. (A)	58. (D)	59. (B)	60. (A)
61. (D)	62. (D)	63. (B)	64. (C)	65. (D)
66. (D)	67. (D)	68. (D)	69. (B)	70. (B)

Hints

18. Indian National Centre for Ocean and Information Services is situated at Hyderabad.

20. In Ladakh (J & K).

28. According to 2011 census (Final data) Mizoram has 91·3% Literacy while Goa, Jammu & Kashmir and Bihar have 88·7%, 67·2% and 61·8% respectively.

56. Dhauladhar range is situated in Himachal Pradesh. Gaddi is the main tribe of this range, Abor is the tribe of North-East state, Lepcha of West Bengal and Bihar and Tharu of Tarai region of Uttar Pradesh.

59. The cities which are connected by National Highway No. 3 are Agra, Gwalior, Shivapuri, Indore, Dhule, Nasik, Thane and Mumbai. Bhopal is connected by National Highway No. 12.

60. The cities which have the special economic zone are Kandla, Surat, Santacruz and Kochi.

64. Tropical Forestry Research Institute is situated at Jabalpur.

Scanned by CamScanner

World Geography

1. Arakan yoma is the extension of the Himalayas located in—
   (A) Baluchistan (B) Myanmar
   (C) Nepal (D) Kashmir
2. Sun belt of U.S.A. is important for which one of the following industries ?
   (A) Cotton textile
   (B) Petro chemical
   (C) Hi-tech electronics
   (D) Food processing
3. Coffee is a—
   (A) Sub-tropical shrub
   (B) Warm temperate shrub
   (C) Tropical shrub
   (D) Cool temperate shrub
4. The best variety of world's cotton is known as—
   (A) Sea Island (B) Upland American
   (C) Egyptian (D) Short staple Indian
5. Which planet orbits closest to the earth ?
   (A) Mars (B) Jupiter
   (C) Venus (D) Mercury
6. The largest flightless bird which can run at a great speed is—
   (A) Penguin (B) Kiwi
   (C) Ostrich (D) Emu
7. Which of the following rivers flows in Germany ?
   (A) Seine (B) Volga
   (C) Danube (D) Thames
8. The presence of a lion in the forest is essential in order to—
   (A) Keep the trees safe from falling
   (B) Add beauty in the forests
   (C) Save the pastures from being overgrazed
   (D) Keep other Carnivorous animals away
9. Most of the devastating earthquakes are usually caused by—
   (A) Eustatic movement
   (B) Isostatic adjustment
   (C) Collision of earth plates
   (D) Volcanic eruption
10. Which of the following has the highest wind velocity ?
    (A) Typhoon (B) Hurricane
    (C) Cyclone (D) Tornado
11. While Venus is seen only for one to two hours either after sunset or before sunrise, Jupiter is seen for the whole night whenever it is visible in the sky. The reason for this is that—
    (A) Venus is much smaller than Jupiter
    (B) Venus is much closer to the earth than Jupiter
    (C) The orbit of Venus is inside the earth's orbit whereas the orbit of Jupiter lies outside the orbit of the earth
    (D) Venus reflects lesser amount of sunlight than Jupiter
12. Which one of the following countries is not a part of the Horn of Africa ?
    (A) Somalia (B) Ethiopia
    (C) Eritrea (D) Rwanda
13. The planets on either side of the earth are—
    (A) Mars and Jupiter
    (B) Mercury and Venus
    (C) Venus and Saturn
    (D) Mars and Venus
14. Which one of the following is the largest lake in the world ?
    (A) Lake superior (B) Caspian Sea
    (C) Lake Baikal (D) Lake Victoria
15. Detroit (U.S.A.) is famous for which of the following industries ?
    (A) Iron and steel (B) Automobile
    (C) Petro chemicals (D) Cotton textiles

Scanned by CamScanner

16. Rainfall in the doldrums is of the nature of—
(A) Orographic precipitation
(B) Natural precipitation
(C) Frontal precipitation
(D) Convectional precipitation

17. A ship met with an accident at 30° E and 35° N. The ship was sailing in the—
(A) Baltic sea
(B) Black sea
(C) Mediterranean sea
(D) Red sea

18. Which one of the following is the characteristic vegetation of regions between the snow line and about 3000 metres mean sea level of the Himalayan region ?
(A) Thick forests of birch, fir, spruce and other trees
(B) Forests of oak, deodar, chestnut and maple trees
(C) A few dwarf shrubs
(D) Forests of khair, sandalwood, palas and other trees

19. In the context of exports, which one of the following pairs is not correctly matched ?
(A) Cape Town : Wool and Wine
(B) Adelaide : Wheat and Wool
(C) Perth : Rice and Corn
(D) San Francisco : Fruts and Wine

20. The largest postal network in the world is in—
(A) U.S.A. (B) China
(C) India (D) Brazil

21. 'Khamsin' is a hot and dry local wind experienced in—
(A) Iran (B) Egypt
(C) Nigeria (D) Saudi Arabia

22. If it is 6.00 A.M. at greenwich, then it will be 11.00 A.M. at—
(A) 90° E (B) 60° E
(C) 75° E (D) 15° W

23. Which one of the following is most prone to earthquakes ?
(A) Coastal plains
(B) Old Shields
(C) Plateaus
(D) Young folded mountains

24. The lowest fertility rate in the world is that of—
(A) China (B) Italy
(C) Sweden (D) U.S.A.

25. Of the following pairs of environmental conventions and the years in which they were held, which one is wrong ?
(A) Kyoto Conference—1997
(B) US Conference on Climatic Change—2007
(C) World Summit on Sustainable Development—2002
(D) Stockholm Convention—2003

26. Which one of the following longitudes along with the Prime Meridian forms a great circle on the globe ?
(A) 0° (B) 90° E
(C) 90° W (D) 180°

27. Which one of the following is the biggest shipping canal in the world ?
(A) Kiel Canal (B) Panama Canal
(C) Soo Canal (D) Suez Canal

28. Which country is known as Britain of the South?
(A) Malaysia (B) Fizi
(C) Australia (D) New Zealand

29. Which one of the following may have alien life because of a very conductive environment to life ?
(A) Jupiter
(B) Mars
(C) Europa—The Jupiter's Moon
(D) Moon—The Earth's Moon

30. The length of its day and tilt of its axis are almost identical to those of the earth. This is true of—
(A) Uranus (B) Neptune
(C) Saturn (D) Mars

31. The milky way is classified as—
(A) Spiral galaxy (B) Electrical galaxy
(C) Irregular galaxy (D) Round galaxy

32. The substances present at the centre of the sun are in—
(A) Solid, liquid and gaseous states
(B) Liquid state only
(C) Gaseous state only
(D) Both liquid and gaseous states

Scanned by CamScanner

33. Which one of the following is not a member of the Ganga-Mekong Swarnbhoomi Cooperation Project ?
(A) India (B) Bangladesh
(C) Laos (D) Vietnam

34. Which of the following absorbs part of the insolation and preserves earth's radiated heat ?
(A) Oxygen (B) Nitrogen
(C) Water Vapour (D) Carbon dioxide

35. The 'Bermuda Triangle' lies in—
(A) Western North Atlantic ocean
(B) Eastern South Atlantic ocean
(C) North Pacific ocean
(D) South Indian ocean

36. When it is noon at IST meridian, what would be the local time at 120° East longitude?
(A) 09.30 (B) 14.30
(C) 17.30 (D) 20.00

37. Which one of the following is correctly matched ?
(A) Eskimo : Canada (B) Oran : Japan
(C) Lapps : India (D) Gonds : Africa

38. The coniferous forests are not found in—
(A) Amazonia (B) Scandinavia
(C) Canada (D) Finland

39. Which one of the following is not correctly matched ?
(A) Fiji : Suva
(B) Finland : Oslo
(C) Guyana : George Town
(D) Lebanon : Beirut

40. Which animal is the symbol of the World Wildlife Fund ?
(A) Tiger (B) Giant Panda
(C) Hornbill (D) White Bear

41. Which one of the following is not a cold ocean current ?
(A) California (B) Oyashio
(C) Kuroshio (D) Canaries

42. The maternal mortality rates in Asia are the highest in—
(A) Bangladesh (B) India
(C) Indonesia (D) Nepal

43. The best inland waterways are found in—
(A) Africa (B) North America
(C) Europe (D) Australia

44. Tea is grown in—
(A) Hot, wet and hilly region
(B) Flat region
(C) Winter season
(D) Very cold region

45. In terms of longitude, the International Date Line generally follows—
(A) 90° E (B) 90° W
(C) 180° (E or W) (D) None of these

46. Which of the following instruments is used for recording 'Earthquake waves' ?
(A) Barograph (B) Hydrograph
(C) Pantograph (D) Seismograph

47. Which of the following countries is the chief exporter of copper ?
(A) Ghana (B) Morocco
(C) Zambia (D) South Africa

48. The shape of our milky way galaxy is—
(A) Circular (B) Spiral
(C) Elliptical (D) None of these

49. The innermost layer of the earth is known as—
(A) Lithosphere (B) Mesosphere
(C) Asthenosphere (D) Barysphere

50. A large number of species (Plants) are found within a small unit of area of—
(A) Mangrove coastal forests
(B) Coniferous temperate forests
(C) Deciduous monsoon forests
(D) Wet evergreen equatorial forests

51. Which of the following is known as the morning star ?
(A) Saturn (B) Jupiter
(C) Mars (D) Venus

52. The seasonal movement of men with its animals in search of pastures is known as—
(A) Pastoral farming
(B) Nomadic herding
(C) Trans humance
(D) Shifting cultivation

53. Number of persons expressed in terms of unit area of land is known as—
(A) Agricultural density
(B) Economic density
(C) Physiological density
(D) Arithmetical density

Scanned by CamScanner

54. Which one of the following statements is correct with reference to our solar system ?
(A) The earth is the densest of all the planets in our solar system
(B) The predominant element in the composition of the earth is silicon
(C) The sun contains 75 percent of the mass of the solar system
(D) The diameter of the sun is 190 times that of the earth

55. For short-term climatic predictions, which one of the following events, detected in the last decade, is associated with occasional weak monsoon rains in the Indian sub-continent ?
(A) El Nino and Southern Oscillations
(B) Movement of Jet streams
(C) La Nino
(D) Green house effect on global level

56. Cloudy nights are warmer compared to clear cloudless nights, because clouds—
(A) Prevent cold waves from the sky from descending on earth
(B) Reflect back the heat given off by earth
(C) Produce heat and radiate it towards earth
(D) Absorb heat from the atmosphere and send it towards earth

57. Which one of the following weather conditions is indicated by a sudden fall in barometer reading ?
(A) Stormy weather
(B) Calm weather
(C) Cold and dry weather
(D) Hot and sunny weather

58. Who amongst the following was the first to state that the earth was spherical ?
(A) Aristotle (B) Copernicus
(C) Ptolemy (D) Strabo

59. If stars are seen to rise perpendicular to the horizon by an observer, he is located on the—
(A) Equator (B) Tropic of cancer
(C) South pole (D) North pole

60. The high density of population in Nile Valley and Island of Java is primarily due to—
(A) Intensive agriculture
(B) Industrialization
(C) Urbanization
(D) Topographic constraints

61. Consider the following statements made about the sedimentary rocks :
1. Sedimentary rocks are formed at earth's surface by the hydrological system.
2. The formation of sedimentary rocks involves the weathering of pre-existing rocks.
3. Sedimentary rocks contain fossils.
4. Sedimentary rocks typically occur in layers.
Which of these statements are correct ?
(A) 1 and 2 (B) 1 and 4
(C) 2, 3 and 4 (D) 1, 2, 3 and 4

62. A class of animals known as marsupials is a characteristic feature of—
(A) Africa (B) Australia
(C) South America (D) South-East Asia

63. Identify the correct order of the processes of soil erosion from the following—
(A) Splash erosion, sheet erosion, rill erosion, gully erosion
(B) Sheet erosion, splash erosion, gully erosion, rill erosion
(C) Rill erosion, gully erosion, sheet erosion, splash erosion
(D) Gully erosion, rill erosion, sheet erosion, splash erosion

64. Which one of the following rivers falls in a land-locked sea ?
(A) St. Lawrence (B) Niger
(C) Volga (D) Danube

65. Which one of the following metals has the highest density ?
(A) Gold (B) Iron
(C) Platinum (D) Lead

66. The contact of two air masses differing sharply in humidity originates—
(A) Tropical cyclones
(B) Inter tropical convergence
(C) Temperate cyclones
(D) Tropospheric instability

67. The UN Census Bureau has projected world population in 2050 to be around—
(A) 8850 million (B) 9346 million
(C) 8246 million (D) 7590 million

68. Which one of the following is a fresh water fish ?
(A) Pomfret (B) Rohu
(C) Sardine (D) Salmon

Scanned by CamScanner

69. More than 90% of the rock forming minerals in the earth's crust consist of—
(A) Silicates
(B) Oxides
(C) Carbonates
(D) Sulphides and sulphates

70. Which of the following is the largest island ?
(A) Sumatra (B) Madagascar
(C) Honshu (D) Cuba

71. When the Sun is nearest to Earth, Earth is said to be in—
(A) Aphelion (B) Perihelion
(C) Apogee (D) Perigee

72. Where is the Doldrums Belt located ?
(A) Near the Equater
(B) Near the Poles
(C) Near the Tropic of Cancer
(D) Near the Tropic of Capricorn

73. The most important activity of the Tundra region is—
(A) Fish farming (B) Cattle rearing
(C) Hunting (D) Cropping

74. The capital of Nigeria is—
(A) Sanna (B) Abuja
(C) Vienna (D) Warsaw

75. Which is the poorest country among the following ?
(A) Sierra Leone (B) Uganda
(C) Bangladesh (D) Somalia

76. Which is the land of morning calm ?
(A) Finland (B) Korea
(C) Japan (D) Thailand

77. Which of the following countries occupies an important place in the world in the production of coffee ?
(A) Malaysia (B) Brazil
(C) Thailand (D) Vietnam

78. The correct sequence of the given planets in increasing order of their distance from the Sun is—
(A) Mercury, Venus, Mars, Saturn, Jupiter
(B) Venus, Mercury, Mars, Saturn, Jupiter
(C) Mercury, Venus, Mars, Jupiter, Saturn
(D) Venus, Mercury, Jupiter, Mars, Saturn

79. Water from an artesian well flows up automatically due to—
(A) Heavy rainfall in region
(B) Volcanic activity
(C) Hydrostatic pressure
(D) Geothermal energy

80. On which particular date, does the sun remain at its shortest distance from the earth ?
(A) 21st March (B) 22nd December
(C) 3rd January (D) 4th July

Answers

1. (B)	2. (D)	3. (C)	4. (B)	5. (C)
6. (B)	7. (C)	8. (C)	9. (C)	10. (D)
11. (B)	12. (D)	13. (D)	14. (B)	15. (B)
16. (D)	17. (C)	18. (A)	19. (C)	20. (C)
21. (B)	22. (C)	23. (D)	24. (C)	25. (D)
26. (D)	27. (D)	28. (D)	29. (B)	30. (D)
31. (A)	32. (C)	33. (B)	34. (D)	35. (A)
36. (B)	37. (A)	38. (A)	39. (B)	40. (B)
41. (C)	42. (A)	43. (C)	44. (A)	45. (C)
46. (D)	47. (C)	48. (B)	49. (D)	50. (D)
51. (D)	52. (C)	53. (D)	54. (A)	55. (A)
56. (B)	57. (A)	58. (C)	59. (A)	60. (A)
61. (D)	62. (B)	63. (A)	64. (C)	65. (A)
66. (B)	67. (B)	68. (B)	69. (A)	70. (B)
71. (B)	72. (A)	73. (C)	74. (B)	75. (D)
76. (B)	77. (B)	78. (C)	79. (C)	80. (C)

Hints

25. Stockholm Convention was held on May 17, 2004. More than 150 countries have signed it and about 60 have ratified it.

30. The angle of inclination and the length of the day of Mars is nearly the same as that of Earth. Mars appears as a reddish ball and hence, is also called the Red Planet.

31. Galaxies occur in three structural forms : spiral, Elliptical and irregular. Spiral galaxies have a central nucleus with great spiraling arms trailing around them, examples include our milky way and Andromeda galaxies. Elliptical galaxies are without spiraling arms and irregular ones have no clear shape.

32. The substances present at the centre of the sun are always in gaseous state only due to high temperature.

33. The member countries of the Ganga Mekong Swarnbhoomi Cooperation Project are India, Myanmar, Vietnam, Laos, Thailand and Cambodia.

39. The capital of Finland is Helsinki.

75. Sierra Leone ($ 140); Uganda ($ 310); Bangladesh ($ 350); Somalia ($ 124) on the basis of per capita income.

Scanned by CamScanner

Sports

1. Which country won the Thomas Cup 2016 ?
   (A) Spain (B) Australia
   (C) France (D) Denmark
2. 2018 FIFA World Cup Football will be held in—
   (A) Brazil (B) Russia
   (C) USA (D) France
3. Who is the present (December 2016) President of International Cricket Council ?
   (A) David Morgan (B) Percy Sonn
   (C) Sunil Gavaskar (D) Zaheer Abbas
4. Which team won the ICC World Twenty-20 Cricket Tournament played in March/April 2016 ?
   (A) India (B) West Indies
   (C) Australia (D) South Africa
5. Who is the new President of the BCCI ?
   (A) Anurag Thakur
   (B) Jagmohan Dalmia
   (C) Sharad Pawar
   (D) Suresh Kalmadi
6. Who holds the record of taking the maximum number of wickets in test cricket ?
   (A) Anil Kumble (India)
   (B) Muthia Murlitharan (Sri Lanka)
   (C) Courtney Walsh (West Indies)
   (D) Irfan Pathan (India)
7. Who won the Ranji Cricket Trophy in 2016 ?
   (A) Uttar Pradesh
   (B) Karnataka
   (C) Andhra Pradesh
   (D) Mumbai
8. Who among the following has won the World Chess Championship for the year 2015 ?
   (A) Sergey Karjakin (B) Veselin Topalov
   (C) Karen Asrian (D) Mark Diesen
9. Which of the following country has won the 2014 Men's Hockey World Cup held in Netherlands on June 15, 2014 ?
   (A) Australia
   (B) Germany
   (C) Netherlands
   (D) None of the above
10. Which country won the 'FIFA World Cup Football-2014' in July 2014 ?
    (A) Brazil (B) Spain
    (C) France (D) Germany
11. Who among the following Cricketers has not had the distinction of being the highest wicket taker at one time or another in Test Cricket ?
    (A) Dennis Lillee (B) Imran Khan
    (C) Richard Hadlee (D) Courtney Walsh
12. Who has emerged as the richest footballer of the world in 2014-15 ?
    (A) Ronaldo
    (B) Lionel Messi
    (C) David Beckhan
    (D) None of the above
13. Who was adjudged as the David Dixon Award for the best Athlete at 19th Commonwealth Games held at Glasgow in July 2014 ?
    (A) Major Rajyavardhan Singh Rathore (India)
    (B) Alexandra Orlando (Canada)
    (C) Francesca Jones (Wales)
    (D) None of the above
14. Who won the Australian Lawn Tennis Women's Singles Championships 2016, held in January 2016 ?
    (A) Li Na (China)
    (B) Anastasia Msykina (Russia)
    (C) Maria Sharapova (Russia)
    (D) Angelique Kerber (Germany)

Scanned by CamScanner

15. Which team won the Deodhar Trophy of Cricket 2015-16 ?
(A) West Zone (B) India A
(C) North Zone (D) South Zone

16. Cricket World Cup—2015 was held in—
(A) New Zealand
(B) Australia
(C) Both (A) and (B)
(D) South Africa

17. Which country won the African Nations Cup of Football 2015 ?
(A) Cameroon (B) Zambia
(C) Ivory Coast (D) Ghana

18. Saina Nehwal who was recently in the news is associated with—
(A) Badminton (B) Lawn Tennis
(C) Table Tennis (D) Chess

19. The Under-19 World Cup Cricket Tournament 2016 was won by—
(A) Sri Lanka (B) West Indies
(C) England (D) Denmark

20. Which country will host the World Cup Football Tournament in 2018 ?
(A) New Zealand (B) West Indies
(C) Russia (D) South Africa

21. The 2016 UEFA European Football Championship (Euro 2016) was won by—
(A) Brazil (B) Germany
(C) Portugal (D) Netherlands

22. Arina is related with which of the following games ?
(A) Judo (B) Kho-Kho
(C) Golf (D) Horse Riding

23. Where the 20th Commonwealth Games has held ?
(A) Edinburgh–2008 (B) Glasgow–2014
(C) Nairobi–2012 (D) Islamabad–2010

24. Barcelona Open title in Tennis in April 2016 was won by—
(A) Roger Federer
(B) Rafael Nadal
(C) Kei Nishikori
(D) Novak Djokovic

25. Which player won the Men's Singles National title in the 80th Senior Badminton Championship held in February 2016 ?
(A) Anup Sridhar (B) Rupesh Kumar
(C) Jishnu Sanyal (D) Sameer Verma

26. Which of the following cricket teams set a new world record of 16 successive test wins ?
(A) South Africa (B) Australia
(C) Pakistan (D) India

27. 2019 Cricket World Cup will be held in—
(A) New Zealand (B) India
(C) England (D) South Africa

28. In the game of volleyball, the number of players on each side is—
(A) Eight (B) Five
(C) Seven (D) Six

29. Who is the winner of Wimbledon Men's Single 2016 ?
(A) Novak Djokovic
(B) Rafael Nadal
(C) Andy Murray
(D) Juan Martindel Potro

30. Who is the winner of BNP Paribas Open 2016 ?
(A) Roger Federer (B) Rafael Nadal
(C) Kei Nishikori (D) Novak Djokovic

31. Who is the Present (December 2015) President of the Indian Olympic Association ?
(A) Jagmohan Dalmia
(B) N. Ramchandran
(C) A. C. Muthia
(D) K. P. S. Gill

32. Which one of the following Indian women athletes does not figure in the world's top-50 list ?
(A) Anju B. George (B) Seema Antil
(C) K.M. Beenamol (D) Madhuri Gurnlay

33. Winner of Woman's Single Wimbledon 2016—
(A) Serena Williams (B) Ana Ivanovic
(C) Cara Black (D) Maria Sharapova

34. Fifth Women's Asia Cup-2012 for Cricket played in Guangzhou (China), was won by—
(A) Pakistan (B) Sri Lanka
(C) India (D) Bangladesh

Scanned by CamScanner

35. The 2016 Uber Cup Badminton Championship has been won by—
(A) South Korea (B) China
(C) India (D) Indonesia

36. In the history of the world cricket only three times it has so happened that in a test match the team being given (a follow-on has defeated the team giving) the follow-on. In this connection all the following statements are true except—
(A) The last distinction was cornered by India
(B) On both the earlier occasions England got the distinction
(C) Each time the defeated team was Australia
(D) On one occasion it was England and on the other it was the West Indies

37. 35th National Game of India was held in 2015 at—
(A) Chandigarh
(B) Thiruvananthapuram
(C) Jaipur
(D) Indore

38. Which state won the B.C. Roy Trophy in National Junior Football Championship played in February 2016 ?
(A) Odisha (B) West Bengal
(C) Andhra Pradesh (D) Punjab

39. Who won the French Open Lawn Tennis 2016 men's singles title played in June 2016 ?
(A) Roger Federer (Switzerland)
(B) Novak Djokovic
(C) Marat Safin (Russia)
(D) Gaston Gaudio (Argentina)

40. Who is the athlete who set the maximum number (6) of the world records in a span of 45 minutes ?
(A) Michael Johnson
(B) 'Jesse' (John Cleveland) Owens
(C) Florence G. Joyner
(D) Carl Lewis

41. Who lifted the ICC Champions Trophy 2013?
(A) India (B) England
(C) Australia (D) Pakistan

42. Which cricketer is nicknamed the Pied Piper of Punjab ?
(A) Yuvraj Singh
(B) Reetinder Sodhi
(C) Navjot Sidhu
(D) Mohinder Amarnath

43. Who scored most ODI runs and the highest number of centuries ?
(A) Rahul Dravid
(B) Allan Border
(C) Sachin Tendulkar
(D) Sanath Jaysurya

44. To which country does the traditional martial form Taekwondo belong ?
(A) Korea (B) Japan
(C) China (D) Cuba

45. In the auction by Indian Badminton League, Saina Nehwal was purchased for—
(A) 80 Lac (B) 90 Lac
(C) 60 Lac (D) 72 Lac

46. Who won the Azlan Shah Hockey Tournament held in March 2016 in Ipoh ?
(A) Malaysia (B) Singapore
(C) Australia (D) Pakistan

47. With which game is Geet Sethi associated ?
(A) Lawn Tennis (B) Kabaddi
(C) Billiards (D) Squash

48. The most popular game in the United States of America is—
(A) Baseball (B) Cricket
(C) Hockey (D) Lawn Tennis

49. The French Open men's singles title for 2016 was won by—
(A) Novak Djokovic
(B) Andy Murray
(C) Stanislas Wawrinka
(D) Juan Martindel Potro

50. The women's singles title in French Open 2016 was won by—
(A) Garbine Muguruza
(B) Venus Williams
(C) Lisa Raymond
(D) Jelena Jankovic

51. Which of the following country has won the men's Asia Cup Cricket Tournament T-20 in March 2016 ?
(A) Pakistan (B) India
(C) Sri Lanka (D) Bangladesh

Scanned by CamScanner

52. With which game/sport is J. J. Shobha associated ?
(A) Badminton (B) Hockey
(C) Athletics (D) Cricket

53. Who won the U.S. Lawn Tennis Women's Singles Championship 2016, held in September 2016 ?
(A) Justine Henin Hardenne
(B) Svetlana Kuznetsova
(C) Angelique Kerber
(D) Lisa Raymond

54. With which game is Kenya's Denis Ndiso associated ?
(A) Tennis (B) Athletics
(C) Boxing (D) Archery

55. Who is the new coach of Indian Hockey Team appointed in November 2015 ?
(A) Ajit Pal Singh (B) Pragat Singh
(C) Roelant Oltmash (D) None of these

56. Who won the U.S. Lawn Tennis Men's Singles Championship 2016, held in August-September 2016 ?
(A) Marin Cilic (B) Stan Wawrinka
(C) Thomas Berdych (D) Jonas Bijorkman

57. With which game/sport is Robin Utthappa associated ?
(A) Golf (B) Hockey
(C) Cricket (D) Billiards

58. Which of the following country has won the Davis Cup Tennis Tournament 2016 ?
(A) Argentina (B) Croatia
(C) Russia (D) China

59. Who is the first Indian woman to reach the South Pole ?
(A) Shikha Tandon (B) Bula Chaudhury
(C) Naina Sehwal (D) Reena Kaushal

60. Which of the following team has won the Durand Cup Football for 2016 ?
(A) Army Green
(B) Mahindra United
(C) Boys Sports Company, Bengaluru
(D) Mohun Bagan

61. Which of the following is the winner of the Australian Open Tennis Men's Singles Championship 2016 ?
(A) Roger Federer
(B) Stanislas Wawrinka
(C) Novak Djokovic
(D) Marat Safin

62. Which team won Vijay Hazare Trophy 2015-16 ?
(A) Gujarat (B) Assam
(C) Rajasthan (D) None of these

63. Twenty-20 World Cup Cricket in 2016 was held at—
(A) Australia (B) New Zealand
(C) Bangladesh (D) India

64. Which of the following team has won Irani Trophy Cricket played on March 2016 ?
(A) West Bengal (B) Mumbai
(C) Rest of India (D) Delhi

65. Which of the following team has won the IPL-9 tournament ?
(A) Rajasthan Royals
(B) Delhi Daredevils
(C) Sunrisers Hyderabad
(D) Chennai Super Kings

Answers

1. (D)	2. (B)	3. (D)	4. (B)	5. (A)
6. (B)	7. (D)	8. (A)	9. (A)	10. (D)
11. (B)	12. (B)	13. (C)	14. (D)	15. (B)
16. (C)	17. (C)	18. (A)	19. (B)	20. (C)
21. (C)	22. (D)	23. (B)	24. (B)	25. (D)
26. (B)	27. (C)	28. (D)	29. (A)	30. (D)
31. (B)	32. (D)	33. (A)	34. (C)	35. (B)
36. (D)	37. (B)	38. (D)	39. (B)	40. (B)
41. (A)	42. (A)	43. (C)	44. (C)	45. (D)
46. (C)	47. (C)	48. (A)	49. (A)	50. (A)
51. (B)	52. (C)	53. (C)	54. (A)	55. (C)
56. (B)	57. (C)	58. (A)	59. (D)	60. (A)
61. (C)	62. (A)	63. (D)	64. (C)	65. (C)

Hints

2. 1980 Olympics were held in Moscow. India won Gold Medals in 1928, 1932, 1936, 1948, 1952, 1956, 1964 and 1980.

54. Kenya's Denis Ndiso won at the seventh Standard Chartered Mumbai Marathon 2010 in January 2010 in two hours, 12 minutes and 34 seconds.

Scanned by CamScanner

1. Which one of the following pairs is not correctly matched ?
   (A) Straight From the Heart : Kapil Deo
   (B) My Life : Bill Clinton
   (C) The Writing on the Wall : Gen. N.C. Vij
   (D) Ignited Minds : Dr. A.P.J. Abdul Kalam
2. Who among the following has authored the book "Superstar India : From Incredible to Unstopable"?
   (A) Rodney Hartman
   (B) D. R. Kartikeyan and Radha Vinod Raju
   (C) L. K. Advani
   (D) Shobha De
3. "India's Fragile Borderlands" is a recently published book which is written by ?
   (A) Jaswant Singh
   (B) Archana Upadhyaya
   (C) Kapil Sibal
   (D) Murli Manohar Joshi
4. The book "The Sea" has been written by—
   (A) John Banville (B) Levis Caroll
   (C) A. Stevenson (D) E. M. Forster
5. Who is the author of the book "Small Island?"
   (A) Robert Mccrum (B) Andrea Levy
   (C) Lester R. Brown (D) Jeremy Moore
6. Which one of the following pairs is correctly matched ?
   (A) Zia-ud-din Barni : Tarikh-i-Muhammadi
   (B) Shams-i-Siraj Afif : Tarikh-i-Feroze-shahi
   (C) Ibn Batuta : Fatwa-i-Jahandari
   (D) Amir Khusro : Tabqat-i-Nasiri
7. Who is the author of the book "India's Water Economy : Bracing for A Turbulent Future"?
   (A) Cardinal Joseph Ratzinger, the new Pope
   (B) The Bishop of the Church of England
   (C) Both in joint authorship
   (D) R.P.S. Malik
8. The book entitled 'Indian Freedom Fighters : Struggle for Independence' on Indian National Movement was written by—
   (A) Subhash Chandra Bose
   (B) Pattabhi Sitaramaiya
   (C) Jawahar Lal Nehru
   (D) None of the above
9. Which one of the following is the author of the book "Let Us Kill Gandhi" ?
   (A) Narasimha Rao (B) Tushar A. Gandhi
   (C) Vikram Seth (D) Amitav Ghosh
10. The book "Moonlit Cage" has been authored by—
   (A) P. Chidambaram
   (B) Linda Holeman
   (C) Dr. Manmohan Singh
   (D) Dr. Subramaniam Swamy
11. The book "Faith of My Fathers" has been written by—
   (A) Barack Obama (B) John McCain
   (C) M. S. Prabhakara (D) Robert Harris
12. Which one of the following is correctly matched ?
   (A) Mahatma Gandhi : Muk Naik
   (B) Bal Gangadhar Tilak : Young India
   (C) Annie Besant : Commonweal
   (D) B.R. Ambedkar : Kesari
13. Who is the author of the book "The Elephant, The Tiger and The Cellphone" ?
   (A) George W. Bush
   (B) Atal Behari Vajpei
   (C) Shashi Tharoor
   (D) David Becham
14. Who among the following won the International Man Booker Prize for 2016 ?
   (A) Hillary Clinton (B) Han Kang
   (C) Seema Sirohi (D) Nayantara Sehgal
15. The book "The Line of Beauty" is written by—
   (A) Alan Hollinghurst
   (B) Gao Xingjian
   (C) Malcolm Bradbury
   (D) Salman Rushdie
16. Who wrote the "Ganit Sar" ?
   (A) Sridhara (B) Bhaskar II
   (C) Aryabhatta II (D) Brahmagupta
17. Who wrote "Waiting for the Mahatma" ?
   (A) M.J. Akbar (B) Pran Chopra
   (C) R.K. Narayan (D) Rajmohan Gandhi
18. The book "A Travelogue of My Struggle; Ridden Life and BSP Movement" has been authored by?
   (A) Swami Prasad Maurya
   (B) Mayawati
   (C) Joint authorship of (A) and (B)
   (D) None of the above
19. The book "The Idea of Justice" has been written by—
   (A) Amitabh Ghosh (B) Amartya Sen
   (C) Jaswant Singh (D) S. S. Sodhi

Scanned by CamScanner

20. Who was the author of "Gita Govinda" ?
(A) Vidyapati (B) Surdas
(C) Jayadeva (D) Mirabai

21. Who is the author of "The Asian Judgement : The Rise of China, India and Japan" ?
(A) Murli Manohar Joshi
(B) Lal Krishna Advani
(C) Brahma Chelani
(D) Rajiv Gandhi

22. The author of the book "Animal Farm" is—
(A) Leo Tolstoy (B) George Orwell
(C) John Dryden (D) S.M. Ali

23. The book "Confessions of A Secular Fundamentalist" was written by—
(A) Michael Moore
(B) Ashish Nandi
(C) Mani Shankar Aiyar
(D) Amit Chaudhary

24. A book that brought awareness of environment all over the world was "Silent Spring". It was written by—
(A) Julien Huxley (B) Jane Goodall
(C) John Seymour (D) Rachel Carson

25. Who is the author of "Business At the Speed of Thought" ?
(A) Dick Francis (B) John Gray
(C) Bill Gates (D) David Baldacci

26. The book "What I Require from Life" has been written by—
(A) Aman Nath (B) Jay Vithalani
(C) Tulsi Vatsal (D) J.B.S. Haldane

27. Who among the following is the author of the book "Keeping the Faith : Memoirs of a Parliamentarian" ?
(A) Sushma Swaraj
(B) Sonia Gandhi
(C) Somnath Chatterjee
(D) A. B. Bardhan

28. The book "Decoding Intolerance : Riots and the Emergence of Terrorism in India" has been authored by—
(A) N. K. Singh (B) Pratap Lahiri
(C) Natwar Singh (D) Meghnad Desai

29. Who is the author of 'In the Line of Fire : A Memoir' ?
(A) Nawaj Sharif (B) Benazir Bhutto
(C) Parvez Musharraf (D) None of these

30. Who is the author of the book "Songs of Blood and Sword" ?
(A) Sonia Gandhi (B) Arundhati Roy
(C) Fatima Bhutto (D) Shobha De

31. Who among the following is the author of the book "The Flinker Question" ?
(A) Arvind Adiga (B) Howard Jacobson
(C) Barak Obama (D) Hillary Clinton

32. Who is the author of the book "The Otherside of Justice" ?
(A) Arun Shourie (B) M.J. Akbar
(C) Jaswant Singh (D) S.S. Sodhi

33. Who is the author of the book "Without Fear"?
(A) Arun Shourie (B) Kuldeep Nayar
(C) L.K. Advani (D) M. J. Akbar

34. The author of the book "India's New Middle Class" is—
(A) Jaswant Singh (B) Lila Fernandis
(C) M. J. Akbar (D) Benazir Bhutto

35. The author of the book "Jyoti Punj" is—
(A) L. K. Advani (B) Jaswant Singh
(C) Narendra Modi (D) Sonia Gandhi

36. The author of the book "My Country, My Life" is—
(A) B. L. Joshi (B) Sushama Swaraj
(C) L. K. Advani (D) Narendra Modi

37. Who is the author of the book "Unaccustomed Earth" ?
(A) M.J. Akbar (B) Jhumpa Lahiri
(C) Sushma Swaraj (D) S. S. Sodhi

38. Who is the author of the book "Our Choice" ?
(A) Arundhati Roy (B) Barack Obama
(C) Al Gore (D) Nelson Mandela

39. Who is the author of the "Mother India : A Political Biography of Indira Gandhi" ?
(A) Sonia Gandhi
(B) Pranay Gupte
(C) Sukhendu Shekhar Ray
(D) Pranab Mukherjee

40. Who is the author of the book "The Red Sari"?
(A) Sonia Gandhi (B) Sushama Swaraj
(C) Javier Moro (D) Uma Bharati

Answers

1. (C)	2. (D)	3. (B)	4. (A)	5. (B)
6. (B)	7. (D)	8. (A)	9. (B)	10. (B)
11. (B)	12. (C)	13. (C)	14. (B)	15. (A)
16. (A)	17. (D)	18. (B)	19. (B)	20. (C)
21. (C)	22. (B)	23. (C)	24. (D)	25. (C)
26. (D)	27. (C)	28. (B)	29. (C)	30. (C)
31. (B)	32. (D)	33. (B)	34. (B)	35. (C)
36. (C)	37. (B)	38. (C)	39. (B)	40. (C)

Scanned by CamScanner

United Nations Organisation and Other World Organisations

1. How many members are there in United Nations ?
   (A) 189 (B) 191
   (C) 193 (D) 192
2. The Headquarters of UNESCO is in—
   (A) Germany (B) Paris
   (C) U.S.A. (D) Italy
3. Who is the Managing Director of International Monetary Fund ?
   (A) Hoerst Kohler (B) Anne Kruegei
   (C) Michae Grade (D) Christine Lagarde
4. 3rd India-Africa Forum Summit has held on 29 October, 2015 at—
   (A) New Delhi (B) Copenhagen
   (C) Rio de Janerio (D) Peris
5. The 27th NATO Summit was held on July 8-9, 2016 at—
   (A) Tripoli (Libya)
   (B) Warsaw (Poland)
   (C) Lagos (Nigeria)
   (D) Nairobi (Kenya)
6. Which one of the following countries is not a member of the 'BRICS' ?
   (A) China (B) India
   (C) Russia (D) Bangladesh
7. The six official languages of the UN are Russia, Chinese, English, French, Spanish and—
   (A) Hindi (B) Urdu
   (C) Arabic (D) Japanese
8. Who is the President of the World Bank ?
   (A) Michael Condesus
   (B) Jim Yong Kim
   (C) Romano Prodi
   (D) Mike More
9. The present strength of NATO (including seven newly admitted members) is—
   (A) 19 (B) 25
   (C) 28 (D) 23
10. The year 2017 has been declared by United Nations as—
    (A) International Year of Fresh Water
    (B) International Year of Sustainable Tourism for development
    (C) International Year of Soil
    (D) World Tourism Year
11. Which of the following has been appointed the United Nations Human Rights High Commissioner ?
    (A) Zeid bin Raád
    (B) S. Prabhakaran
    (C) Justice Sudha Misra
    (D) Sajal Chakarvorty
12. Who among the following was the Secretary General of the Amnesty International ?
    (A) Sakina Khan
    (B) Najma Sayeed
    (C) Salil Shetty
    (D) Zulia P. Khan
13. ICD stands for—
    (A) Inter-governmental Classification of Disease
    (B) International Classification of Disease
    (C) International Centre for Disease
    (D) International Certification for Disease
14. CCIT stands for—
    (A) Comprehensive Conference on International Terror
    (B) Comprehensive Convention on International Terrorism
    (C) Comprehensive Convention on Intercontinental Terrorism
    (D) None of the above

Scanned by CamScanner

15. The origin of the phrase 'United Nations' is associated with one of the following personalities—
(A) Jawaharlal Nehru
(B) Franklin D. Roosevelt
(C) Charles De Gaulle
(D) Woodrow Wilson

16. June 4 is observed as—
(A) World Environment Day
(B) Heritage Day
(C) International Day of Innocent Children Victims of Aggression
(D) Youth Day

17. The Seventh Summit of the Americas (Called Organisation of American States—OAS) was held in April 2015 at—
(A) Havana (Cuba)
(B) Lima (Peru)
(C) Cartagena (Colombia)
(D) Panama City (Panama)

18. Ban Ki-Moon is the—
(A) Deputy Premier of Japan
(B) New President of UNICEF
(C) New Secretary General of UNO
(D) Director General, World Meteorological Organisation

19. The Constitution of UNO is called—
(A) Magna Carta (B) Peace Agreement
(C) Charter (D) Declaration

20. The number of non-permanent members of the Security Council is—
(A) 6 (B) 8
(C) 10 (D) 12

21. The Year 2015 is being observed as—
(A) International Year of light
(B) International Year of Potato
(C) International Year of Sanitation
(D) International Year of Planet Earth

22. December 10 is observed as—
(A) World Health Day
(B) U.N. Day
(C) World Red Cross Day
(D) Human Rights Day

23. United Nations was established in—
(A) 1942 (B) 1945
(C) 1939 (D) 1941

24. The United Nations Climate Change Conference COP21 has held on November 30, 2015 to December 12, 2015—
(A) Brasilia (B) Peris
(C) London (D) New York

25. Which one of the following is the 193rd member of the U.N. ?
(A) Eritriya (B) Zambia
(C) Congo (D) South Sudan

26. How many members are there in European Union ?
(A) 15 (B) 24
(C) 25 (D) 28

27. How many members are there in World Trade Organization (WTO) ?
(A) 149 (B) 150
(C) 151 (D) 164

28. World Water Day is observed on—
(A) 22nd January (B) 22nd March
(C) 22nd April (D) 22nd May

29. 42nd G-7 Summit was held on June 2016 at—
(A) India (B) Japan
(C) Heiligendamm (D) St. Petersburg

30. The 2016 Nuclear Security Summit has held at—
(A) Beijing (B) Copenhegan
(C) Washington DC (D) Singapore

31. Fourth Nuclear Security Summit has held on March 31–April 1, 2016 at—
(A) Moscow (B) Washington D.C.
(C) Beijing (D) Singapore

Answers

1. (C)	2. (B)	3. (D)	4. (A)	5. (B)
6. (D)	7. (C)	8. (B)	9. (C)	10. (C)
11. (A)	12. (C)	13. (C)	14. (B)	15. (B)
16. (C)	17. (D)	18. (C)	19. (C)	20. (C)
21. (A)	22. (D)	23. (B)	24. (B)	25. (D)
26. (D)	27. (D)	28. (B)	29. (B)	30. (C)
31. (B)				

Hint

6. The member countries of 'BRICS' are Brazil, Russia, India, China and South Africa.

Scanned by CamScanner

Awards

1. Indira Gandhi Award for Peace, Disarmament and Development-2015 has been conferred on—
   (A) Mohammed El Baradei
   (B) Nelson Mandela
   (C) Luiz Inacio Lula da Silva
   (D) UNHCR
2. Who was awarded the Abel Prize for Mathematics for the year 2016 ?
   (A) Navika Kumar
   (B) P. R. Ramesh
   (C) Sweta Singh
   (D) Andrew Wiles
3. Who is the recipient of the Dada Saheb Phalke Award for 2015 ?
   (A) Tapan Sinha (B) Manoj Kumar
   (C) Manna Dey (D) None of these
4. Who is the recipient of Shanti Swarup Bhatnagar Award in Engineering Science for the year 2016 ?
   (A) Ravishankar Narayanan
   (B) Y. Shanti Pavan
   (C) Avinash Kumar Agarwal and Venkat Narayana Padmanabham
   (D) Dr. G.P.S. Raghava
5. Which of the following is the recipient of Nobel Prize for Chemistry for the year 2016 ?
   (A) Richard F. Heck
   (B) Ei-ichi Negishi
   (C) Akira Suzuki
   (D) Fraser Stoddart and Jean-Pierre Sauvage
6. Professor Amartya Sen was honoured with—
   (A) UNESCO Peace Prize
   (B) Nobel Prize in Economics
   (C) Bharat Ratna
   (D) Both (B) and (C)
7. The 'Dronacharya Award' is associated with the—
   (A) Eminent Surgeons
   (B) Famous Artists
   (C) Sports Coaches
   (D) Expert Engineers
8. Which paper bagged the Pulitzer Prize 2016 for Breaking News Photography ?
   (A) Los Angeles Times
   (B) Mary Chind of the Des Moines
   (C) Los Angeles Times
   (D) Boston Globe
9. Oliver Hart and Bengt Holmstron has won Nobel Prize for 2016 in—
   (A) Medicine (B) Economics
   (C) Physics (D) Literature
10. Who among the following received Ramon Magsaysay Award in 2015 ?
    (A) Harish Handa (B) Koul Panha
    (C) Nileema Mishra (D) Sanjeev Chaturvedi
11. Who was awarded the Nobel Prize for Peace in the year 2016 ?
    (A) Ellen Johnson Sirleaf
    (B) Leyman Gbowee
    (C) Tawakkol Karman
    (D) Juan Manual Santos
12. Who won the Walter Scott Prize 2016 ?
    (A) Imre Kertesz (B) Jimmy Carter
    (C) V. S. Nayapaul (D) Simon Mawar
13. The first Indian to win Nobel Prize was—
    (A) C.V. Raman
    (B) Rabindra Nath Tagore
    (C) Hargovind Khurana
    (D) Amartya Sen
14. The Saraswati Samman for 2015 has been conferred on—
    (A) Prof. R. S. Tripathi
    (B) Yashwant Vyas
    (C) Dr. Pratibha Shrotiya
    (D) Padma Sachdev
15. Rajiv Gandhi Khel Ratna Award for the year 2016 was conferred on—
    (A) P.V. Sindhu (Badminton)
    (B) Jitu Rai (Shooting)
    (C) Sakshi Malik (Wrestling)
    (D) Deepa Karmakar (Gymnastics)
    (E) All of the above

Scanned by CamScanner

16. Who among the following is a recipient of Padma Vibhushan Awards for 2016 ?
(A) K.G. Subramanyan
(B) T.V. Rajeshwar
(C) Viswanathan Shanta
(D) K.H. Sancheti

17. Who was the first Indian Lady actress to receive the Padma Shri Award ?
(A) Madhubala
(B) Meena Kumari
(C) Nargis Dutt
(D) Smita Patil

18. Who won the Best Actress Award at the 63rd National Awards as announced in 2015 ?
(A) Kajol
(B) Vidya Balan
(C) Kangana Ranaut
(D) Rani Mukherjee

19. Which sportsman has won the Laureus World Sportsman of the year Award for 2015 ?
(A) Genzebe Dibaba (B) Paula Radcliff
(C) Lewis Hamilton (D) None of these

20. Yoshinori Ohsumi were conferred which of the following prizes ?
(A) Mahatma International Peace Prize, 2014
(B) Nobel Prize for Medicine 2016
(C) Indira Gandhi Prize for Peace, Development and Disarmament 2015
(D) Magsaysay Award for Peace and International Understanding 2015

21. Which one of the following is a recipient of Jamnalal Bajaj Award 2015 in the field of Science and Technology ?
(A) Vivekanandan
(B) Jaywant Mathkar
(C) Kalyan Paul
(D) Nighat Shafi

22. The Best Actor Award in the 63rd National Film Awards for 2015 was conferred on—
(A) Amitabh Bachchan (B) Aamir Khan
(C) Shahrukh Khan (D) None of these

23. Who among the following has won the Nobel Prize for Physics in the year 2016 ?
(A) Robert J. Shiller
(B) Lars Peter Hansen
(C) Eugene F. Fama
(D) Duncan Holdane and David Thouless

24. Who has been honoured with Harvard University's 'Humanitarian Honour' in October 2016 ?
(A) Kumar Shanu
(B) Sonu Nigam
(C) Aung San Suu Kyi
(D) Amitabh Bachchan

25. Who is the recipient of Jnanpith Award for 2015 ?
(A) Vinda Karandikar
(B) Kedarnath Singh
(C) U. R. Ananthmurthy
(D) Raghuveer Chaudhari

26. Who is the recipient of Pulitzer Prize 2016 ?
(A) Amartya Sen
(B) Washington Post
(C) L. K. Advani
(D) Somnath Chatterjee

27. Who crowned by Femina Miss India Award 2016 ?
(A) Jhataleka Malhotra
(B) Megan Young
(C) Gurpreet Kaur
(D) Priyadarshini Chatterjee

28. Which film won the best feature film award among the 63rd National Film Awards 2015 ?
(A) Baahubali (B) Omkara
(C) Traffic Signal (D) Podokkhep

29. Who won the Best Actress Award at 17th IIFA film fare award 2016 ?
(A) Deepika Padukone
(B) Rani Mukharjee
(C) Vidya Balan
(D) Kajol

Answers

1. (D)	2. (D)	3. (B)	4. (C)	5. (D)
6. (D)	7. (C)	8. (A)	9. (B)	10. (D)
11. (D)	12. (D)	13. (B)	14. (D)	15. (E)
16. (C)	17. (C)	18. (C)	19. (A)	20. (B)
21. (A)	22. (A)	23. (D)	24. (C)	25. (D)
26. (B)	27. (D)	28. (A)	29. (A)	

Scanned by CamScanner

Current Affairs

Scanned by CamScanner

Objective Questions

1. Twenty-20 World Cup Cricket, 2016 has been won by—
   (A) England (B) West Indies
   (C) Australia (D) Pakistan

2. Who among the following is placed top on the Forbes Indian 100 richest person in the year 2016 ?
   (A) Michael Moritz (B) L. John Doerr
   (C) Mukesh Ambani (D) Arjun Gupta

3. The U. N. proclaimed 2016 as a year of—
   (A) International Year of Pulses
   (B) International Year of Dolphin
   (C) International Year of Culture
   (D) International Press Freedom Year

4. Suzlon has set up world's tallest hybrid wind turbine in—
   (A) Andhra Pradesh (B) Gujarat
   (C) Goa (D) Maharashtra

5. Who is the present Chief Justice of Supreme Court of India ?
   (A) Justice Ramesh Chandra Lahoti
   (B) Justice V. N. Khare
   (C) Justice T.S. Thakur
   (D) Justice Y. K. Sabharwal

6. Who among the following is the Governor of Gujarat ?
   (A) Margret Alwa
   (B) K. Shankaranarayan
   (C) K. M. Seth
   (D) O.P. Kohli

7. The book 'A View from the Outside' (Why good economics works for everyone) has been written by—
   (A) Prof. Amartya Sen
   (B) K. G. Joglekar
   (C) P. Chidambaram
   (D) Edmund S. Phelps

8. Which of the following satellites has been successfully launched on January 20, 2016 ?
   (A) RISAT-1
   (B) LAPAN-TUBSAT
   (C) IRNSS-1E
   (D) HAMSAT

9. Which of the following country has won the FIFA World Cup 2014 ?
   (A) Germany (B) Netherlands
   (C) Spain (D) Brazil

10. The largest milk producing state in India during 2014-15 was—
    (A) Rajasthan (B) Gujarat
    (C) Uttar Pradesh (D) Andhra Pradesh

11. The UN Deputy Secretary- General is—
    (A) Jan Eliasson
    (B) Mark Malloch Brown
    (C) Shashi Tharoor
    (D) Louise Frechette

12. India's place in Transparency International's Corruption Perception Index 2015 is—
    (A) 136th (B) 100th
    (C) 76th (D) 44th

13. The novel 'The Second Wife' is the English translated version of which among the following novels of Premchand ?
    (A) Godan (B) Karma Bhumi
    (C) Nirmala (D) Gaban

14. The Sydney Peace Prize of 2016 has been awarded to—
    (A) Olafur Ragnar Grimson
    (B) Gohchok Tong
    (C) Naomi Klein
    (D) Nelson Mandela

Scanned by CamScanner

15. It was decided to observe Mahatma Gandhi's birth day October 2 as the International Non-violence Day at—
    (A) International Indology Conference
    (B) Satyagraha Centenary Conference
    (C) Congress Foundation Day Celebrations
    (D) None of the above

16. The 2016 Ranji Trophy has been won by—
    (A) Mumbai (B) Bengal
    (C) Uttar Pradesh (D) Tamil Nadu

17. Who has been appointed from India as Senior Director in the World Bank on Feb. 2016 ?
    (A) Amitabh Singh (B) Saroj Kumar Jha
    (C) Suvarna Kumar (D) Nikhil Srivastava

18. Who amongst the following has been appointed as First Woman Director General of International Monetary Fund ?
    (A) Yingluck Shinawatra
    (B) Margret Alwa
    (C) Christine Lagarde
    (D) Caroline Atkinson

19. The Raghvan Committee is related to looking into the issue of—
    (A) Ragging and suggest means of prevention in educational institutions
    (B) Status of Muslim community in India
    (C) Reservation of OBCs in admissions to higher educational institutions
    (D) None of the above

20. 2016 Nobel Prize for Physics has been awarded to—
    (A) Saul Perimutter
    (B) Brian P. Schmidt
    (C) Adam B. Ries
    (D) J. Michael Kosterlitz and Duncan Haldane

21. June 21 has been declared by the United Nations General Assembly as a—
    (A) LIN International day of Yoga
    (B) UN International day of Sports
    (C) UN International day of Climate change
    (D) None of the above

22. 'THEMIS' is an acronym for—
    (A) Time History of Events and Meteors in Space
    (B) Time History of Events and Macroscale Interactions during Substorms
    (C) Thermal Interactions in Space
    (D) None of the above

23. The telecommunication network group Hutchison Essar has been taken over by—
    (A) Reliance Communications
    (B) Verizon
    (C) Vodafone
    (D) Hinduja

24. Who is the new president of FICCI ?
    (A) Indira Nooyi
    (B) Arundhati Bhattacharya
    (C) Chandra Kochhar
    (D) Harshvardhan Neotia

25. Which among the following tennis player won the 2016 French Open men's title ?
    (A) Juan Carlos Ferrero
    (B) Lars Burgsmuller
    (C) Novak Djokovic
    (D) Feliciano Lopez

26. 'Aam Admi Bima Yojana' is an insurance scheme for rural landless households introduced by—
    (A) National Insurance Co.
    (B) Life Insurance Co.
    (C) UTI
    (D) ICICI Life Prudential Co.

27. Who is the present (October 2016) Chairman and Managing Director of ONGC ?
    (A) Sudha Sharma
    (B) Poonam K. Saxena
    (C) Anand Sharma
    (D) Dinesh Sarraf

28. Dada Sahib Phalke Award for 2015 has been awarded to—
    (A) Mrinal Sen
    (B) Adoor Gopalkrishnan
    (C) Dev Anand
    (D) Manoj Kumar

29. Who has appointed Governor of Jharkhand ?
    (A) Sheila Dixit (B) Shilpa Shetty
    (C) Dinesh Sarraf (D) Droupadi Murmu

Scanned by CamScanner

of Union ?

(A) Sushma Swaraj (B) Vankya Naidu

(C) Narendra Modi (D) Rajnath Singh

31. Asian Development Bank in its 'World Development Outlook' has projected India's economic growth 2016-17 at—

(A) 7·1% (B) 7·5%

(C) 7·4% (D) 8·2%

32. Who is the present (October 2016) chief of Intelligence Bureau (IB) ?

(A) Dineshwar Sharma

(B) Ajit Doval

(C) Arup Raha

(D) Nripendra Mishra

33. The theme for the **National Science Day 2016** is—

(A) More Water Drop by Drop

(B) Make in India : S & T-driven innovations

(C) 50 years of DNA and 25 years of IVF

(D) None of the above

34. Bangladesh's Nobel Peace Prize winner Muhammad Yunus has launched his political party named—

(A) Islamic Unity Front

(B) Jamaat-e-Islami Bangladesh

(C) Nagorik Shakti (Citizens' power)

(D) Bangladesh Jatiyatabadi Dal

35. The book 'Unaccustomed Earth' has been written by—

(A) Jhumpa Lahiri (B) P. Chidambaram

(C) Zahid Hussain (D) Scott Ritter

36. Which among the following movie was given the Best Picture Award at **88th Oscar Awards- 2015 ?**

(A) Spotlight

(B) The Last King of Scotland

(C) The Queen

(D) Twelve Years A Slave

37. The Best Actor Award at the **63rd National Film Awards 2015** was given to—

(A) Aamir Khan

(B) Amitabh Bachchan

(C) Saif Ali Khan

(D) Abhishek Bachchan

tax receipt as a percentage of GDP for the year 2017-18 has been estimated at—

(A) 12·6% (B) 11·8%

(C) 10·3% (D) 10·9%

39. Grey revolution is associated with—

(A) Mashroom (B) Fertilizers

(C) Prawn (D) Egg

40. As per the estimates generated by IMF, which one of the following countries becomes the largest economy in the world based on Purchasing Power Parity (PPP) ?

(A) USA (B) China

(C) UK (D) Russia

41. Which among the following is the largest Power Station in India ?

(A) NTPC's Vindhyachal Power Station

(B) NTPC's Talcher Power Station

(C) BHEL, Haridwar

(D) None of the above

42. As per the WTO's International Trade Statistics 2015, India's share in world total export trade is—

(A) 1·0% (B) 1·3%

(C) 1·5% (D) 1·69%

43. The Governor of West Bengal is—

(A) Ibobi Singh

(B) Keshri Nath Tripathi

(C) Prakash Singh Badal

(D) D. D. Lapang

44. Which among the following satellite has been successfully launched in June 22, 2016 ?

(A) Astra (B) CARTOSAT-2

(C) INSAT-3E (D) INSAT-4C

45. Who among the following has been chosen for the **Jnanpith Award** for 2015 ?

(A) Amar Kant

(B) Raghuveer Chaudhary

(C) Ravuri Bharadwaja

(D) Kedarnath Singh

46. The XXth Commonwealth Games were held at Glassgow in—

(A) April-May 2011

(B) May-June 2012

Scanned by CamScanner

(C) July-August 2014
(D) September-October 2013

47. Who among the following has been chosen for Vyas Samman 2015 ?
(A) Sunita Jain (B) Alka Dupkar
(C) Sunita Sharma (D) Amar Kant Verma

48. Who has been appointed new Chairman of Quality Council of India (QCI) in September 2014 ?
(A) N. Shantakumar (B) Siddharta Birla
(C) Adil Zainul Bhai (D) Kaushik Basu

49. Which of the following is the present (October, 2016) Prime Minister of Pakistan ?
(A) Nawaz Sharif
(B) Justice Rana Bhagwandas
(C) Justice Nazim Siddiqui
(D) Justice Javaid Iqbal

50. Which of the following has host the Men's Hockey Champions Trophy 2016 ?
(A) Sri Lanka (B) Australia
(C) U.K. (D) Bangladesh

51. Who among the following has been awarded the highest Mexican Civilian Award, the Aztec Eagle ?
(A) Lord Swaraj Paul
(B) Bill Gates
(C) Amitabh Bachchan
(D) Ratan Tata

52. Most powerful woman in the world according to the, 2016 published Forbes Magazine list ?
(A) Angela Markel (B) Condoleeza Rice
(C) Sonia Gandhi (D) Wu Yi

53. 'Agile' is—
(A) A mission to Mars
(B) India's first foreign satellite to be launched from Satish Dhawan Space Centre, Sriharikota
(C) A mission to Saturn
(D) None of the above

54. The present C.E.O. of Bombay Stock Exchange—
(A) Ashish Chauhan
(B) Justice S. D. Agarwala
(C) S. Ramadorai
(D) Mr. Sudhir Narain

55. Ustad Bismillah Khan Yuva Puraskar is given by—
(A) Pt. Ravishankar University of Music
(B) Bhatkhande Music University
(C) Indira Kala Sangeet University
(D) Sangeet Natak Akademi

56. Leon Masters Rapid Chess Tournament, 2013 has been won by—
(A) Anish Giri
(B) Vessily Ivanchuk
(C) Alexander Morozevich
(D) Levon Aronian

57. After merger, Tata-Corus has become the ..... largest steel producer in the World.
(A) 3rd (B) 4th
(C) 5th (D) 6th

58. 'Pure Banking, Nothing Else' is a slogan raised by—
(A) ICICI Bank (B) HDFC Bank
(C) SBI (D) UTI Bank

59. 'Smart Money' is a term used for—
(A) Internet Banking (B) Credit Card
(C) Cash with Bank (D) Cash with Public

60. Which one of the following stands at first rank in the list of top 10 steel producers in the world ?
(A) Nippon Steels (B) Tata-Corus
(C) Arcelor-Mittal (D) Bao Steel

61. Which of the following country has decided not to print its king's photo on national currency ?
(A) Nepal (B) Japan
(C) Denmark (D) None of these

62. Who is the present (October) Chairman of Central Board of Direct Taxes (CBDT) ?
(A) Jyoti Krishna Dutt
(B) Kiran Mazumdar
(C) Rani Singh Nair
(D) Arun Balkrishnan

63. Rastogi Panel was set up by Finance Ministry to review issues related with—
(A) Service tax (B) Sales tax
(C) Income tax (D) None of these

Scanned by CamScanner

64. What is the title of the seventh book of Harry Potter Series ?
(A) Harry Potter and the Half Blood Prince
(B) Harry Potter and the Deathly Hallows
(C) Harry Potter and the Goblet of Fire
(D) None of the above

65. 'India : Issues in Development' is a book written by—
(A) Judith Rodriguez (B) Nilanjana S. Roy
(C) M. Guruswamy (D) None of these

66. The book 'Indomitable Spirit' is written by—
(A) Tushar Gandhi
(B) Khushwant Singh
(C) Dr. A.P.J. Abdul Kalam
(D) Dilip Kumar

67. The former Iraqi President Saddam Hussein was executed in Baghdad on December 30, 2006. He was held guilty of—
(A) The Dujail killings
(B) The Kuwait invasion
(C) Killings of US troops
(D) None of the above

68. Who has been appointed Chief Economic Advisor of Government of India ?
(A) Arvind Subramanian
(B) Deepak Parikh
(C) Subir Gokaran
(D) B. B. Bhattacharya

69. The second woman of Indian origin to go into space after (Kalpana Chawla) is—
(A) Anoushah Ansari (B) Sunita Williams
(C) Anita Williams (D) None of these

70. The 36th National Games will be organised at—
(A) Imphal (B) Chennai
(C) Goa (D) Pune

71. First UP Pravasi Bhartiya Diwas 2016 has held at—
(A) Agra (B) Kanpur
(C) Allahabad (D) None of these

72. The PSLV-C14 was successfully launched into space from the Satish Dhawan Space Centre at Sriharikota on 23rd September, 2009. PSLV stands for—
(A) Polar Space Light Vehicle
(B) Polar Space Launch Vehicle
(C) Polar Satellite Light Vehicle
(D) Polar Satellite Launch Vehicle

73. 'SAFMA' is associated with—
(A) ASEAN (B) G–8
(C) SAARC (D) BIMSTEK

74. Guantanamo is—
(A) An atomic energy centre of North Korea
(B) A military prison of U.S.A.
(C) A satellite of China
(D) A new agency of Brazil

75. Jian-10 is—
(A) Japan's news agency
(B) China's home-made fighter aircraft
(C) South Korea's anti-aircraft gun
(D) Japan's Tsunami alert system

76. Who is the present Chairperson of the National Human Rights Commission (NHRC) ?
(A) Justice Shivraj V. Patil
(B) Justice Y. Bhaskar Rao
(C) Justice H.L. Dattu
(D) P. C. Sharma

77. 'France 24' is—
(A) France's Oil Company
(B) Commerce and Trade Union of France
(C) An Atomic Energy Centre of France
(D) France's International News Channel

78. BrahMos Missile is a joint venture of—
(A) Russia and India (B) China and India
(C) U.S.A. and India (D) France and India

79. The 29th ASEAN Summit was held in September 2016 at—
(A) Vientiane (B) Manila
(C) Seoul (D) Hanoi

80. Mullaperiyar dam is a disputable issue between—
(A) Kerala and Tamil Nadu States
(B) Kerala and Karnataka States
(C) Karnataka and Tamil Nadu States
(D) None of the above

Scanned by CamScanner

81. CARTOSAT-2A is—
(A) A comet
(B) A tank of Indian army
(C) Earth observing satellite in a sun-synchronous orbit
(D) An army communication network

82. **Margaret Chan** was appointed as the Director General of—
(A) World Health Organisation (WHO)
(B) World Trade Organisation (WTO)
(C) Asian Development Bank (ADB)
(D) Non-Aligned Movement (NAM)

83. Which one among the following countries has joined World Trade Organisation as the 164th member in July 2016 ?
(A) Nepal (B) Afghanistan
(C) Singapore (D) Iran

84. At present (August 2016) what is the percentage of Reverse Repo Rate ?
(A) 5·50% (B) 6·00%
(C) 5·75% (D) 6·75%

85. Which of the following members of G-7 was expelled from the group on March 2015 ?
(A) France
(B) Germany
(C) Russian Federation
(D) None of the above

86. How many companies from India found place in 'Fortune Global-2000' List in May 2015 ?
(A) 4 (B) 5
(C) 56 (D) 10

87. At present (October 7, 2016) what is the percentage of Repo Rate ?
(A) Below 7% (B) 6·25%
(C) 8·5% (D) 9·6%

88. Which of the following Indian company has been listed at the top in Fortune Global-500 List in 2014 ?
(A) IOC (B) Reliance Industries
(C) TCS (D) Infosys Tech

89. The 8th BRICS Summit has held in 2016 in—
(A) Durban (S. Africa)
(B) Jakarta (Indonesia)
(C) Goa (India)
(D) Malaysia (Kuala Lumpur)

90. Koneru Humpy is related with which among the following games ?
(A) Chess (B) Badminton
(C) Tennis (D) Table Tennis

91. The film that won the Best Film Award at 16th International Indian Film Academy (IIFA) is—
(A) Queen
(B) A Short Life
(C) Nirontor (Forever Flows)
(D) Sonam

92. Report of the Sachar Committee is related with—
(A) Social, Economic and Educational Status of the Muslim Community
(B) Status of the Scheduled Castes in India
(C) Economic Status of Backward Classes in India
(D) None of the above

93. Uhuru Kenyatta is the new President of..... since April 2013.
(A) Somalia (B) Kenya
(C) Kazakhstan (D) None of these

94. Who among the following has been won the title of Miss Universe 2015 ?
(A) Amruta Patki
(B) Pia Wurtzbach
(C) Catherine Untalan
(D) Marianne Puglia

95. The Chief Minister of Goa is—
(A) Churchill Alemao
(B) Laxmikant Parsekar
(C) Digamber Kamat
(D) Pratap Singh Rane

96. Where did Sachin Tendulkar hit his 100th century ?
(A) Australia (B) Bangladesh
(C) Sri Lanka (D) Pakistan

97. Delhi University has conferred an honorary doctorate degree for the first time on a film personality. Who is that film personality ?
(A) Dileep Kumar
(B) Amitabh Bachchan
(C) Shabana Azmi
(D) Dev Anand

Scanned by CamScanner

98. Who heads special investigation team, set up to unearth black money stashed abroad by Narendra Modi Government ?
(A) Justice (Retd.) Arjit Pasayat
(B) Justice (Retd.) M.B. Shah
(C) Justice (Retd.) Altamas Kabir
(D) Justice H. L. Dattu

99. The Champions League Twenty-20 Trophy 2014 has been won by—
(A) South Redbacks
(B) Chennai Super Kings
(C) Cape Cobras
(D) Warriors

100. 'Deep Fritz' is—
(A) A technique of refrigeration
(B) A commercially available ches computer program
(C) A laptop computer
(D) A car launched by Hyundai

101. In 2016, Lokmanya Tilak award has been awarded to—
(A) Dr. Shekhar Gupta
(B) Chandrakanta
(C) Vinda Karandikar
(D) Mridula Garg

102. The recipient of Indira Gandhi Prize for Peace, Disarmament and Development for 2015 is—
(A) Hamid Karzai
(B) Maha Chakri Sirindhorn
(C) Kofi Annan
(D) U.N.H.C.R.

103. Who has been appointed the Solicitor General (SG) of India in June 2014 ?
(A) Ranjit Kumar (B) Maninder Singh
(C) L. Nageshwar Rao (D) Tushar Mehta

104. Nobel Peace Prize for 2016 has been awarded to—
(A) Malala Yousafzai
(B) Kailash Satyarthi
(C) Vaclav Jirsa
(D) Juan Manual Santoz

105. The newly formed 22nd district of Haryana is—
(A) Mohali (B) Palwal
(C) Mewat (D) Charkhi Dadri

106. According to the Human Development Report 2015, India has acquired the rank of—
(A) 128th (B) 134th
(C) 130th (D) 140th

107. 2016 Nobel Prize for Literature has been awarded to—
(A) Akira Suzuki (B) Richard F. Heck
(C) Liu Xiaobo (D) Bob Dylan

108. 'Sensitive sector' as defined by RBI include(s)—
(A) Capital Market (B) Real Estate
(C) Commodities (D) All of these

109. As per the data of foreign debt at end-March 2016, the ratio of concessional debt to total external debt stood at—
(A) 10·4 (B) 9·0
(C) 8·7 (D) 8·2

110. IRDA in India regulates—
(A) Banking business
(B) Insurance business
(C) Capital business
(D) Public issue of shares

111. Which Indian group of business houses has made a space in top 20 global firms in Forbes list of world's most reputed companies ?
(A) Tata Group
(B) Maruti Suzuki
(C) Infosys
(D) Hero Honda Motors

112. In which fuel, the government has decided to mix 'marker' for identifying adulteration ?
(A) Kerosene (B) Diesel
(C) Petrol (D) All of these

113. Who among the following has started a new enterprise named 'blogevery where.com' ?
(A) Ratan Tata (B) Narayan Murti
(C) Azim Premji (D) Sabeer Bhatia

114. Tata Steel has acquired which among the following steel producer company ?
(A) Mittal Steel (B) Corus
(C) Arcelor (D) Nippon Steel

115. The fourth Asian Film Festival was held in—
(A) Pune (B) Mumbai
(C) Nagpur (D) Goa

Scanned by CamScanner

116. **Tshwane Declaration** has been signed between—
(A) India and China
(B) India and South Africa
(C) India and Nepal
(D) India and Russia

117. The book 'Falling Over Backwards' has written by—
(A) Arun Shourie (B) Ninan Koshi
(C) Arundhati Roy (D) R. K. Narayan

118. 'Sakshat' is—
(A) An educational website
(B) A missile
(C) An artificial satellite
(D) A railway project

119. Who among the following received both Bharat Ratna and Nishan-e-Pakistan ?
(A) Morarji Desai
(B) Ayub Khan
(C) Maulana Abul Kalam Azad
(D) Lal Bahadur Shastri

120. The present (August 2016) Governor of Goa is—
(A) G. K. Gandhi (B) Buta Singh
(C) B.V. Wanchoo (D) Mridula Sinha

121. 'Sabse Pahale Pakistan' is an Urdu translated version of which among the following books ?
(A) Pakistan Eye of the Storm
(B) In the Line of Fire
(C) Pakistan Today
(D) Passage to Pakistan

122. The 2015 C. K. Nayadu Life Time Achievement Award of the year has been won by—
(A) Sunil Gavaskar
(B) Syed Kirmani
(C) Gundappa Vishwanath
(D) Madan Lal

123. 'Rainbow' is—
(A) An ice-cream
(B) Prasar Bharti's FM Channel
(C) A suitcase
(D) A musical group

124. The 2015 ICC Women's ODI Cricketer of the year award has been won by—
(A) Lisa Sthalekar (B) Jhulan Goswami
(C) Anju Banerjee (D) Meg Lanning

125. 'Garib Rath' is—
(A) The first AC train for the poor
(B) A portal
(C) A project launched by Ministry of HRD
(D) A low price car

126. Which one among the following countries has been elected recently as a non-permanent member of the Security Council ?
(A) South Africa (B) Italy
(C) Belgium (D) Australia

127. Who among the following won the Asian Football Cup 2015 ?
(A) Belgium (B) France
(C) England (D) Australia

128. Solar-B satellite to study the sun was launched by—
(A) Japan (B) China
(C) Russia (D) America

129. Who among the following has won 2016 Nobel Prize in Medicine ?
(A) William C. Campbell
(B) Youyou Tu
(C) Satoshi Omura
(D) Yoshinori Ohsumi

130. Saina Nehwal is related with which among the following sports ?
(A) Badminton (B) Tennis
(C) Chess (D) Table Tennis

131. 'GLONASS' is—
(A) Global Navigational Satellite System
(B) Global Navigational Space System
(C) Geostationary Launch of Artificial Space System
(D) Global New Astronomical Space System

132. India has signed first bilateral agreement on social security with which among the following countries ?
(A) Belgium (B) Holland
(C) France (D) Germany

133. Nishan-e-Pakistan, the highest civilian award of Pakistan has been awarded to—
(A) Emperor Akiheto and Recep Toyysp Erdogan
(B) Dilip Kumar
(C) King Abdullah
(D) Khuswant Singh

Scanned by CamScanner

134. 2016 Nobel Prize for Chemistry has been awarded to—
(A) Froser Stoddart
(B) Jean Pierre Sauvage
(C) Ben Feringa
(D) All of the above

135. 'Miss World 2015' is—
(A) Ioana Valentina Boitor
(B) Mireia Lalaguna
(C) Sabrina Houssami
(D) Natasha Suri

136. The present (October 2016) Prime Minister of France is—
(A) Junichiro Koizumi
(B) Manuel Valls
(C) Taro Aso
(D) Hashimoto Ryutaro

137. National Communal Harmony Award for the year 2014 has been awarded to—
(A) Khamliana
(B) Mohd. Abdul Basi
(C) Muzaffar Ali
(D) M.S. Subbulakshmi

138. Which among the following has been re-elected to the United Nations Human Rights Committee for the fourth time ?
(A) Nisuke Ando
(B) Michael O' Flaherty
(C) Justice P.N. Bhagwati
(D) Ivan Shearer

139. The UNESCO-Madanjeet Singh Prize for 2014 for the promotion of tolerance and non-violence and making Gandhian Principles has been awarded to—
(A) Ibrahim Ag Idbaltanat
(B) Franciso Javier Estevez Valencia
(C) Both (A) and (B)
(D) Pope Shenouda-III

140. Who among the following is the winner of Wimbledon Open 2016 women's single title ?
(A) Petra Kvitova
(B) Maria Sharapova
(C) Svetlana Kuznetsova
(D) Serena Williams

141. The present (October) Foreign Secretary of India is—
(A) Romesh Bhandari (B) Shyam Saran
(C) S. Jaishankar (D) Shashank

142. In China's EAST fusion reactor, EAST stands for—
(A) Experimental Advanced Superconducting Tokamak
(B) Experimental Advanced Solar Tool
(C) Electronically Advanced Scientific Technology
(D) Experimental Artificial Sun Tokamak

143. "A Passage to Hope : Women and International Migration" is—
(A) A book written on the theme of upliftment of women
(B) The theme of the new released 'State of World Population Report-2006' by UNFPA
(C) A documentary film on global migration of women
(D) A report on the status of women in the world

144. How many Indian companies have been included in Forbes 2016 List 'Global 2000' ?
(A) 22 (B) 36
(C) 56 (D) 64

145. The book Guiding Souls : Dialogues on the purpose of life of former President A.P.J. Abdul Kalam has been translated into—
(A) Japanese (B) Chinese
(C) German (D) Portuguese

146. In the budget 2016-17, what is the Income Tax exemption limit ?
(A) ₹ 2 Lac (B) ₹ 2·5 Lac
(C) ₹ 4 Lac (D) None of these

147. Which of the following countries was India's largest trade partner in 2015-16 ?
(A) USA (B) UAE
(C) China (D) UK

148. Who among the following is the present (October 2016) High Commissioner of India to Pakistan ?
(A) Gautam Bambawale
(B) Shiv Shankar Menon
(C) Vijay K. Nambiar
(D) None of the above

Scanned by CamScanner

149. Who among the following is the FIDE World Chess Champion of 2015 ?
(A) Sergey Kanjakin
(B) Veselin Tapalov
(C) Viktor Kramnik
(D) Rustam Kasimdzhanov

150. Which among the following Indian is the first Vice-Chancellor of Westminster University ?
(A) Lord Swaraj Paul
(B) Amartya Sen
(C) Subhramaniam Swami
(D) Sujatha Bose

151. What is RuPay ?
(A) New currency of RBI
(B) Card Payment Network
(C) New Name of Credit Cards of Bank
(D) Credit Card for Farmers

152. Nobel Prize for Economics, 2016 has been awarded to—
(A) Ellen Johnson Sirleaf
(B) Tawakkul Karman
(C) Leymah Gbowee
(D) Oliver Hart and Bengt Holmstrom

153. Ban Ki-Moon from South Korea has been elected as the Secretary-General of UN. He is the—
(A) Seventh Secretary-General
(B) Eighth Secretary-General
(C) Sixth Secretary-General
(D) Fifth Secretary-General

154. The books 'Snow' and 'My Name is Red' have been written by—
(A) Orhun Pamuk (B) Harold Pinter
(C) J.M. Coetzee (D) V.S. Naipaul

155. Which among the following match of the book and its year of receiving the Man Booker Prize is incorrect ?
(A) The Sea-2005
(B) The Gathering-Anne Enright
(C) The Narrow Road to the Deep North-2014
(D) The Inheritance of Loss-2006

156. Which among the following Indian women is not included in the Fortune magazine's list of 50 most powerful Asian business–women in 2016 ?
(A) Chanda Kochar, ICICI Bank
(B) Nita Ambani, Reliance Foundation
(C) Vinita Gupta, Lupin group
(D) Shehnaz Hussain, Shehnaz Hussain Herbals

157. Which among the following has become the first online District Court in India ?
(A) Jodhpur District Court
(B) Ajmer District Court
(C) Jaipur District Court
(D) Jaisalmer District Court

158. UNESCO's Kalinga Prize for the year 2015 has been conferred upon—
(A) Dr. A.P.J. Abdul Kalam
(B) Dr. K. Kasturirangan
(C) Diego Andres Golombek
(D) Dr. Y. S. Rajan

159. The winner of the 2016 Wimbledon Open Tennis men's singles title is—
(A) Andy Murray
(B) Juan Martin Del Potro
(C) Andy Roddick
(D) Novak Djokovic

160. Which among the following has been removed from the UNESCO's list of World Heritage sites in danger ?
(A) Hampi
(B) Manas Wildlife Sanctuary
(C) Kathmandu Valley
(D) Fort and Shalamar Gardens

161. The Sangeet Ratna Award has been instituted in memory of—
(A) Ustad Rashid Ahmed
(B) Ustad Nissar Hussain Khan
(C) Ustad Bismillah Khan
(D) Pt. Ravishankar

162. IBSA is—
(A) India Brazil—South Africa Trilateral Co-operation Forum
(B) India Brazil South Africa Agreement
(C) India Britain South America Agreement
(D) None of the above

Scanned by CamScanner

163. Rajiv Gandhi Khel Ratna Award, 2016 has been won by—
(A) P. V. Sindhu and Sakshi Malik
(B) Deepa Karmakar
(C) Jeetu Rai
(D) All the Above

164. The 18th SAARC Summit was held in—
(A) Kathmandu (B) Addu
(C) Dhaka (D) Kabul

165. Which among the following has become the Third Tiger Reserve of Assam ?
(A) Manas Wildlife Sanctuary
(B) Kaziranga National Park
(C) Nameri National Park
(D) None of the above

166. Who among the following is the most powerful women in the world according to the Forbes magazine's list of 100 most powerful women in 2016 ?
(A) Indra Nooyi
(B) Sonia Gandhi
(C) Angela Merkel
(D) Condoleeza Rice

167. The statue of which among the following literary luminaries has been unveiled at Shanghai ?
(A) Kalidasa (B) Kalhana
(C) Bharavi (D) Vishakha Dutta

168. Shijian–8 is—
(A) India's newly created artificial satellite
(B) China's seed-breeding satellite
(C) Japan's seed-breeding satellite
(D) Russia's remote sensing satellite

169. Who among the following has awarded UNESCO/Guillermo Cano World Press Freedom Award 2016 ?
(A) Maj Chidiac
(B) Raul Rivero
(C) Khadija Ismajilova
(D) Amira Hass

170. Which among the following tennis players has recently bid his retirement ?
(A) Andre Agassi
(B) Roger Federer
(C) Carlos Moya
(D) Andy Raddick

171. Which of the following team has won the ICC World Cup cricket 2015 ?
(A) Pakistan (B) Sri Lanka
(C) Australia (D) England

172. India's longest train service is—
(A) Himsagar Express
(B) Vivek Express
(C) Shatabdi Express
(D) None of the above

173. 'Automotive Mission Plan 2006–16' aims to—
(A) Make India a global hub of automatic electronic devices
(B) Advance India in the field of technology
(C) Make India a global hub of automobiles and auto-components
(D) Advance India in the field of computers

174. Treat, Train, Retain Plan is—
(A) A plan aiming at development of Indian Railway
(B) A plan to retain the high status of Indian Railway
(C) A part of WHO's work to promote universal access to HIV/AIDS services
(D) A plan to launch several new trains in the next two years

175. The 42nd G-7 Summit was held in May 2016 at—
(A) Japan (B) Bishkek
(C) Taskent (D) Shanghai

176. Which company has launched the new car with the name of 'Stingray' ?
(A) Tata
(B) General Motors
(C) Maruti-Suzuki
(D) Mahindra and Mahindra

177. The new software application Sandesh Pathak has been developed for—
(A) Media (B) Farmers
(C) Tourists (D) Blinds

Scanned by CamScanner

178. 31st Olympic Games-2016 were held at—
(A) Athense (B) London
(C) Rio de Jeneiro (D) Beijing

179. Other than Dr. S. Radha Krishnan who among the following elected twice as Vice-President of India—
(A) Hamid Ansari
(B) Krishan Kant
(C) Gopal Swaroop Pathak
(D) None of the above

180. Which country won maximum member of gold medals in Rio de Jenerio Olympics-2016 ?
(A) China (B) U.K.
(C) USA (D) USSR

181. Maximum number of medals in Olympics have been won by—
(A) Michael Phelps (B) Larisa
(C) Paavo Nurmi (D) Mark Spitz

182. 13th President of India in—
(A) Pratibha Devi Singh Patil
(B) A.P.J. Abdul Kalam
(C) Pranab Mukherjee
(D) K.R. Narayanan

183. Who among the following is/are not a part of electoral college for election of President of India ?
(A) Nominated members of Lok Sabha
(B) Nominated members of Rajya Sabha
(C) Nominated members of State Legislative Assembly
(D) All of the above

184. What is the Statutory Liquidity Ratio in October 2016 ?
(A) 20·75% (B) 24%
(C) 25% (D) None of these

Answers with Hints

1. (B) 2. (C) 3. (A) 4. (B) 5. (C)
6. (D) 7. (C) 8. (C) 9. (A) 10. (C)

11. (A) Louise Frechette was the first Deputy Secretary General of UN from March 2, 1998 to March 31, 2006, while Mark Malloch Brown was the second Deputy UN Secretary-General from April 1, 2006 to December 2006. Jan Eliasson is Deputy Secretary General of U. N. since July 1, 2012.

12. (C)

13. (C) Munshi Premchand's novel Nirmala has been translated into English by David Rubin as 'The Second Wife'.

14. (C)

15. (B) A two-day International Satyagraha Centenary Conference was held in New Delhi on January 29-30, 2007. Over 300 delegates from more than 88 countries and 122 civil society groups attended the conference on Peace, Non-Violence and Empowerment–Gandhian Philosophy in 21st Century.

16. (A) 17. (B) 18. (C)

19. (A) The Ministry of HRD has constituted a committee under the Chairmanship of Shri R. K. Raghavan (former Director of CBI) to look into the issue of ragging and suggest means for its prevention in educational institutions.

20. (D) 21. (A)

22. (B) 'THEMIS' is a two years mission of NASA, to study the phenomenon known as northern lights.

The mission comprises a spacecraft carrying five identical satellites.

23. (C) Vodafone, the world's largest GSM mobile telephony network acquired on February 12, 2007 Hutchison Telecommunications International Ltd.'s (HTIL) 67% stake in Hutchison Essar in $ 19 billion (₹ 85,000 crore).

24. (D) 25. (C) 26. (B) 27. (D) 28. (D)
29. (D) 30. (D) 31. (C) 32. (A) 33. (B)
34. (C) 35. (A) 36. (A) 37. (B) 38. (D)
39. (B) 40. (B)

41. (A) NTPC's Vindhyachal Super Thermal Power Station has become the largest power station of India with the installed capacity of 3,260 MW Talcher Super Thermal Power Station was earlier the largest with the 3000 MW installed capacity.

Scanned by CamScanner

42. (D) 43. (B) 44. (B) 45. (B)

46. (C) The XXth Commonwealth Games were held in Glassgo from 24 July to 3 August, 2014.

47. (A) 48. (C) 49. (A) 50. (C)

51. (B) Microsoft founder Bill Gates has been awarded Mexico's highest civilian award, the Aztec Eagle for prominent services to the nation delivered by the Bill and Melinda Gates Foundation.

52. (A)

53. (B) **Agile,** a 360 kg satellite, belongs to Italy. It was launched from Satish Dhawan Space Centre, Sriharikota, between April 18 and April 25, 2007.

54. (A)

55. (D) Sangeet Natak Akademi, the National Academy of Music, Dance and Drama has introduced Ustad Bismillah Khan Yuva Puraskar for the young artists from the year 2006.

56. (A) 57. (C) 58. (C) 59. (D) 60. (C)

61. (A) 62. (C) 63. (A) 64. (B) 65. (C)

66. (C)

67. (A) Saddam was held guilty of the massacre of 148 Shias in Dujail in 1982.

68. (A)

69. (B) Sunita Williams started her space journey on December 9, 2006 in the Space Shuttle Discovery.

70. (C) 71. (A) 72. (D)

73. (C) The South Asia Free Media Association (SAFMA) is the SAARC-recognized body of journalists.

74. (B) 75. (B) 76. (C)

77. (D) France has recently launched this news channel into competition with BBC world and CNN.

78. (A) 79. (A) 80. (A) 81. (C)

82. (A) Margaret Chan was named the new Director-General of World Health Organisation on January 4, 2007. Chan is the first Chinese to head a United Nations body.

83. (B) 84. (B) 85. (B) 86. (C) 87. (B)

88. (A) 89. (C)

90. (A) Koneru Humpy won a gold medal in Chess for India in 15th Asian Games, 2006 at Doha.

91. (A) 92. (A) 93. (B) 94. (B) 95. (B)

96. (B) Sachin hits his 100th century in Mirpur, Dhaka at Bangladesh.

97. (B) Delhi University on November 4, 2006 conferred honorary doctorate degrees on Bollywood Actor Amitabh Bachchan, Delhi Chief Minister Sheila Dixit, Cartoonist R. K. Lakshman and Scientist C.N.R. Rao.

98. (B) 99. (B)

100. (B) Russian chess world champion Vladimir Kramnik was defeated by Deep Fritz, world's leading chess computer in a Man *Vs*. Machine chess match.

101. (A) 102. (D) 103. (A) 104. (D) 105. (D)

106. (C) 107. (D) 108. (D) 109. (B)

110. (B) IRDA stands Insurance Regulatory and Development Authority.

111. (A) 112. (A) 113. (D)

114. (B) Tata Steel on October 20 acquired UK based Anglo-Dutch steel maker Corus group for £ 4·3 billion.

115. (A) The fourth Asian Film Festival featuring 80 films from 22 Asian countries was held in Pune from October 12–20, 2006.

116. (B) Tshwane Declaration was signed in Pretoria on October 2, 2006 between the Indian Prime Minister Manmohan Singh and South African President Thabo Mbeki on international nuclear co-operation.

117. (A)

118. (A) The portal 'Sakshat' launched on October 30, 2006 is a free educational portal of the Ministry of HRD.

119. (A) 120. (D)

121. (B) In the Line of Fire is the Biography of Pakistani President General Pervez Musharraf.

122 (B)

123. (B) Rainbow is Prasar Bharti's FM Channel launched by Ministry of Information and Broadcasting.

Scanned by CamScanner

124. (D)

125. (A) Former Railway Minister Lalu Prasad Yadav on October 4, 2006 flagged-off the 'Garib Rath', first AC train for the poor from Saharsa Station in Bihar.

126. (D) 127. (D) 128. (A) 129. (D) 130. (A)

131. (A) India and US signed a space co-operation agreement into law for completing and operationalising the Global Navigational Satellite System (GLONASS) to end the monopoly of US Global Positioning System (GPS).

132. (A) A Social Security Agreement (SSA) was signed on November 3, 2006 between India and Belgium to strengthen bilateral economic co-operation.

133. (A) Pakistan on November 24, 2006 conferred the Nishan-e-Pakistan, its highest civilian award on Chinese President Hu Jintao for his visionary leadership and splendid contribution in charting the course of China-Pakistan relations in 21st Century.

134. (D) 135. (B) 136. (B) 137. (C) 138. (C)

139. (C) 140. (D) 141. (C)

142. (A) The Chinese EAST fusion reactor, nicknamed 'artificial sun' is an experimental thermo-nuclear fusion reactor, which replicates the energy generation process of the sun.

143. (B) 144. (C)

145. (B) The book was translated by Ji Peng, an India expert with the Chinese Association for International Understanding, and brought out by the Contemporary Publishing House.

146. (B) 147. (C) 148. (A) 149. (A) 150. (A)

151. (B) 152. (D)

153. (B) 5th Secretary General—Javier de Perez de Cuellar from Peru

6th Secretary General—Boutros Boutros Ghali from Egypt

7th Secretary General—Kofi Annan from Ghana

154. (A) Turkish novelist Orhun Pamuk has been awarded the Nobel Prize for Literature in 2006.

155. (C) Vernon God Little-2003.

156. (D) 157. (A) 158. (C) 159. (A)

160. (A) Hampi was removed from the UNESCO's list of World Heritage sites in danger on August 1, 2006.

161. (C) The Uttar Pradesh Government has instituted the Sangeet Ratna Award with a Cash Prize of ₹ 5 lakh in the memory of Shehnai Maestro Ustad Bismillah Khan.

162. (A) Trilateral agreement among India, Brazil and South Africa concerning merchant shipping and other maritime transport related matters has been signed. IBSA is a unique initiative undertaken in the area of south-south economic co-operation.

163. (D) 164. (A) 165. (B) 166. (C) 167. (A)

168. (B) 169. (C) 170. (A) 171. (C) 172. (B)

173. (C) 174. (C) 175. (A) 176. (C) 177. (B)

178. (C) 179. (A) 180. (C) 181. (A) 182. (C)

183. (D) 184. (A)

Scanned by CamScanner

General Science

Scanned by CamScanner

General Science

1. The working of the quartz crystal in the watch is based on the—
   (A) Photoelectric Effect
   (B) Johnson Effect
   (C) Piezo-electric Effect
   (D) Edison Effect

2. If a mouse of over eight times its normal size has been produced by introducing human growth hormonic gene, the technique involved is called—
   (A) Hybridisation
   (B) Genetic Engineering
   (C) Mutation Breeding
   (D) Hormonal Feeding

3. Poison glands of snakes are homologous to—
   (A) Electric organs of fishes
   (B) Stings of rays
   (C) Sebaceous glands of mammals
   (D) Salivary glands of vertebrates

4. Match List-I with List-II and select the correct answer using the codes given below the lists—

List-I (Characteristic)	**List-II (Animal)**
(a) Wingless insect	1. Kiwi
(b) Flightless bird	2. Silverfish
(c) Limbless reptile	3. Turtle
(d) Lungless animal	4. Snake
	5. Fish

Codes :

	(a)	(b)	(c)	(d)
(A)	1	3	2	5
(B)	2	1	4	5
(C)	2	1	3	4
(D)	3	1	4	2

5. Three communicable diseases prevalent in developing countries caused by unsafe drinking water and bad sanitation are—
   (A) Acute diarrhoea, cancer and gout
   (B) Malaria, acute diarrhoea and schistosomiasis
   (C) Onchocerciasis, leukaemia and arthritis
   (D) Rheumatism, malaria and AIDS

6. Which one of the following is used for dating archaeological specimens in woods, bones and shells ?
   (A) Uranium-238 (B) Argon isotope
   (C) Carbon 14 (D) Strontium 90

7. The Government of India has totally banned the export of 'Burnt Coal' (Jhama) because it contains recoverable amount of a metal/element used in transistors. Which one of the following is that element ?
   (A) Phosphorus (B) Germanium
   (C) Silicon (D) Tungsten

8. Which one of the following approaches comes under the category of bio-technology ?
   (A) Use of living organisms or substances obtained from them, in industrial processes
   (B) Modernizing the commercial industries to produce products for use in biological research
   (C) Use of modern technology to investigate biological disorders
   (D) Use of industrial technology to increase the biosphere

9. Which one of the following is correctly matched ?
   (A) Dr. Kurien—Space Science
   (B) Dr. Malcom—Co-operative Movement Adiseshiah
   (C) Dr. Abdul Kalam—Development Economics
   (D) Dr. Pramod Karan Sethi—Jaipur Foot

10. Which one of the following seeds can benefit a patient of diabetes mellitus by normalizing his blood sugar level ?

Scanned by CamScanner

(A) Coriander seeds (B) Mustard seeds
(C) Cumin seeds (D) Fenugreek seeds

11. Scratching eases itching because—
(A) It removes the outer dust in the skin
(B) It kills the germs
(C) It stimulates certain nerves which direct the brain to increase the production of anti-histaminic chemicals
(D) It suppresses the production of enzymes which cause itching

12. Haemophilia is a hereditary disease carried by—
(A) Females and expressed by females
(B) Females and expressed by males
(C) Males and expressed by females
(D) Males and expressed by males

13. When was Chandrayaan-1 launched to study the surface of moon ?
(A) 22 October, 2007
(B) 22 October, 2009
(C) 22 October, 2006
(D) 22 October, 2008

14. The formation of brilliant colours in a thin soap film is a consequence of the phenomena of—
(A) Multiple reflection and interference
(B) Multiple reflection and dispersion
(C) Diffraction and dispersion
(D) Polarisation and interference

15. Camel uses its hump for—
(A) Storing water
(B) Storing fat
(C) Balancing the body during walking in desert sand
(D) Temperature regulation

16. Consider the two statements given below, one labelled as Assertion (A) and the other labelled as Reason (R)
Assertion (A) : A mixture of salt and ice gives temperature below 0°C.
Reason (R) : The salt raises the freezing point of ice.
In the context of the above two statements which one of the following is correct ?
(A) Both A and R are true and R is the correct explanation A
(B) Both A and R are true but R is not the correct explanation of A
(C) A is true but R is false
(D) A is false but R is true

17. Bio films are—
(A) Colour films used by biologists to photograph living organisms
(B) Photomicrographs of micro-organisms from various habitats
(C) Accumulations of micro-organisms at surfaces such as those of a rock, a tooth or an oil droplet
(D) Photographic films made through fermentation processes of certain industrial micro-organisms

18. At what temperature are the readings of a Centigrade and Fahrenheit thermometer the same ?
(A) – 40 (B) 212
(C) 40 (D) 100

19. Which one of the following provides the best estimate of the world's biological diversity ?
(A) Of about ten million species probably alive today, some 20 species are lost everyday, most of them unknown because not more than half a million have been actually identified by scientists
(B) Of about thirty million living species, some 50 are lost everyday, most of them unknown because not more than one million have been actually identified
(C) Of about fortyfive million living species, some 100 are lost everyday, most of them unknown because not more than 1·5 million have been actually identified
(D) Of about seventy five million living species, some 500 are lost everyday, most of them unknown because not more than 3 million have been actually identified

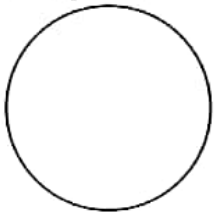
20. In many developing countries, three major causes of death and disease are—
(A) Lack of safe drinking water, increasing use of pesticides and thinning of the Ozone layer
(B) Contaminated food, global warning and industrial chlorofluorocarbons
(C) Polluted air, greenhouse effect and soil erosion
(D) Dirty water, contaminated food and polluted air

Scanned by CamScanner

21. Vinegar is an aqueous solution of—
(A) Oxalic acid (B) Citric acid
(C) Acetic acid (D) Hydrochloric acid

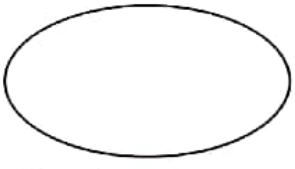
22. When there is depletion of Ozone in the stratosphere, the wavelength of radiation striking the earth's surface will be—
(A) 10^{-10} m (B) 10^{-7} m
(C) 10^{-2} m (D) 100 m

23. Which one of the diagram given below represents most closely the path of geostationary satellite in space ?

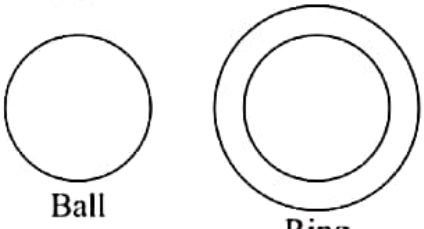
(A)


(B)

(C)

(D)


24. Consider the figures of a metal ball and a metal ring given below—



The metal ball can just pass through the hole of a metal ring formed out of a strip. When the ball is heated it gets stuck but when the metal rings is heated,
(A) The ball can still pass through it because the ring diameter expands on heating
(B) The ball gets stuck because the diameter of the hole decreases on expansion
(C) The ball will still pass through because the hole diameter does not change
(D) The ball will pass through because there is no change in the ring

25. The theory of jumping genes was propounded by—
(A) Gregor Johann Mendel
(B) Thomas Hunt Morgan
(C) Barbara Mc Clintock
(D) Watson and Crick

26. Which one of the following is a "man made" cereal not found in nature ?
(A) Dwarf wheat (B) Hybrid maize
(C) Triticale (D) Soybean

27. The pitch of the voice of woman is in general—
(A) Higher than that of men
(B) Marginally lower than that of men
(C) Much lower than that of men
(D) The same as that of men

28. The heart of human embryo starts beating—
(A) In the first week of its development
(B) In the third week of its development
(C) In the fourth week of its development
(D) In the sixth week of its development

29. If father has blood group A and mother has blood group O, then which one of the following blood groups may be found in their son ?
(A) B (B) AB
(C) O (D) B, AB, or O

30. In an electronic watch, the component corresponding to pendulum of a pendulum clock is a—
(A) Transistor (B) Crystal oscillator
(C) Diode (D) Balance wheel

31. Match List-I with List-II and select the correct answer from the codes given below the list—

List-I (Crops)	**List-II (Crop pests)**
(a) Rice	1. Aphid
(b) Wheat	2. Gundhi Bug
(c) Sugarcane	3. Greasy cutworm
(d) Gram	4. Top shoot borer moth
	5. Bollworm

Codes :

	(a)	(b)	(c)	(d)
(A)	2	3	4	5
(B)	3	1	2	4
(C)	2	1	4	3
(D)	5	4	1	3

Scanned by CamScanner

32. What is the correct sequence of the following in a heart attack ?
   1. Narrowing of the inner orifice of the vessel.
   2. 'plaque' from fibrous tissue high cholestrol.
   3. Inadequate supply of blood and oxygen.
   4. Clots of blood carried into the coronary arteries.

   Choose the answer from the codes given below—

   Codes :

   (A) 1, 2, 3, 4 (B) 2, 4, 1, 3
   (C) 2, 3, 1, 4 (D) 4, 2, 1, 3

33. In the case of a 'Test-Tube Baby'—
   (A) Fertilization takes place inside the test tube
   (B) Development of the baby takes place incide the test-tube
   (C) Fertilization takes place outside the mother's body
   (D) Fertilized egg develops inside the test-tube

34. Which one of the following is in the correct sequential order in which these appeared under simulated primitive earth condition ?
   (A) Methane, hydrogen cyanide, nitriles, aminoacids
   (B) Hydrogen cyanide, methane, nitriles, aminoacids
   (C) Aminoacids, nitriles, hydrogen cyanide, methane
   (D) Nitriles, aminoacids, methane, hydrogen, cyanide

35. Which of the following is/are used as biofertilizers ?
   1. Azolla
   2. Blue-green algae
   3. Alfalfa

   Select the correct answer using the codes given below—

   Codes :

   (A) 2 alone (B) 1 and 2
   (C) 1 and 3 (D) 1, 2 and 3

36. Even though an animals is fed with carbohydrate rich diet, its blood sugar concentration tends to remain constant. This is on account of the fact that in the case of an animal—
   (A) Hormones of pituitary glands control metabolic process
   (B) Hormones of pancreas cause such a condition
   (C) Blood sugar is readily absorbed by liver
   (D) Glucose undergoes autolysis

37. One mole of hydrogen gas burns in excess of oxygen to give 290 KJ of heat. What is the amount of heat produced when 4g of hydrogen gas is burnt under the same conditions ?
   (A) 145 KI (B) 290 KJ
   (C) 580 KJ (D) 1160 KJ

38. If a gas is compressed to half of its original volume at 27°C, to what temperature should it be heated to make it occupy its original volume ?
   (A) 327°C (B) 600° C
   (C) 54°C (D) 300°C

39. Which of the following are characteristics shown by a breast-fed baby when compared to a bottle fed baby ?
   1. It is less obese
   2. It shows greater capacity to resist disease
   3. It gets more vitamins and proteins
   4. Its growth in height is abnormal

   Select the correct answer from the codes given below—

   Codes :

   (A) 1, 2 and 3 (B) 1, 2 and 4
   (C) 1, 3 and 4 (D) 2, 3 and 4

40. The basic reason for the extraordinary sparkle of a suitably cut diamond is that—
   (A) It has a very high transparency
   (B) It has a very high refractive index
   (C) It is very hard
   (D) It has well defined cleavage planes

41. In the balanced dietaries for a day of an adult working man, weights of carbohydrate food and total protein food (both superior and inferior) should be in order of—
   (A) 600 gm and 420 gm respectively
   (B) 600 gm and 600 gm respectively
   (C) 420 gm and 600 gm respectively
   (D) 420 gm and 420 gm respectively

42. Which one of the following is caused by the expression of a recessive gene present on sex chromosome ?

Scanned by CamScanner

(A) Rheumatism
(B) Nervous dystrophy
(C) Muscular dystrophy
(D) Cerebral haemorrhages

43. Which one of the following animals stores water in intestine ?
(A) Moloch (B) Camel
(C) Zebra (D) Uromastix

44. If water pollution continues at its present rate, it will eventually—
(A) Stop water cycle
(B) Prevent precipitation
(C) Make oxygen molecules unavailable to water plants
(D) Make nitrate unavailable to water plants

45. A corked bottle full of water when frozen will break because—
(A) The bottle contracts on freezing
(B) The volume of water decreases on freezing
(C) The volume of water increases on freezing
(D) Glass is a bad conductor of heat

46. The main constituents of pearl are—
(A) Calcium carbonate and magnesium carbonate
(B) Aragonite and conchiolin
(C) Ammonium sulphate and sodium carbonate
(D) Calcium Oxide and ammonium chloride

47. If safe storage is to be ensured, the moisture content of foodgrains at the time of harvesting should not be higher than—
(A) 14% (B) 16%
(C) 18% (D) 20%

48. The half-life of a radioactive element is 5 years. The fraction of the radioactive substance that remains after 20 years is—
(A) $\frac{1}{2}$ (B) $\frac{1}{4}$
(C) $\frac{1}{8}$ (D) $\frac{1}{16}$

49. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R)—

Assertion (A) : A lock of Einstein's hair if scientists could locate it an extract its DNA, could help in producing another Einstein by cloning.

Reason (R) : The DNA extracted from the cell of an embryo at an early stage of development can be transferred to individual eggs which in turn can be implanted into the uterous of a surrogate mother to give birth to an identical offspring.

In the context of the above two statements which one of the following is correct ?
(A) Both A and R are true and R is the correct explanation of A
(B) Both A and R are true but R is not a correct explanation of A
(C) A is true but R is false
(D) A is false but R is true

50. Which one of the following vitamins is considered to be a hormone ?
(A) A (B) B
(C) C (D) D

51. Monazite is an ore of—
(A) Zirconium (B) Thorium
(C) Titanium (D) Iron

52. Galvanised iron sheets are protected from rusting due to the presence of a layer of—
(A) Lead (B) Chromium
(C) Zinc (D) Tin

53. Haemoglobin is dissolved in the plasma of—
(A) Frog (B) Fish
(C) Man (D) Earthworm

54. In recent years there has been some concern over the threat posed by the Mathura Oil Refinery and the Thermal Power Plants to the Taj Mahal in Agra. The scientific basis of any possible damage to the Taj is mainly—
(A) Stratospheric Ozone and the chlorofluorocarbons which destroy it
(B) Acid precipitation and Tropospheric Ozone
(C) Increasing levels of atmospheric CO_2 which produce the greenhouse effect
(D) Ultraviolet radiation (240-260 nanometers wavelength) and the fumes from the heavily polluted Yamuna river

55. Which radioactive pollutant has recently drawn the attention of the public, due to its occurrence in the building material ?

Scanned by CamScanner

(A) Plutonium (B) Thorium
(C) Radon (D) Radium

56. A charged particle is at rest in a region where magnetic field and electric field are parallel. The particle will move in a—
(A) Straight line (B) Circle
(C) Ellipse (D) None of these

57. Water is a good solvent of ionic salts because—
(A) It has a high boiling point
(B) It has a high dipole moment
(C) It has a high specific heat
(D) It has no colour

58. The density of uranium is of the order of—
(A) 10^{17} kg/m^3 (B) 10^{11} kg/m^3
(C) 10^{14} kg/m^3 (D) 10^{20} kg/m^3

59. The colour of an opaque object is due to the colour it—
(A) Absorbs (B) Refracts
(C) Reflects (D) Scatters

60. Phenylketonuria is an example of an inform error of metabolism. This error refers to—
(A) Hormonal overproduction
(B) Atrophy of endocrine glands
(C) Inherited lack of an enzyme
(D) Non-disjunction

61. What is the name of the next generation super computer developed by the Centre for Development of Advanced Computing (C-DAC) ?
(A) Param Anant (B) Param Arjun
(C) Param Aditya (D) Param Vijay

62. In radar system, generation of power at high frequency needs—
(A) High power transformer
(B) High power antenna
(C) High power magnetron
(D) None of these

63. If a man weights 600 N on the earth, then his weight on the moon will be approximately—
(A) 6000 N (B) 60 N
(C) 1000 N (D) 100 N

64. At hills, water boils at a temperature of—
(A) Below 100°C (B) Above 100°C
(C) 100°C (D) None of these

65. Pressure of a gas is 75 cm of Hg at 27°C. The temperature at which the pressure will be doubled, volume being kept constant, is—
(A) 227°C (B) 427°C
(C) 127°C (D) 327°C

66. In which of the following processes the work done is zero ?
(A) Isothermal process
(B) Isochoric process
(C) Adiabatic process
(D) None of these

67. Boyle's law is applicable at—
(A) Constant pressure
(B) Constant temperature and pressure
(C) Constant temperature
(D) Constant pressure but variable temperature

68. For ice, specific latent heat of fusion is—
(A) 80 cal/gm (B) 0·80 cal/gm
(C) 800 cal/gm (D) None of these

69. Choose the correct statement from the following for a pin-hole camera—
(A) Light does not travel in a straight line
(B) Light travels in a straight line
(C) Forms upright, diminished image
(D) Shows the formation of shadows

70. Infra-red radiations—
(A) Obey the law of refraction but not reflection
(B) Obey the law of reflection and refraction
(C) Do not obey the laws of reflection and refraction
(D) None of these

71. The inner back surface of the eye is called—
(A) Pupil (B) Retina
(C) Choroid (D) Cornea

72. Ultrasonic sound has the frequency of—
(A) Above 20,000 vibrations per sec
(B) Below 20,000 vibrations per sec
(C) Below 20 vibrations per sec
(D) None of these

73. Armature of Dynamo is made with—
(A) Ferro-magnetic material
(B) Iron material
(C) Cu-material
(D) Porcelain material

74. In radar system, the transmitting antenna is of—
(A) Fixed type
(B) Rotating type in azimuth
(C) Rotating type in vertical plane
(D) Rotating type in azimuth or vertical plane or both

Scanned by CamScanner

75. Medium wave broadcast is used for—
(A) Regional service
(B) National service
(C) International service
(D) Overseas communication service

76. Cosmic noise is caused by—
(A) Lightning discharges
(B) Solar eruptions
(C) Distant stars
(D) Industrial discharges

77. Hartley oscillators is commonly used in—
(A) Radio current (B) D.C. generator
(C) Camera (D) Transformer

78. In a TV transmitter, the illuminated scene is televised with three TV cameras, each provided with an optical filter to transmit a particular colour. The colours used are—
(A) Red, green and yellow
(B) Red, green and blue
(C) Green, blue and yellow
(D) Green, red and violet

79. Inside a hollow matallic charged sphere—
(A) The electric potential is zero
(B) The electric field is zero
(C) Both (A) and (B) are true
(D) Neither (A) nor (B) is true

80. The meter which is commonly used for servicing TV is known as—
(A) Meggar (B) Multimeter
(C) Frequency meter (D) None of these

81. Which of the following is true regarding velocities of electromagnetic waves and light waves ?
(A) They are equal
(B) The former is greater than the latter
(C) The latter is greater than the former
(D) None of these

82. For what load current is a zener voltage regulator used ?
(A) Small (B) Large
(C) Moderate (D) None of these

83. There are three kinds of losses in transmission lines and these are—
(A) Copper loss, dielectric loss and radiation loss
(B) Copper loss, heat loss and radiation loss
(C) Capacitance loss, inductance loss and heat loss
(D) None of these

84. Type of signalling used in an electronic exchange is—
(A) Pulse signalling (B) Tone signalling
(C) Both (A) and (B) (D) None of these

85. Digital exchange is preferred over electromechanical exchange due to which of the following reasons ?
(A) Transmission and reception noise are much less in digital exchange
(B) It can handle considerable amount of traffic
(C) It can be housed in a smaller space
(D) All of these

86. Diamond is an allotropic form of—
(A) Silicon (B) Carbon
(C) Sulphur (D) Germanium

87. Air is a/an—
(A) Compound (B) Element
(C) Mixture (D) Electrolyte

88. In which of the following activities silicon carbide is used ?
(A) Making cement and glass
(B) Disinfecting water of ponds
(C) Making casts for statues
(D) Cutting very hard substances

89. The element common to all acids is—
(A) Carbon (B) Hydrogen
(C) Oxygen (D) Sulphur

90. Tetraethyl lead is used as—
(A) Mosquito repellent
(B) Pain killer
(C) Fire extinguisher
(D) Petrol additive

91. Which of the following is a non-metal that remains liquid at room temperature ?
(A) Bromine (B) Chlorine
(C) Helium (D) Phosphorous

92. From which minerals is radium obtained ?
(A) Limestone (B) Haematite
(C) Pitchblende (D) Rutile

93. Which of the following is an element ?
(A) Ruby (B) Sapphire
(C) Emerald (D) Diamond

Scanned by CamScanner

94. Sodium metal is kept under—
(A) Water (B) Alcohol
(C) Petrol (D) Kerosene

95. Bromine is—
(A) A colourless gas insoluble is water
(B) A highly inflammable gas
(C) A black solid
(D) A red liquid

96. Permanent hardness of water can be removed by adding—
(A) Potassium permanganate
(B) Chlorine
(C) Bleaching powder
(D) Washing soda

97. Which of the following substances is a bad conductor of electricity but a good conductor of heat ?
(A) Asbestos (B) Celluloid
(C) Purspecks (D) Mica

98. Which of the following pairs does not contain a coinage metal ?
(A) Copper and gold
(B) Silver and gold
(C) Zinc and gold
(D) Copper and silver

99. The filament of an electric bulb is made of—
(A) Iron (B) Nichrome
(C) Tungsten (D) Graphite

100. The two elements that are frequently used for making transistors are—
(A) Boron and aluminium
(B) Silicon and germanium
(C) Iridium and tungsten
(D) Niobium and columbium

101. Which of the following gases is not known as greenhouse gas ?
(A) Carbon dioxide
(B) Methane
(C) Nitrous oxide
(D) Chlorofluorocarbons

102. Match the following—

	Element	Symbol
(a)	Thallium	1. Tm
(b)	Thorium	2. TI
(c)	Thulium	3. Tb
(d)	Terbium	4. Th

Codes :

	(a)	(b)	(c)	(d)
(A)	2	4	3	1
(B)	2	4	1	3
(C)	4	2	1	3
(D)	1	3	2	4

103. Consider the following statements regarding graphite—
1. It is an allotrope of carbon
2. It is a good conductor of heat and electricity
3. It can be artificially produced

Of these statements,
(A) 1, 2 and 3 are correct
(B) 1 and 2 are correct
(C) 1 and 3 are correct
(D) 2 and 3 are correct

104. Chemical formula for water glass is—
(A) Na_2SiO_3 (B) Al_2O_3
(C) $NaAlO_2$ (D) $CaSiO_3$

105. Heavy water is—
(A) Tritium oxide (B) Deuterium oxide
(C) Rain-water (D) Water at–4°C

106. The gases used in different types of welding would include—
(A) Oxygen and hydrogen
(B) Oxygen, acetylene and argon
(C) Oxygen and acetylene
(D) Oxygen, hydrogen, acetylene and nitrogen

107. Potassium nitrate is used in—
(A) Salt (B) Glass
(C) Fertiliser (D) Medicine

108. In which type of rocks are metals like gold and copper mostly found ?
(A) Old igneous
(B) Old sedimentary
(C) Old metamorphic
(D) New metamorphic

109. Which of the following metals remains in liquid form under normal conditions ?
(A) Uranium (B) Radium
(C) Zinc (D) Mercury

Scanned by CamScanner

110. Marsh gas is—
(A) Hydrogen (B) Nitrogen
(C) Methane (D) Ethane

111. Carbon, diamond and graphite are together called—
(A) Isomers (B) Allotropes
(C) Isomorphs (D) Isotopes

112. Galvanised iron sheets have a coating of—
(A) Tin (B) Lead
(C) Zinc (D) Chromium

113. Among the various allotropes of carbon—
(A) Diamond is the hardest, lamp black is the softest
(B) Diamond is the hardest, coke is the softest
(C) Coke is the hardest, graphite is the softest
(D) Diamond is the hardest, graphite is the softest

114. Liquefied Petroleum gas consists of mainly—
(A) Methane, ethane and hexane
(B) Ethane, hexane and nonane
(C) Methane, butane and propane
(D) Methane, hexane and nonane

115. Which of the following is not an isotope of hydrogen ?
(A) Protium (B) Yttrium
(C) Deuterium (D) Tritium

116. Of the metals, which one pollutes the air of a big city ?
(A) Copper (B) Chromium
(C) Lead (D) Cadmium

117. Which of the following is not correctly matched ?

	Element		Symbol
(A)	Antimony	—	Sb
(B)	Tin	—	Ti
(C)	Tungsten	—	W
(D)	Rhenium	—	Re

118. Water is a compound because—
(A) It exists as a solid, a liquid or a gas
(B) It contains hydrogen and oxygen
(C) It contains two different elements joined by chemical bonds
(D) It cannot be split up into simpler substances by chemical means

119. Potassium permanganate is used for purifying drinking water, because—
(A) It dissolves the impurities of water
(B) It is a sterilising agent
(C) It is an oxidising agent
(D) It is a reducing agent

120. When an iron nail gets rusted, iron oxide is formed ?
(A) Without any change in the weight of the nail
(B) With increase in the weight of the nail
(C) With decrease in the weight of the nail
(D) Without any change in colour or weight of the nail

121. Match the following—

	Elements	Nature of elements
(a)	Sodium	1. Gas
(b)	Phosphorus	2. Halogen
(c)	Iodine	3. Alkali metal
(d)	Radon	4. Transition metal
		5. Non-metal

Codes :

	(a)	(b)	(c)	(d)
(A)	2	5	3	1
(B)	3	5	2	1
(C)	4	2	3	5
(D)	5	3	4	2

122. The hardest substance available on earth is—
(A) Platinum (B) Coal
(C) Diamond (D) Gold

123. Actinides are the elements with atomic numbers from—
(A) 36 to 43 (B) 89 to 103
(C) 97 to 114 (D) 101 to 115

124. Which of the following pairs is not correctly matched ?

	Mineral		Industrial use
(A)	Zircon	—	Nuclear reactors
(B)	Manganese ore	—	Dry battery
(C)	Mica	—	Bleaching powder
(D)	Bauxite	—	Tanning

125. The average salinity of sea water is—
(A) 20‰ (B) 25‰
(C) 30‰ (D) 35‰

126. The chemical (ethylmerceptan) added to the otherwise odourless LPG cooking gas for

Scanned by CamScanner

imparting a detectable smell to the gas is a compound of—

(A) Sulphur (B) Fluorine
(C) Chlorine (D) Bromine

127. The inert gas which is substituted for nitrogen in the air, used by deep sea divers for breathing, is—

(A) Helium (B) Argon
(C) Krypton (D) Xenon

128. The group of metals Fe, Co, Ni may be best called as—

(A) Alkaline metals
(B) Rare metals
(C) Main group metals
(D) Transition metals

129. Amalgams are—

(A) Alloys which contain carbon
(B) Alloys which have great resistance to abrasion
(C) Alloys which contain mercury as one of the contents
(D) Highly coloured alloys

130. Match the following—

Chemicals	Uses
(a) Zeolite	1. Glass cutting
(b) Plaster of Paris	2. Laundary work
(c) Ultramarines	3. Softening of water
(d) Carborundum	4. Glazing porcelain casting

Codes :

	(a)	(b)	(c)	(d)
(A)	3	2	1	4
(B)	3	5	2	1
(C)	5	1	4	3
(D)	5	4	3	2

131. The property of a substance to absorb moisture from the air on exposure is called—

(A) Osmosis (B) Dessication
(C) Efflorescence (D) Deliquescence

132. Brass gets discoloured in air because of the presence of which of the following gases in air ?

(A) Carbon dioxide
(B) Oxygen
(C) Hydrogen sulphide
(D) Nitrogen

133. Quartz crystals normally used in quartz clocks etc. is chemically—

(A) Sodium silicate
(B) Germanium oxide
(C) Silicon dioxide
(D) A mixture of B and C

134. Bell metal is an alloy of—

(A) Brass and nickel
(B) Zinc and copper
(C) Tin and copper
(D) Nickel and copper

135. Which of the following are the ingredients of gun metal ?

(A) Iron, Tin
(B) Copper, Tin
(C) Iron, Brass, Tin
(D) Iron, Zinc, Titanium

136. The variety of coal in which the deposit contains recognisable traces of the original plant meterial is—

(A) Anthracite (B) Lignite
(C) Peat (D) Bitumen

137. In fireworks, the green flame is produced because of—

(A) Mercury (B) Sodium
(C) Potassium (D) Barium

138. Which of the following was to be discovered first in the chromosphere of the Sun ?

(A) Xenon (B) Helium
(C) Neon (D) Krypton

139. Which among the following is a positively charged particles emitted by a radioactive element ?

(A) Alpha ray (B) Beta ray
(C) Gamma ray (D) Cathode ray

140. Nuclear fission is caused by the impact of—

(A) Proton (B) Electron
(C) Neutron (D) None of these

141. What is the correct ascending order for frequencies of the following radiations ?

1. Visible 2. X-rays
3. Ultraviolet 4. Radio waves

(A) 1, 3, 2, 4 (B) 3, 2, 4, 1
(C) 4, 1, 3, 2 (D) 4, 3, 1, 2

142. How many colours the sunlight spectrum has ?

(A) Five (B) Three
(C) Seven (D) Four

Scanned by CamScanner

143. In atomic explosion, enormous energy is released which is due to the—
(A) Conversion of neutrons into protons
(B) Conversion of chemical energy into heat energy
(C) Conversion of mechanical energy into nuclear energy
(D) Conversion of mass into energy

144. The age of most ancient geological formation is estimated by—
(A) Potassium—Argon method
(B) Ra-Si method
(C) C^{14} method
(D) Uranium—Lead method

145. What are soaps ?
(A) Salts of silicates
(B) Esters of heavy fatty acids
(C) Sodium or potassium salts of heavier fatty acids
(D) Mixture of glycerol and alcohols

146. Rayon is chemically—
(A) Glucose (B) Amylose
(C) Cellulose (D) Pectin

147. Which type of fire extinguisher is used for petroleum fire ?
(A) Foam type (B) Soda acid type
(C) Powder type (D) None of these

148. The type of glass used in making lenses and prism is—
(A) Soft glass (B) Pyrex glass
(C) Jena glass (D) Flint glass

149. What is condensation ?
(A) Change of gas into solid
(B) Change of solid into liquid
(C) Change of vapour into liquid
(D) Change of heat energy into cooling energy

150. A substance which changes readily into vapour without heating is called—
(A) Efflorescent (B) Synthetic
(C) Volatile (D) Effervescent

151. In which of the following processes light energy is converted into chemical energy ?
(A) Respiration (B) Fermentation
(C) Photosynthesis (D) Photorespiration

152. Match the following—

	Process	Changes
(a)	Evaporation	1. Liquid into gas
(b)	Sublimation	2. Gas into liquid
(c)	Freezing	3. Solid into gas
(d)	Melting	4. Solid into liquid
		5. Liquid into solid

Codes :

	(a)	(b)	(c)	(d)
(A)	1	2	4	3
(B)	3	1	2	4
(C)	2	1	4	3
(D)	2	1	3	4

153. Match the following—

	Quantity	Unit
(a)	Electric force between two charged bodies	1. Volt
(b)	Electric charge	2. Newton
(c)	Electric potential	3. Farad
(d)	Electric capacity	4. Coulomb

Codes :

	(a)	(b)	(c)	(d)
(A)	4	2	3	1
(B)	3	1	2	4
(C)	2	4	1	3
(D)	1	3	4	2

154. 'Bar' is the unit of—
(A) Heat
(B) Temperature
(C) Current
(D) Atmospheric pressure

155. What is the unit for measuring the pitch or frequency of sound ?
(A) Coulomb (B) Hum
(C) Decibel (D) Hertz

156. Kilohertz is a unit which measures—
(A) Electric resistance
(B) Power used by a current of one ampere
(C) Electromagnetic radio wave frequencies
(D) None of these

157. Match the following—

(a)	Resistance	1. Ampere
(b)	Current	2. Newton
(c)	Force	3. Watt
(d)	Power	4. Ohm

Scanned by CamScanner

Codes :

	(a)	(b)	(c)	(d)
(A)	1	4	3	2
(B)	4	1	2	3
(C)	1	2	4	3
(D)	4	2	3	1

158. An ordinary tubelight used for lighting purpose contains—
(A) Fluorescent material and an inert gas
(B) One filament, reflective and mercury vapour
(C) Fluorescent material and mercury vapour
(D) Two filaments, fluorescent material and mercury vapour

159. The term 'Black Box' is more commonly used in relation to which of the following ?
(A) It is a box in which high grade uranium is kept to prevent radiation
(B) It is a time capsule in which records of important events are kept to be opened at a later date
(C) It is a flight recorder in an aeroplane
(D) None of these

160. The lightning conductors used in building, protects the building by—
(A) Dissipating the electric charge away from the building
(B) Conducting the lightning safely to the ground
(C) Absorbing the electric charge
(D) None of these

161. Match the following—

(a) Petrol engine	1. Compression
(b) Diesel engine	2. Spark plug
(c) Ship	3. Turboprop
(d) Jet aircraft	4. Propeller

Codes :

	(a)	(b)	(c)	(d)
(A)	1	2	3	4
(B)	2	1	4	3
(C)	1	2	4	3
(D)	2	1	3	4

162. The hydraulic brakes used in automobiles is a direct application of—
(A) Archimedes Principle
(B) Toricellian law
(C) Bernoulli's theorem
(D) Pascal's law

163. Which of the following statements is correct ?
(A) Dynamo converts electrical energy into heat energy and electric motor converts mechanical energy into electrical energy
(B) Dynamo converts mechanical energy into electrical energy and electric motor converts electrical energy into mechanical energy
(C) Both dynamo and electric motor convert electrical energy into mechanical energy
(D) Both dynamo and electric motor convert mechanical energy into electrical energy

164. The tape of a taperecorder is coated with—
(A) Zinc oxide
(B) Copper sulphate
(C) Mica
(D) Ferromagnetic powder

165. When a coil is rotated in magnetic field, induced current is generated in the coil. This principle is used in making—
(A) Electromagnet
(B) Electric motor
(C) Electric generator
(D) Electric watt meter

166. In an ordinary dry cell, the electrolyte is—
(A) Sulphuric acid
(B) Manganese dioxide
(C) Ammonium chloride
(D) Zinc

167. The mixed oxide fuel is used for which of the following ?
(A) Nuclear Reactors
(B) Aeroplanes
(C) Cryogenic Engines
(D) PSLV rockets

168. Which of the following takes place when the subject speaks untruth while being tested by the polygraph instrument ?
1. His blood pressure goes up
2. His pulse quickens
3. His skin darkens
4. He sneezes

(A) 1 and 2 (B) 3 and 4
(C) 1, 2 and 3 (D) 2, 3 and 4

Scanned by CamScanner

169. What is the function of a microprocessors in a computer ?
(A) It allows the keyboard to write on the computer
(B) It allows the outputs to be taken from a computer
(C) It performs all the functions of a CPU (Central Processing Unit)
(D) None of these

170. 'Teletext' means—
(A) The process of converting black and white TV sets into coloured ones
(B) Flashing the text of the message on the telex machine
(C) Flashing of telephone conversation on TV screen
(D) Flashing of the text of news and information on the TV screen

171. Which of the following statements about a refrigerator is/are correct ?
1. It converts electrical energy into heat energy.
2. It converts electrical energy into mechanical energy
3. It transfer heat from a high temperature to a low temperature
4. It transfers heat from a low temperature to a high temperature
(A) 1 and 3 (B) 2 and 3
(C) 1 and 4 (D) 4 only

172. Which of the following is the fastest storing input/output device in a computer ?
(A) Magnetic floppy disc
(B) Tetetype writer
(C) Visual Display unit
(D) None of these

173. The following processes take place during the launching of a rocket—
1. Pocket fuel is burnt
2. Gases are produced
3. Rocket moves in the forward direction
4. Gases come out with momentum in backward direction
The correct sequential order in which the above process occur is
(A) 1, 2, 3, 4 (B) 1, 3, 2, 4
(C) 1, 2, 4, 3 (D) 1, 3, 4, 2

174. Which of the following pairs is/are correctly matched ?

Gland	Hormones
1. Pituitary	Follicle stimulating hormone
2. Thyroid	Somatotropic hormone
3. Parathyroid	Thyroxine

(A) 1 only (B) 1 and 2
(C) 3 only (D) 1, 2 and 3

175. In mammals, the part of the brain that has reached highest level of development and that has enabled humans to grow their own crop, invent machines, develop language and art is—
(A) Cerebrum
(B) Cerebellum
(C) Medulla Oblongata
(D) None of these

176. A person will have brown eyes, blue eyes or black eyes depending upon the particular pigment present in the—
(A) Pupil (B) Cornea
(C) Iris (D) Choroid

177. What is the maximum limit of sound intensity in decibel units beyond which a person cannot hear ?
(A) 50 (B) 70
(C) 85 (D) 95

178. Biological death of a patient means death of tissues of the—
(A) Kidney (B) Heart
(C) Lungs (D) Brain

179. During the development of an embryo, the formation of brain marks the beginning of organ formation. Eye in a vertebrate develops from midbrain. If after the formation of brain, the midbrain is destroyed , then what will be the resultant effect ?
(A) Total failure of eye formation
(B) Development of a single eye
(C) Defective development of eyes
(D) Absence of vision in the eyes

180. Clotting of blood vessels is called—
(A) Thrombosis (B) Rheumatism
(C) Agglutinisation (D) Fibrosis

181. Blood group of an individual is controlled by—
(A) Shape of RBC (B) Shape of WBC
(C) Genes (D) Haemoglobin

Scanned by CamScanner

182. If one chews an unsweetened chapati for a short time, distinctly sweetish taste becomes noticeable because—
(A) Carbohydrate is converted into sugar in the mouth
(B) Protein is converted into sugar in the mouth
(C) Fat is converted into sugar in the mouth
(D) Vitamins are converted into sugar in the mouth

183. Red-green colour blindness in man is known as—
(A) Protanopia (B) Deuteranopia
(C) Both A and B (D) Marfan's syndrome

184. For transfusion, the 'O' blood group of a donor can be accepted by a person having blood group—
(A) A (B) B
(C) AB (D) All of these

185. The most important function of perspiration is to—
(A) Lubricate the skin
(B) Get rid of the body wastes
(C) Regulate body temperature
(D) Regulate body wastes

186. Human body needs a constant supply of proteins to survive. The first part of the digestive system to begin digesting proteins is—
(A) Mouth (B) Stomach
(C) Small intestine (D) Large intestine

187. In human body, the leg bones are—
(A) Humerus and Femur
(B) Fibula and Tibia
(C) Fibula and Ulna
(D) Tibia and Radius

188. The organ in the body which accumulates iodine is—
(A) Pituitary gland (B) Thymus
(C) Thyroid gland (D) Spleen

189. Life of RBC in human blood is of—
(A) 30 days (B) 60 days
(C) 120 days (D) 15 hours

190. Which sugar is present in considerable amount in the blood ?
(A) Glucose (B) Fructose
(C) Galactose (D) Sucrose

191. The maximum temperature the human skin can tolerate without getting blisters is—
(A) 40°C (B) 60°C
(C) 80°C (D) 100°C

192. How many teeth are known as milk teeth in human beings ?
(A) 4 (B) 12
(C) 20 (D) 28

193. If father and mother are possessing Rh + ve and Rh – ve respectively, their children will have the blood group with—
(A) RH +ve (B) Rh –ve
(C) Rh neutral (D) None of these

194. About ..... of the total calcium present in the human body is in the blood.
(A) 99% (B) 70%
(C) 5% (D) 1%

195. The gland, which in relation to body size is largest at birth and then gradually shrinks after puberty is—
(A) Thyroid (B) Pituitary
(C) Thymus (D) Adrenal

196. The largest cell in the human body is—
(A) Nerve cell (B) Muscle cell
(C) Liver cell (D) Kidney cell

197. Insect form the largest class of animals living on land and sea.
They are grouped into—
(A) 22 orders (B) 26 orders
(C) 29 orders (D) 32 orders

198. Which of the following has the smallest egg ?
(A) Ostrich (B) Humming bird
(C) Pigeon (D) Homo sapiens

199. An ant can see the object all around it due to the presence of—
(A) Simple eyes
(B) Eyes over the head
(C) Well developed eyes
(D) Compound eyes

200. Hormones are normally absent in—
(A) Rat (B) Monkey
(C) Bacteria (D) Cat

201. Where is Satish Dhawan Space Centre situated ?
(A) Thumba (B) Sriharikota
(C) Ahmedabad (D) None of the above

Scanned by CamScanner

Answers with Hints

1. (C)	2. (B)	3. (D)	4. (B)	5. (B)
6. (C)	7. (B)	8. (A)	9. (D)	10. (D)
11. (C)	12. (B)	13. (D)	14. (A)	15. (B)
16. (C)	17. (C)	18. (A)	19. (C)	20. (D)
21. (C)	22. (B)	23. (D)	24. (A)	25. (C)
26. (C)	27. (A)	28. (D)	29. (C)	30. (B)
31. (C)	32. (B)	33. (C)	34. (A)	35. (B)
36. (B)	37. (C)	38. (A)	39. (A)	40. (B)
41. (A)	42. (C)	43. (B)	44. (C)	45. (C)
46. (A)	47. (A)	48. (D)	49. (D)	50. (D)
51. (B)	52. (C)	53. (D)	54. (B)	55. (C)
56. (A)	57. (B)	58. (D)	59. (C)	60. (C)
61. (A)	62. (C)			

63. (D) g on moon = $\frac{1}{6}$ of g on earth.

64. (A)	65. (D)	66. (B)	67. (C)	68. (A)
69. (B)	70. (B)	71. (B)	72. (A)	73. (B)
74. (B)	75. (A)	76. (C)	77. (A)	78. (B)
79. (B)	80. (B)	81. (A)	82. (B)	83. (C)
84. (C)	85. (D)	86. (B)	87. (C)	88. (D)
89. (B)	90. (D)	91. (A)	92. (C)	93. (D)
94. (D)	95. (D)	96. (D)	97. (D)	98. (C)
99. (C)	100. (B)	101. (C)	102. (B)	103. (A)
104. (A)	105. (B)	106. (C)	107. (D)	108. (A)
109. (D)	110. (C)	111. (B)	112. (C)	113. (D)
114. (C)	115. (B)	116. (C)	117. (B)	118. (C)
119. (C)	120. (B)	121. (B)	122. (C)	123. (B)
124. (C)	125. (D)	126. (A)	127. (A)	128. (D)
129. (C)	130. (B)	131. (D)	132. (C)	133. (C)
134. (C)	135. (B)	136. (C)	137. (D)	138. (B)
139. (A)	140. (C)	141. (C)	142. (C)	143. (D)
144. (C)	145. (C)	146. (C)	147. (C)	148. (D)
149. (C)	150. (C)	151. (C)	152. (D)	153. (C)
154. (D)	155. (C)	156. (C)	157. (B)	158. (D)
159. (C)	160. (B)	161. (B)	162. (D)	163. (B)
164. (D)	165. (C)	166. (C)	167. (C)	168. (A)
169. (C)	170. (D)	171. (C)	172. (A)	173. (C)
174. (A)	175. (A)	176. (C)	177. (C)	178. (D)
179. (C)	180. (A)	181. (C)	182. (A)	183. (A)
184. (D)	185. (B)	186. (B)	187. (B)	188. (C)
189. (C)	190. (A)	191. (A)	192. (C)	193. (A)
194. (D)	195. (C)	196. (A)	197. (B)	198. (D)
199. (D)	200. (C)	201. (B)		

Scanned by CamScanner

NUMERICAL APTITUDE TEST

Scanned by CamScanner

FOUR FUNDAMENTAL RULES

Four Fundamental Rules (+, –, ×, ÷)

Even Numbers—The number which is divisible by 2 are called even numbers. Such as 2, 4, 6, 8, 10 etc.

Odd Numbers—The numbers which are not divisible by 2 are called odd numbers. Such as 1, 3, 5, 7, 9, 11, 13, 15 etc.

Prime Numbers—A number, other than 1 is called prime, if it is divisible by 1 and itself only. Such as 2, 3, 5, 7, 11, 13, 17, 19, 23 etc.

Composite Numbers—A number, other than 1, which is not prime, is a composite number. Such as 4, 6, 8, 9, 10 etc.

Whole Number—All positive, negative and including zero (0) numbers are called whole number. Such as 0, 1, 2, 3, –1, –2, –3, – 4, etc.

Natural Number—It is used to count a thing. Such as 1, 2, 3, 4, 5, 6,..... **Zero (0) is not a positive integer or natural number.**

Rational Number—A number is said to be a rational number which can be written in the $\frac{p}{q}$ form, where p and q be a integer but Q be not a zero. Such as $\frac{3}{5}, \frac{-3}{5}, \frac{0}{4}, \frac{2}{-5}, \frac{-3}{-7}$.

Irrational Number—The number which can not be expressed in the $\frac{p}{q}$ form is called a irrational number, where p and q are a integer. ($q \neq 0$). Such as $\sqrt{5}, \sqrt{2}, 5+\sqrt{3}$, π etc.

Real Number—The numbers which are either rational or irrational, are called real number. Real numbers can shown on the numbers line.

Rule 1 : Fraction Addition/Subtraction

If 'A' be a any whole number and $\frac{x}{y}$ be a any fraction in which $x < y$, then $A + \frac{x}{y} = A\frac{x}{y}$.

Example 1. $9 + \frac{4}{3} = ?$

Solution : Applying given formula, we have $9 + \frac{4}{3} = 9\frac{4}{3}$.

Example 2. $2019 + \frac{119}{213} = ?$

Solution : Applying given formula, we have $2019 + \frac{119}{213} = 2019\frac{119}{213}$.

Rule 2 :

If A, B and C be a whole number and $\frac{x}{y}$, $\frac{m}{n}$ and $\frac{p}{q}$ be any fraction, then

$$A\frac{x}{y} + B\frac{m}{n} + C\frac{p}{q} = (A + B + C) + \left(\frac{x}{y} + \frac{m}{n} + \frac{p}{q}\right).$$

Example 3. $10\frac{2}{5} + 23\frac{11}{20} + 13\frac{7}{10} = ?$

Solution : Applying the above formula, we have,

$$? = (10 + 23 + 13) + \left(\frac{2}{5} + \frac{11}{20} + \frac{7}{10}\right)$$

$$= 46 + \left(\frac{8 + 11 + 14}{20}\right)$$

$$= 46 + \frac{33}{20} = 46 + 1\frac{13}{20}$$

$$= (46 + 1) + \frac{13}{20}$$

$$= 47\frac{13}{20}.$$

Rule 3 :

$$A - \frac{x}{y} = (A - 1)\frac{(y - x)}{y} \text{ where } x < y.$$

Example 4. $12 - \frac{5}{8} = ?$

Scanned by CamScanner

Solution : Applying the above formula, we have, $12 - \frac{5}{8} = ?$

$$\therefore \quad ? = (12-1)\frac{(8-5)}{8}$$

$$= 11\frac{3}{8}.$$

Rule 4 :

$$A\frac{x}{y} - B\frac{m}{n} + C\frac{p}{q} - D\frac{u}{v}$$

$$= (A - B + C - D) + \left(\frac{x}{y} - \frac{x}{n} + \frac{p}{q} - \frac{u}{v}\right).$$

Example 5. $10\frac{3}{4} - 8\frac{5}{8} + 12\frac{1}{3} - 5\frac{1}{4} = ?$

Solution : Applying the above formula, we have, $? = (10 - 8 + 12 - 5) + \left(\frac{3}{4} - \frac{5}{8} + \frac{1}{3} - \frac{1}{4}\right)$

$$= 9 + \frac{(18 - 15 + 8 - 6)}{24}$$

$$= 9 + \frac{5}{24}$$

$$= 9\frac{5}{24}.$$

Rule 5 : When $x > y$, then

$$A - \frac{x}{y} = A - B\frac{x'}{y} = (A - B) - \frac{x'}{y}$$

$$= (A - B - 1)\left(\frac{y - x'}{y}\right).$$

Example 6. $2941 - \frac{561}{52} = ?$

Solution : $? = 2941 - 10\frac{41}{52}$

$$= (2941 - 10) - \frac{41}{52}$$

$$= (2931 - 1)\frac{52 - 41}{52}$$

$$= 2930\frac{11}{52}.$$

Example 7. What is the product of the greatest number of five digits and smallest number of four digits ?

Solution : The greatest number of five digits

$= 99999$

and the smallest number of four digits

$= 1000$

$\therefore$ Product $= 99999 \times 1000$

$= 99999000.$

Example 8. If 5 dozen bananas cost Rs. 9, what is the cost of 20 bananas ?

Solution : 5 dozen bananas $= 5 \times 12$

$= 60$ bananas

$\because$ Cost Price of 60 bananas $=$ Rs. 9

$\therefore$ Cost Price of 1 banana $= \frac{9}{60}$

$\therefore$ Cost Price of 20 bananas $= \frac{9 \times 20}{60}$

$=$ Rs. 3.

Example 9. Ram is older than Shyam by 5 years and Shyam is younger than Mohan by 3 years. If Ram is 30 years old, what is the age of Mohan ?

Solution : Age of Ram $=$ 30 years

$\therefore$ Age of Shyam $= 30 - 5 = 25$ years

$\therefore$ Age of Mohan $= 25 + 3 = 28$ years

Example 10. Total of daily wages of Sandeep, Naresh and Suresh is Rs. 200. If total of daily wages of Sandeep and Suresh is Rs. 150 and that of Naresh and Suresh is Rs. 100, what is the daily wages of Suresh ?

Solution : Total of daily wages of Sandeep, Naresh and Suresh $=$ Rs. 200

and total of daily wages of Sandeep and Suresh $=$ Rs. 150

$\therefore$ Daily wages of Naresh $= 200 - 150$

$=$ Rs. 50

But the total of daily wages of Naresh and Suresh $=$ Rs. 100

$\therefore$ Daily wages of Suresh $= 100 - 50$

$=$ Rs. 50.

EXERCISE 1

In the following questions, what will come in place of question mark (?).

1. $8102 - ? + 7103 = 3986 + 2879$

   (A) 9140 (B) 8140

   (C) 8340 (D) 7340

   (E) None of these

Scanned by CamScanner

(A) 6918 (B) 6928
(C) 7928 (D) 6828
(E) None of these

3. $\frac{16}{28} \div \frac{30}{42} \times \frac{7}{15} = ?$
(A) $\frac{84}{105}$ (B) $\frac{84}{215}$
(C) $\frac{84}{225}$ (D) $\frac{64}{225}$
(E) None of these

4. $\frac{\sqrt{169}}{13} \times \frac{14}{\sqrt{196}} = ?$
(A) $\frac{1}{12}$ (B) 2
(C) 1 (D) $1\frac{1}{14}$
(E) None of these

5. $\frac{\sqrt{64}}{\sqrt{225}} \div \frac{\sqrt{81}}{\sqrt{49}} \times \frac{3}{7} = ?$
(A) $\frac{7}{45}$ (B) $\frac{8}{45}$
(C) $\frac{11}{45}$ (D) $\frac{6}{45}$
(E) None of these

6. 7854 + 286 + 8514 + 78 = ?
(A) 15732 (B) 14732
(C) 16832 (D) 16732
(E) None of these

7. 5826 + 2694 + ? + 384 = 12437
(A) 2533 (B) 1533
(C) 3533 (D) 4533
(E) None of these

8. $\frac{?}{16} = \frac{400}{?}$
(A) 400 (B) 6400
(C) 80 (D) 40
(E) None of these

9. $\frac{(8)^2 \times (15)^2}{(40)} = ?$
(A) 720 (B) 360
(C) 180 (D) 260
(E) None of these

10. $81 \div 27 \times 4 = ?$
(A) $\frac{1}{6}$ (B) $\frac{1}{9}$
(C) $\frac{1}{8}$ (D) $\frac{7}{8}$
(E) None of these

11. 6123 – 3654 – 587 = 2354 – 698 + ?
(A) 216 (B) 220
(C) 222 (D) 226
(E) None of these

12. $16\sqrt{?} + 12\sqrt{?} = 252$
(A) 36 (B) 49
(C) 81 (D) 125
(E) None of these

13. 9278 – ? = 5318
(A) 2580 (B) 3160
(C) 3960 (D) 2960
(E) None of these

14. 3843 + ? + 3879 = 869 + 2943
(A) 10452 (B) 10522
(C) 11522 (D) 11011
(E) None of these

15. $\frac{15}{20} \div \frac{4}{5} \times \frac{2}{3} - \frac{1}{2} = ?$
(A) $\frac{1}{8}$ (B) $\frac{3}{8}$
(C) $\frac{13}{15}$ (D) $\frac{2}{11}$
(E) None of these

16. $\frac{7}{9} \times \frac{27}{35} \div \frac{18}{70} = ?$
(A) $\frac{5}{7}$ (B) $\frac{8}{3}$
(C) $\frac{7}{3}$ (D) $\frac{13}{7}$
(E) None of these

17. $\frac{(16)^2 \times (9)^3}{24}$ —
(A) 7676 (B) 8756
(C) 6776 (D) 3676
(E) None of these

Scanned by CamScanner

18. $\frac{?}{36} = \frac{48}{\sqrt{?}}$

(A) 169 (B) 144
(C) 196 (D) 225
(E) None of these

19. $5000 \times (?)^2 = 2312$

(A) 0.46 (B) 0.68
(C) 4.68 (D) 6.68
(E) None of these

20. $\frac{12 \times 360 + 700}{6 \times 120} = ?$

(A) 765 (B) 706
(C) $\frac{502}{72}$ (D) $\frac{102}{35}$
(E) None of these

21. $\frac{7 \times 340 - 38 \times 16}{205 - 4}$

(A) 8.82 (B) 9
(C) 10 (D) 12
(E) None of these

22. $\frac{810 - 13 \times 17}{589}$

(A) 2 (B) 3
(C) 4 (D) 1
(E) None of these

23. $8432 \div ? = 527$

(A) 8 (B) 6
(C) 26 (D) 16
(E) None of these

24. $7416 \div 18 = ?$

(A) 214 (B) 412
(C) 402 (D) 124
(E) None of these

25. $6735 \div ? = 449$

(A) 17 (B) 25
(C) 5 (D) 35
(E) None of these

26. $\frac{88}{?} = \frac{?}{11 \times 2}$

(A) 44 (B) 45
(C) 22 (D) 11
(E) None of these

27. $\frac{64800}{50} + ? = 1380 - 17$

(A) 66 (B) 67
(C) 68 (D) 69
(E) None of these

28. $7203 + 205 \div 41 = ?$

(A) 7408/41 (B) 7108
(C) 7208 (D) 7218
(E) None of these

29. $405 + 307 \times 4 = ?$

(A) 1603 (B) 1633
(C) 1630 (D) 2848
(E) None of these

30. $1516 - 201 \times 3 \div 9 = ?$

(A) 1448 (B) 1450
(C) 1048 (D) 1548
(E) None of these

31. Inland postal rates for letters are — for the first 10 gms. 50 paise and 15 paise for every additional 10 grams for part of it. If Sanjay wishes to send a letter weighing 27 gms. What will be the postal charges ?

(A) 80 paise (B) Rs. 2.75
(C) Rs. 2.60 (D) 65 paise
(E) None of these

32. If Amar, Bipin and Chandra Prakash earn Rs. 150 per day while Amar and Chandra Prakash earn Rs. 94 per day and Bipin and Chandra Prakash earn Rs. 76 per day, then Chandra Prakash's earning per day is :

(A) Rs. 56 (B) Rs. 75
(C) Rs. 20 (D) Rs. 39
(E) None of these

33. $3207 - 976 - 1781 = ?$

(A) 452 (B) 4012
(C) 442 (D) 2241
(E) None of these

34. If the rate of exchange is \$ 7.50 for Rs. 100, then how many dollars will be equal to Rs. 550 ?

(A) 41.75 (B) 42.25
(C) 42.75 (D) 40.50
(E) None of these

Scanned by CamScanner

35. $576 \div (36 + 12) = ?$
(A) 28 (B) 11
(C) 12 (D) 22
(E) None of these

36. The sum of two numbers is 97 and their difference is 37. Find out their product.
(A) 2010 (B) 8040
(C) 2128 (D) 1914
(E) None of these

37. How many numbers are divisible by 7 between 4 and 100 ?
(A) 9 (B) 11
(C) 17 (D) 14
(E) None of these

38. In an election, Ashok, Mahesh and Pramod got altogether 150 votes. Ashok and Pramod together got 94 votes; Mahesh and Pramod together got 76 votes. How many votes did Pramod get ?
(A) 76 (B) 56
(C) 20 (D) 74
(E) None of these

39. If the largest three digit number is subtracted from the smallest five digit number, then the balance is :
(A) 9000 (B) 901
(C) 1 (D) 9001
(E) None of these

40. Thrice a number plus two times the same number equals 100. Find the number :
(A) 25 (B) 30
(C) 35 (D) 40
(E) None of these

41. A number is three less than 4 times another. If their sum is equal to 32, then the greater number is :
(A) 68 (B) 93
(C) 105 (D) 72
(E) None of these

42. The population of a town exceeds one-fifth of its own population by 5000. What is the population of the town ?
(A) 25000 (B) 10000
(C) 6250 (D) 4000
(E) None of these

43. Which of the following is equal to the product of 45×25 ?
(A) $40 \times 20 + 5 \times 5$
(B) $45 \times 20 + 5 \times 5$
(C) $40 \times 25 + 5 \times 5 + 5 \times 5$
(D) $40 \times 25 + 25 \times 5$
(E) None of these

44. A number when divided by 105 leaves 99 as remainder. What will be the remainder if the number is divided by 21 ?
(A) 99 (B) 20
(C) 14 (D) 16
(E) None of these

45. A man offers 2 flowers on even days, 3 flowers on odd days divisible by 3 and offer 2 extra flowers on the days divisible by 5, how many flowers did he offer in April 1984 ?
(A) 87 (B) 89
(C) 88 (D) 90
(E) None of these

ANSWERS WITH HINTS

1. (C) $? = 8102 + 7103 - 3986 - 2879 = 8340$.
2. (B) $? = 7032 - 3879 - 4835 + 8610 = 6928$.
3. (C) $\frac{16}{28} \div \frac{30}{42} \times \frac{7}{15} = ?$

$\Rightarrow \frac{16}{28} \times \frac{42}{30} \times \frac{7}{15} = ?$

$\therefore ? = \frac{84}{225}$.

4. (C) $\frac{\sqrt{169}}{13} \times \frac{14}{\sqrt{169}} = ?$

$\therefore ? = \frac{13}{13} \times \frac{14}{14}$

$= 1$.

5. (B) $\frac{\sqrt{64}}{\sqrt{225}} \div \frac{\sqrt{81}}{\sqrt{49}} \times \frac{3}{7} = ?$

$\therefore ? = \frac{8}{15} \times \frac{7}{9} \times \frac{3}{7}$

$= \frac{8}{45}$.

6. (D) 7. (C)

8. (C) $\frac{?}{16} = \frac{400}{?}$

Scanned by CamScanner

$\Rightarrow \quad (?)^2 = 16 \times 400$

$\Rightarrow \quad ? \times ? = 6400$

$\therefore \quad ? = \sqrt{6400} = 80$

9. (B) $\dfrac{(8)^2 \times (15)^2}{40} = ?$

$\therefore \quad ? = \dfrac{8 \times 8 \times 15 \times 15}{40}$

$= 360.$

10. (C) $\dfrac{36}{81} \div \dfrac{72}{27} \times \dfrac{3}{4} = ?$

$\therefore \quad ? = \dfrac{36}{81} \times \dfrac{27}{72} \times \dfrac{3}{4}$

$= \dfrac{1}{8}.$

11. (D) ? = 6123–3654–587–2354 + 698 = 226.

12. (C) $16\sqrt{?} + 12\sqrt{?} = 252$

$\Rightarrow \quad 4(4\sqrt{?} + 3\sqrt{?}) = 252$

$\Rightarrow \quad 4\sqrt{?} + 3\sqrt{?} = 63$

$\Rightarrow \quad 7\sqrt{?} = 63$

$\Rightarrow \quad \sqrt{?} = 9$

$\therefore \quad ? = 81.$

13. (C) $9278 - ? = 5318$

$\therefore \quad ? = 9278 - 5318$

$= 3960.$

14. (B) ? = 9102 + 8132 – 3843 – 2869 = 10522.

15. (A) $\dfrac{15}{20} \div \dfrac{4}{5} \times \dfrac{2}{3} - \dfrac{1}{2} = \dfrac{15}{20} \times \dfrac{5}{4} \times \dfrac{2}{3} - \dfrac{1}{2}$

$= \dfrac{5}{8} - \dfrac{1}{2}$

$\therefore \quad ? = \dfrac{1}{8}.$

16. (C) $? = \dfrac{7}{9} \times \dfrac{27}{35} \div \dfrac{18}{70}$

$= \dfrac{7}{9} \times \dfrac{27}{35} \times \dfrac{70}{18}$

$= \dfrac{7}{3}.$

17. (E) $? = \dfrac{(16)^2 \times (9)^3}{24}$

$= \dfrac{16 \times 16 \times 9 \times 9 \times 9}{24}$

$= 7776.$

18. (B) $\dfrac{?}{36} = \dfrac{48}{\sqrt{?}}$

$\Rightarrow \quad ? \times \sqrt{?} = 48 \times 36$

$\Rightarrow \quad (?)^{\frac{3}{2}} = 4 \times 12 \times 3 \times 12$

$\Rightarrow \quad ? = \sqrt[\frac{2}{3}]{4 \times 12 \times 3 \times 12}$

$= \sqrt[\frac{2}{3}]{4 \times 4 \times 3 \times 3 \times 4 \times 3}$

$= (4 \times 3)^2 = 144.$

19. (B) $5000 \times (?)^2 = 2312$

$\Rightarrow \quad (?)^2 = \dfrac{2312}{5000} = \dfrac{1156}{2500}$

$= \dfrac{(34)^2}{(50)^2}$

$? = \dfrac{34}{50} = 0.68.$

20. (C) $\dfrac{12 \times 360 + 700}{6 \times 120} = ?$

$\therefore \quad ? = \dfrac{12 \times 36 + 70}{6 \times 12}$

$= \dfrac{502}{72}.$

21. (A) $? = \dfrac{7 \times 340 - 38 \times 16}{205 - 4}$

$\therefore \quad ? = \dfrac{2380 - 608}{201}$

$= \dfrac{1772}{201}$

$= 8.82.$

22. (D) $? = \dfrac{810 - 13 \times 17}{589}$

$? = \dfrac{589}{589}$

$= 1.$

23. (D) $8432 \div ? = 527$

$\therefore \quad ? = \dfrac{8432}{527}$

$= 16.$

24. (B)

25. (E)

26. (A) $\dfrac{88}{?} = \dfrac{?}{11 \times 2}$

Scanned by CamScanner

$\Rightarrow \quad (?)^2 = 88 \times 22$

$(?)^2 = 44 \times 44$

$? = 44.$

27. (A) $64800 \div 50 + ? = 1380 - 17$

$\Rightarrow \quad 1296 + ? = 1363$

$\therefore \quad ? = 1363 - 1296$

$= 67$

28. (C) $? = 7203 + 205 \div 41$

$= 7203 + 5$

$= 7208.$

29. (B)

30. (E) $? = 1516 - 201 \times 3 \div 9$

$= 1516 - 67$

$= 1449.$

31. (A) 27 gms. $= 10 + 10 + 7$

$\therefore$ Required postal charges

$= 50 + 15 + 15$

$= 80$ Paise.

32. (C) 33. (E) 34. (E) 35. (C)

36. (A) 37. (D)

38. (C) Votes obtained by Ashok and Pramod

$= 94$

Votes obtained by Mahesh and Pramod

$= 76$

$\therefore$ Votes obtained by Ashok + Pramod + Mahesh $= 94 + 76 = 170$

But votes obtained by Ashok + Pramod + Mahesh $= 150$

$\therefore$ Votes obtained by Pramod only

$= 170 - 150 = 20.$

39. (D) 40. (E) 41. (E)

42. (C) $1 - \frac{1}{5} = \frac{4}{5}$

$\because \quad \frac{4}{5}$ part $= 5000$

$\therefore \quad 1$ part $= 5000 \times \frac{5}{4}$

$= 6250.$

43. (D) 44. (E)

45. (E) No. of even days in April 1984 = 15

(2, 4, 6,……, 28, 30)

No. of odd days in April 1984 divisible by 3 = 5 (3, 9, 15, 21, 27)

No. of odd days in April 1984 divisible by 5 = 2(5, 25) because 15 is already used previously

$\therefore$ Total no. of flowers offered

$= 15 \times 2 + 5 \times 3 + 2 \times 5$

$= 30 + 15 + 10$

$= 55.$

●●●

Scanned by CamScanner

VULGAR FRACTIONS

Rule of Simplification :

(i) First of all all vinculum or bar must be removed. *e.g*; $-10 - 10 = -20$ but $-\overline{10 - 10} = -(-0) = 0$

(ii) After removing the bar, bracket must be removed in the order of ( ), { } and [ ] respectively.

(iii) After removing the brackets, we must use the operation in the following order—

(A) Of, (B) Division, (C) Multiplication, (D) Addition and (E) Subtraction respectively.

The above rule is also known as the rule of **'VBODMAS'** where the given expression stands for Vinculum, Bracket, Of, Division, Multiplication, Addition and Subtraction respectively.

Example 1. Which fraction is greatest in the following ?

$$\frac{2}{15}, \frac{3}{10}, \frac{4}{21}.$$

Solution : $\frac{28, 63, 40}{210}$

$\frac{28}{210}, \frac{63}{210}$ and $\frac{40}{210}, \frac{63}{210}$ is greatest.

Hence $\frac{3}{10}$ is the greatest fraction.

Example 2. Simplify

$$1 \div \frac{3}{7} \text{ of } (6 + 8 \times \overline{3 - 2}) + \left[\frac{1}{5} \div \frac{7}{25} - \left\{\frac{3}{7} + \frac{8}{14}\right\}\right].$$

Solution : $1 \div \frac{3}{7}$ of $(6 + 8 \times 1) + \left[\frac{1}{5} \div \frac{7}{25} - \frac{14}{14}\right]$

$= 1 \div \frac{3}{7}$ of $(6 + 8) + \left[\frac{1}{5} \times \frac{25}{7} - 1\right]$

$= 1 \div \frac{3}{7}$ of $14 + \left[\frac{5}{7} - 1\right]$

$= 1 \div 6 + \left[-\frac{2}{7}\right]$

$= \frac{1}{6} - \frac{2}{7} = -\frac{5}{42}.$

Example 3. If the value of 4/5 part of the land is Rs. 1680, then what is the value of that half part of the land ?

Solution : $\because$ The value of $\frac{4}{5}$ part of the land

= Rs. 1680

$\therefore$ The value of 1 part of the land

$= \frac{1680 \times 5}{4}$

$\therefore$ The value of $\frac{1}{2}$ part of the land

$= \frac{1680 \times 5}{4 \times 2}$

= Rs. 1050.

EXERCISE 2

1. $11\frac{1}{3} \times 4\frac{8}{10} \div ? = 22\frac{2}{3}$

(A) 1.4 (B) 2.4
(C) 2.9 (D) 3.4
(E) 6.2

2. $\frac{3}{8} + \frac{1}{4} + ? + \frac{1}{2} = \frac{21}{16}$

(A) $1\frac{9}{16}$ (B) $\frac{9}{32}$
(C) $\frac{3}{16}$ (D) $\frac{6}{19}$
(E) None of these

3. $\dfrac{\frac{64}{121} - \frac{9}{64}}{\frac{8}{11} + \frac{3}{8}} = ?$

(A) $\frac{88}{31}$ (B) $\frac{66}{31}$

Scanned by CamScanner

(C) $\frac{31}{88}$ (D) $\frac{77}{31}$

(E) None of these

4. $? + \frac{5}{6} + \frac{5}{7} + \frac{4}{9} = 2\frac{125}{126}$

(A) 3 (B) 1

(C) $\frac{1}{4}$ (D) $\frac{3}{7}$

(E) None of these

5. $\frac{4}{9} + \frac{5}{27} + ? + \frac{1}{6} = 1$

(A) $\frac{11}{54}$ (B) $\frac{3}{54}$

(C) $\frac{31}{54}$ (D) $\frac{13}{45}$

(E) None of these

6. $2\frac{4}{5} + ? + 1\frac{7}{15} = 5\frac{1}{6}$

(A) $\frac{7}{10}$ (B) $\frac{1}{6}$

(C) 1 (D) $\frac{5}{6}$

(E) None of these

7. $5\frac{5}{6} - 2\frac{1}{3} = ?$

(A) $\frac{1}{32}$ (B) $\frac{3}{5}$

(C) $\frac{7}{2}$ (D) $\frac{5}{6}$

(E) None of these

8. $2\frac{6}{13} + \frac{14}{3?} + \frac{7}{13} = 3\frac{14}{39}$

(A) 2 (B) 4

(C) 9 (D) 1

(E) None of these

9. $?\frac{5}{12} - 2\frac{1}{6} = \frac{1}{4}$

(A) 1 (B) 3

(C) 5 (D) 4

(E) None of these

10. $2\frac{5}{8} - 1\frac{?}{12} = 1\frac{5}{24}$

(A) 7 (B) 11

(C) 5 (D) 1

(E) None of these

11. $4\frac{1}{2} + 3\frac{1}{6} + ? + 2\frac{1}{3} = 13\frac{2}{5}$

(A) $1\frac{2}{5}$ (B) $3\frac{2}{5}$

(C) $3\frac{1}{5}$ (D) $8\frac{1}{2}$

(E) None of these

12. $? - \frac{2}{25} = \frac{14}{75}$

(A) $\frac{4}{15}$ (B) $\frac{7}{15}$

(C) $\frac{3}{5}$ (D) $\frac{8}{25}$

(E) None of these

13. $2\frac{3}{5} - \frac{8}{7} = 2\frac{1}{15}$

(A) 35 (B) 5

(C) 25 (D) 15

(E) None of these

14. $2\frac{1}{16} \times \frac{3}{?} \times 1\frac{7}{9} = 1$

(A) 11 (B) 21

(C) 5 (D) 8

(E) None of these

15. $8 \times ? \times 5\frac{1}{8} = 15\frac{3}{8}$

(A) $\frac{5}{8}$ (B) $\frac{3}{8}$

(C) $\frac{1}{4}$ (D) $\frac{7}{8}$

(E) None of these

16. $\dfrac{1}{3 + \dfrac{2}{2 + \frac{1}{2}}} = ?$

(A) $\frac{19}{5}$ (B) $\frac{19}{3}$

(C) $\frac{5}{19}$ (D) $\frac{18}{5}$

(E) $\frac{35}{3}$

17. $110 \div 2\frac{3}{4} = ?$

(A) 40 (B) 30

(C) 44 (D) $\frac{55}{2}$

(E) None of these

Scanned by CamScanner

18. $13\frac{3}{4} \div 23\frac{3}{4} = ?$

(A) 4 (B) $\frac{11}{16}$

(C) $1\frac{1}{4}$ (D) 8

(E) None of these

19. How many $\frac{1}{8}$'s are there in $37\frac{1}{2}$?

(A) 100 (B) 300

(C) 500 (D) 800

(E) Can't be determined

20. $3\frac{2}{5} \div 2\frac{3}{7} + \frac{3}{5} = ?$

(A) $\frac{6}{45}$ (B) $\frac{11}{15}$

(C) $4\frac{5}{6}$ (D) 2

(E) None of these

21. $3\frac{3}{7} \div \frac{24}{7} + \frac{3}{5} = ?$

(A) $\frac{3}{16}$ (B) $1\frac{3}{5}$

(C) $\frac{5}{8}$ (D) $\frac{3}{10}$

(E) None of these

22. $\frac{4}{5} \div \frac{3}{25} - \frac{2}{3} = ?$

(A) 3 (B) 7

(C) 11 (D) 6

(E) None of these

23. $11\frac{1}{4} - 8\frac{7}{8} + 3\frac{1}{2} = ?$

(A) -1 (B) $5\frac{7}{8}$

(C) $23\frac{5}{8}$ (D) $16\frac{5}{8}$

(E) None of these

24. $\frac{3}{11} \times \frac{7}{12} \div \frac{35}{44} = ?$

(A) 5 (B) $\frac{3}{5}$

(C) $\frac{11}{12}$ (D) $\frac{1}{5}$

(E) None of these

25. $3\frac{2}{3} - 3\frac{1}{6} + \frac{7}{9} = ?$

(A) $2\frac{3}{9}$ (B) $1\frac{3}{18}$

(C) $2\frac{0}{3}$ (D) $1\frac{5}{9}$

(E) $1\frac{5}{18}$

26. $3 + 3\frac{3}{4} + 2\frac{1}{5} = ?$

(A) $44\frac{4}{21}$ (B) $31\frac{3}{44}$

(C) $3\frac{2}{25}$ (D) $4\frac{34}{44}$

(E) None of these

27. $\frac{6}{11} + \frac{7}{8} \div \frac{77}{40} = ?$

(A) 1 (B) 2

(C) $\frac{43}{48}$ (D) $\frac{625}{847}$

(E) None of these

28. $\frac{7}{12} + \frac{9}{16} - ? = 1$

(A) $\frac{1}{4}$ (B) $\frac{7}{12}$

(C) $\frac{7}{16}$ (D) $\frac{7}{48}$

(E) None of these

29. In a college, $\frac{1}{5}$ of the girls and $\frac{1}{8}$ of the boys took part in a social camp. What of the total number of students in the college took part in the camp ?

(A) $\frac{13}{9}$ (B) $\frac{80}{13}$

(C) $\frac{5}{8}$ (D) $\frac{2}{13}$

(E) Data inadequate

30. $\frac{5}{6} + \frac{6}{7} \times ? - \frac{8}{9} \div 1\frac{3}{5} + \frac{3}{4} \times 3\frac{1}{3} = 2\frac{7}{9}$

(A) $\frac{7}{6}$ (B) $\frac{6}{7}$

(C) 0 (D) 1

(E) None of these

Scanned by CamScanner

31. $\frac{5}{7}$ of $\frac{4}{15}$ of a number is 8 more than $\frac{2}{5}$ of $\frac{4}{9}$ of the same number. What is half of that number ?

(A) 90 (B) 95
(C) 105 (D) 115
(E) 120

32. $2\frac{1}{2}+3\frac{1}{3}+4\frac{1}{4}=?$

(A) $9\frac{1}{2}$ (B) $5\frac{1}{3}$
(C) $10\frac{1}{2}$ (D) $9\frac{1}{3}$
(E) $16\frac{2}{3}$

33. $3+\cfrac{1}{7-\cfrac{2}{4+\cfrac{5}{6+\frac{1}{2}}}}=?$

(A) $3\frac{21}{204}$ (B) $3\frac{31}{204}$
(C) $2\frac{21}{101}$ (D) $15\frac{3}{204}$
(E) $61\frac{1}{3}$

34. $\dfrac{\frac{4}{7}\times\frac{4}{7}-\frac{3}{7}\times\frac{3}{7}}{\frac{4}{7}-\frac{3}{7}}=?$

(A) 0 (B) 1
(C) 2 (D) 3
(E) None of these

35. Which one of the following is the greatest ?

(A) $\frac{1}{8}$ (B) $\frac{2}{12}$
(C) $\frac{3}{16}$ (D) $\frac{4}{20}$
(E) $\frac{3}{18}$

36. $3\frac{3}{10}+1\frac{1}{5}-2\frac{1}{2}=?$

(A) 3 (B) 2
(C) 1 (D) 4
(E) None of these

37. $13\frac{3}{4}-2\frac{3}{4}=?$

(A) 7 (B) 6
(C) 1 (D) 5
(E) None of these

38. $34\frac{1}{5}+7\frac{3}{15}+3\frac{1}{10}-2\frac{1}{4}$

(A) $39\frac{3}{4}$ (B) $42\frac{1}{4}$
(C) $44\frac{3}{4}$ (D) $46\frac{1}{4}$
(E) None of these

39. $4\times 22=4\times ?\ 4\times 2$

(A) 4 (B) 20
(C) 2 (D) 10
(E) None of these

40. $2\times\frac{1}{3}\times\frac{1}{4}=2\times ?\times\frac{1}{4}$

(A) $\frac{1}{3}$ (B) $\frac{1}{8}$
(C) $\frac{1}{7}$ (D) $\frac{1}{4}$
(E) None of these

41. Mukesh has $\frac{2}{3}$rd of the money that Sunil has and Sunil has $\frac{3}{5}$th of the money that Panna has. Panna has Rs. 400 with him. Then how much money does Mukesh have ?

(A) Rs. 266.67 (B) Rs. 16
(C) Rs. 2,000 (D) Rs. 160
(E) None of these

42. Pramod got one third marks of Arithmetic in English. If the total marks obtained by him in both the subjects is 128, then how many marks did he get in Arithmetic ?

(A) 96 (B) 64
(C) 32 (D) 16
(E) None of these

43. Which is the greatest fraction ?

(A) $\frac{5}{9}$ (B) $\frac{2}{3}$
(C) $\frac{3}{8}$ (D) $\frac{5}{6}$
(E) All are equal

Scanned by CamScanner

44. Which of the following fractions is more than $\frac{3}{4}$?

(A) $\frac{35}{71}$ (B) $\frac{13}{20}$

(C) $\frac{19}{24}$ (D) $\frac{71}{101}$

(E) None of these

45. If three times of a number is greater than $\frac{3}{5}$th of it by 60, what is the number ?

(A) 25 (B) 20

(C) 30 (D) 60

(E) None of these

46. By how much is three-fourths of 64 greater than two-thirds of 48 ?

(A) 32 (B) 14

(C) 18 (D) 26

(E) None of these

47. The difference between $\frac{3}{4}$th of 64 and $\frac{2}{3}$rd of 48 is equal to :

(A) 24 (B) 20

(C) 32 (D) 16

(E) None of these

48. The difference between two numbers is $9\frac{37}{75}$, if one of them is $3\frac{8}{15}$, then the other is :

(A) $13\frac{2}{75}$ (B) $13\frac{4}{75}$

(C) $5\frac{72}{75}$ (D) $5\frac{61}{75}$

(E) None of these

49. What is the least number which must be added to $15\frac{3}{5}$ to make it an odd integer ?

(A) $\frac{2}{5}$ (B) $1\frac{2}{5}$

(C) $2\frac{2}{5}$ (D) $3\frac{2}{5}$

(E) None of these

ANSWERS WITH HINTS

1. (B) $11\frac{1}{3} \times 4\frac{8}{10} \div ? = 22\frac{2}{3}$

or, $11\frac{1}{3} \times 4\frac{8}{10} = 22\frac{2}{3} \times ?$

[Since $a \div b = c$, then $a = b \times c$]

or, $? = \frac{1}{2} \times 4\frac{8}{10}$

$\left[\text{Since } \frac{11\frac{1}{3}}{22\frac{2}{3}} = \frac{1}{2}\right]$

or, $? = 2.4.$

2. (C)

3. (C) $? = \frac{(64^2 - 9 \times 121)}{121 \times 64} \times \frac{8 \times 11}{(8 \times 8 + 3 \times 11)}$

or, $? = \frac{(64^2 - 3 \times 3 \times 11 \times 11)}{11 \times 11 \times 8 \times 8} \times \frac{8 \times 11}{(64 + 33)}$

or, $? = \frac{(64 + 33)(64 - 33)}{11 \times 8} \times \frac{1}{64 + 33}$

or, $? = \frac{31}{88}$.

4. (B) 5. (A) 6. (E) 7. (C)

8. (C) $\frac{14}{3?} = 3\frac{14}{39} - 2\frac{6}{13} - \frac{7}{13}$

$= \frac{131}{39} - \frac{32}{13} - \frac{7}{13}$

$= \frac{131 - 96 - 21}{39} = \frac{14}{39}$

$\therefore \quad ? = 9.$

9. (E) 10. (C)

11. (B) $? = \frac{67}{5} - \left(\frac{9}{2} + \frac{19}{6} + \frac{7}{3}\right)$

$= \frac{67}{5} - 10$

$= \frac{17}{5} = 3\frac{2}{5}$.

12. (A) 13. (D) 14. (A) 15. (B)

16. (C) 17. (A)

18. (E) $? = 13\frac{3}{4} \div 23\frac{3}{4}$

$= \frac{55}{4} \div \frac{95}{4} = \frac{55}{4} \times \frac{4}{95}$

$= \frac{11}{19}$.

19. (B) $37\frac{1}{2} = \frac{75}{2} = \frac{1}{8} \times \left(\frac{75 \times 8}{2}\right)$

$= \frac{1}{8} \times 300$

Thus, the number of $\frac{1}{8}$'s in $37\frac{1}{2}$ is 300.

20. (D) $? = 3\frac{2}{5} \div 2\frac{3}{7} + \frac{3}{5}$

Scanned by CamScanner

$$= \frac{17}{5} \div \frac{17}{7} + \frac{3}{5} = \frac{17}{5} \times \frac{7}{17} + \frac{3}{5}$$
$$= \frac{7}{5} + \frac{3}{5} = \frac{10}{5}$$
$$= 2.$$

21. (B)

22. (D) $? = \frac{4}{5} \div \frac{3}{25} - \frac{2}{3}$
$$= \frac{4}{5} \times \frac{25}{3} - \frac{2}{3} = \frac{20}{3} - \frac{2}{3} = \frac{18}{3}$$
$$= 6.$$

23. (B)

24. (D) $? = \frac{3}{11} \times \frac{7}{12} \div \frac{35}{44}$
$$? = \frac{3}{11} \times \frac{7}{12} \times \frac{44}{35}$$
$$= \frac{1}{5}.$$

25. (E) 26. (E) 27. (A) 28. (D)

29. (D) Out of 5 girls, 1 took part in the camp and out of 8 boys 1 took part in the camp. Thus out of 13 students 2 took part in the camp *i.e.*, $\frac{2}{3}$ of total students joined the camp.

30. (B) $\frac{5}{6} \div \frac{6}{7} \times ? - \frac{8}{9} \times \frac{5}{8} + \frac{3}{4} \times \frac{10}{3} = \frac{25}{9}$

or, $\frac{35}{36} \times ? - \frac{5}{9} + \frac{5}{2} = \frac{25}{9}$

or, $\frac{35}{36} \times ? = \frac{25}{9} + \frac{5}{9} - \frac{5}{2}$
$$= \frac{50 + 10 - 45}{18} = \frac{15}{18}$$
$$\therefore \quad ? = \frac{15}{18} \times \frac{36}{35}$$
$$= \frac{6}{7}.$$

31. (C) Let the number be x

$\therefore \frac{5}{7} \times \frac{4}{15} \times x - \frac{2}{5} \times \frac{4}{9} \times x = 8$

or, $x = \frac{8 \times 315}{12} = 210$

$\therefore$ Half of the number $= 105.$

32. (C)

33. (D) $3 + \cfrac{1}{7 - \cfrac{2}{4 + \cfrac{10}{13}}} = 3 + \cfrac{1}{7 - \cfrac{13}{31}}$
$$= 3 + \frac{31}{204} = 3\frac{31}{204}.$$

34. (C) 35. (B) 36. (B) 37. (E)
38. (B)

39. (B) $4 \times 22 = 4 \times ? + 4 \times 2$
$\therefore \quad 88 = 4 \times ? + 8$
$4 \times ? = 88 - 8$
$4 \times ? = 80$
$? = \frac{80}{4}$
$= 20.$

40. (A) $2 \times \frac{1}{3} \times \frac{1}{4} = 2 \times ? \times \frac{1}{4}$
$\therefore \quad ? = 2 \times \frac{1}{3} \times \frac{1}{4} \times \frac{1}{2} \times \frac{4}{1}$
$= \frac{1}{3}$

41. (D) Money with Sunil $= \frac{3}{5}$ of Rs. 400
$=$ Rs. 240
Money with Mukesh $= \frac{2}{3}$ of Rs. 240
$=$ Rs. 160.

42. (A) If Pramod got 1 mark in Arithmetic, the marks obtained in English $= \frac{1}{3}$

$\therefore \quad 1 + \frac{1}{3} = \frac{4}{3}$

If total marks obtained is $\frac{4}{3}$, then marks in Arithmetic $= 1$

$\therefore$ 1 mark obtained is $\frac{4}{3}$, then marks in Arithmetic $= 1 \times \frac{3}{4}$

$\therefore$ 128 marks obtained is $\frac{4}{3}$, then marks in Arithmetic $= \frac{3}{4} \times 128 = 96.$

43. (D) 44. (C) 45. (A) 46. (E)
47. (D) 48. (A) 49. (B)

●●●

Scanned by CamScanner

DECIMAL FRACTIONS

Addition and Subtraction of Decimal— While doing a sum of addition or subtraction, the following steps should be excented :

1. The number should be placed in columns in ones under ones, tenths under tenths etc.

2. The decimal points should form one column.

3. The numbers are added or subtracted in the same way as whole numbers.

4. The decimal point is put in the answer directly under the column of decimals.

Multiplication of Decimals—Ignore the decimal point and multiply the two numbers as the whole numbers in the product put a decimal point after as many places from the right as there are in the multiplier and multiplicant together.

Division of Decimals—When the divisor is a whole number, perform the division as in the case of whole number. In the quotient, put a decimal point after as many places from the rights as there are in the dividend.

When the divisor is a decimal, remove the decimal point of the divisor to the right until it becomes a whole number. Next remove the decimal point of the dividend the same number of places to the right adding zeroes is necessary.

Example 1. Simplify :

$$16 - 3.60 \div 0.4 \text{ of } 0.3 \times 0.5$$

Solution : $16 - 3.60 \div 0.4 \times 0.3 \times 0.5$

$= 16 - 9 \times 0.3 \times 0.5$

$= 16 - 1.35$

$= 14.65.$

Example 2. Simplify :

$$\frac{1.7 \times 1.7 - 1.3 \times 1.3}{(1.7 - 1.3)}$$

Solution : $\dfrac{1.7 \times 1.7 - 1.3 \times 1.3}{1.7 - 1.3}$

$= \dfrac{(1.7)^2 - (1.3)^2}{(1.7 - 1.3)}$

$= \dfrac{(1.7 + 1.3)\ (1.7 - 1.3)}{(1.7 - 1.3)}$

$= 1.7 + 1.3$

$= 3.$

EXERCISE 3

In the following given questions what will come in place of question mark (?).

1. $98.32 - 3.658 + 67.39 = ?$
   (A) 142.051 (B) 147.052
   (C) 162.052 (D) 113.052
   (E) None of these

2. $0.5 \times 14.14 - 12.34 \times 0.08 = ?$
   (A) 6.0828 (B) 0.0720
   (C) 5.0828 (D) 0.0828
   (E) None of these

3. $71.01 - 89.63 - ? + 87.32 = 91.01 + 87.69 - 205.68$
   (A) 95.68 (B) 97.68
   (C) 83.68 (D) 105.68
   (E) None of these

4. $\frac{1}{3}$ of $12.063 + \frac{1}{8}$ of $7.5 = ?$
   (A) 4.8585 (B) 4.9855
   (C) 4.8595 (D) 4.9595
   (E) None of these

5. $1.30 + 1.1 + 8.24 + 7.05 = ?$
   (A) 18.72 (B) 17.72
   (C) 16.72 (D) 17.69
   (E) None of these

6. $0.032 + 1.573 + 19.538 + ? = 29.543$
   (A) 8.400 (B) 8.040
   (C) 8.004 (D) 1.400
   (E) None of these

Scanned by CamScanner

7. 0.325 + 1.7?0 + 0.789 = 2.864
(A) 2 (B) 4
(C) 7 (D) 5
(E) None of these

8. ? + 2.74 + 1.0 + 1.4 = 21.16
(A) 16.10 (B) 16.02
(C) 16.001 (D) 1.61
(E) None of these

9. 5 × 0.5 × 0.05 × 0.005 = ?
(A) 0.0625 (B) 0.00625
(C) 0.000625 (D) 6.250
(E) None of these

10. 58.5 + ? + 10.4 – 53.2 = 122.7
(A) 101 (B) 104
(C) 106 (D) 106.4
(E) None of these

11. ? × 0.8 × 0.00016 = 0.000512
(A) 0.04 (B) 4
(C) 0.4 (D) 0.004
(E) None of these

12. 0.46 + 8.2 + ?.75 = 43.41
(A) 4 (B) 3
(C) 43 (D) 34
(E) None of these

13. 80% of 8.5 = ? of 3.75
(A) 1.813 (B) 18.13
(C) 181.3 (D) 0.1813
(E) None of these

14. 18.75 – (3.69 + 6.57) = ?
(A) 7.49 (B) 4.49
(C) 8.94 (D) 8.49
(E) None of these

15. 7.14 – 3.114 = ?
(A) 3.899 (B) 3.998
(C) 39.99 (D) 3.098
(E) None of these

16. 220.4 + 22.8 ÷ 3.8 = ?
(A) 226.4 (B) 214.4
(C) 232.4 (D) 64
(E) None of these

17. 2.53 – 1.01 = ?
(A) 0.152 (B) 1.52
(C) 15.2 (D) 1.052
(E) None of these

18. 12.03 – 9.002 = ?
(A) 3.128 (B) 3.208
(C) 3.28 (D) 3.028
(E) None of these

19. 0.795 × ? = 9.540
(A) 8 (B) 10
(C) 12 (D) 21
(E) None of these

20. ? × 0.02 = 0.0072
(A) 3.06 (B) 0.36
(C) 0.036 (D) 16
(E) None of these

21. 108.69 – 65.48 + ? = 7532 + 854.49
(A) 8134.38 (B) 8343.28
(C) 8443.28 (D) 8641.29
(E) None of these

22. ? ÷ 12 = 0.144
(A) 17.028 (B) 0.1728
(C) 1.728 (D) 17.28
(E) None of these

23. 39.?4 ÷ 18 = 2.18
(A) 3 (B) 5
(C) 8 (D) 9
(E) None of these

24. 15.74 × 15 = 236.?0
(A) 8 (B) 7
(C) 1 (D) 2
(E) None of these

25. 4.03 ÷ ? = 0.031
(A) 0.130 (B) 1.30
(C) 3.10 (D) 130
(E) None of these

26. 19.52 ÷ 1? = 1.22
(A) 4 (B) 6
(C) 3 (D) 5
(D) None of these

27. 46.527 × 29.83 = ?
(A) 1327.90014 (B) 1237.91400
(C) 1387.91001 (D) 1387.90031
(E) None of these

Scanned by CamScanner

28. $0.001 \times 0.04 \times ? = 0.000036$

(A) 0.09 (B) 9.0
(C) 0.9 (D) 0.090
(E) None of these

29. $9.20 \div 2.3 = ?$

(A) 0.040 (B) 4.004
(C) 2.4 (D) 4
(E) None of these

30. $48.06 + 31.35 + ? = 91.35$

(A) 11.84 (B) 11.14
(C) 11.94 (D) 11.04
(E) None of these

31. There are 12 cases of apples with each case containing 12 boxes and each box holding 18 apples. If all the 12 cases were sold for Rs. 1632.96, what will be the price of a dozen apples ?

(A) Rs. 5.56 (B) Rs. 6.56
(C) Rs. 7.56 (D) Rs. 10
(E) None of these

32. How many pieces, each of length 4.5 m can be cut of 225 m of wire ?

(A) 45 (B) 50
(C) 90 (D) 25
(E) None of these

33. $235.008 - ? + 172.3205 - 63.45 = 135.234 - 39.652$

(A) 248.3965 (B) 348.2965
(C) 248.2865 (D) 248.2965
(E) None of these

34. $65.92 + ? - 57.67 = 102.36 + 87.69$

(A) 171.8 (B) 176.8
(C) 181.8 (D) 152.8
(E) None of these

35. $\sqrt{0.01 + \sqrt{0.0064}} = ?$

(A) 0.0003 (B) 0.003
(C) 0.03 (D) 0.0065
(E) None of these

36. $9.75 \times 9.75 - 2 \times 9.75 \times 5.75 + 5.75 \times 5.75 = ?$

(A) 14.62 (B) 15
(C) 16 (D) 25
(E) None of these

37. $3 \times 0.3 \times 0.03 \times 0.003 \times 30 = ?$

(A) 0.002430
(B) 0.000243
(C) 0.0243
(D) 0.01243
(E) None of these

38. $\dfrac{(2.3)^3 + 0.027}{(2.3)^2 - 0.69 + 0.09} = ?$

(A) 2.4 (B) 2.6
(C) 2.89 (D) 2.43
(E) None of these

39. $(25.732)^2 - (15.732)^2 = ?$

(A) 414.64 (B) 414.16
(C) 404 (D) 414
(E) None of these

40. $\dfrac{(0.6)^4 - (0.5)^4}{(0.6)^2 + (0.5)^2} = ?$

(A) 1.01 (B) 0.111
(C) 0.0011 (D) 0.11
(E) None of these

ANSWERS WITH HINTS

1. (C) $? = 98.32 - 3.658 + 67.39$
$= 162.052$

2. (A) $? = 0.5 \times 14.14 - 12.34 \times 0.08$
$= 7.07 - 0.9872$
$= 6.0828$

3. (A) $? = 71.01 + 87.32 + 205.68 - 89.63 - 91.01 - 87.69$
$= 95.68$

4. (E) $? = \frac{1}{3}$ of $12.063 + \frac{1}{8}$ of 7.5
$= \frac{1}{3} \times 12.063 + \frac{1}{8} \times 7.5$
$= 4.021 + 0.9375$
$= 4.9585$

5. (D) 6. (A) 7. (D) 8. (B)

9. (C) $5 \times 5 \times 5 \times 5 = 625$
Sum of the decimal places = 6
$\therefore$ $? = 0.000625$

10. (E) $? = 122.7 - 58.5 - 10.4 + 53.2$
$= 107$

Scanned by CamScanner

11. (B) $? \times 0.8 \times 0.00016 = 0.000512$

$\therefore \quad ? = \dfrac{0.000512}{0.8 \times 0.00016}$

$= \dfrac{512}{128}$

$\therefore \quad ? = 4$

12. (D)

13. (A) 80% of 8.5 = ? of 3.75

$\therefore \quad ? = \dfrac{8.5 \times 80}{3.75 \times 100}$

$= 1.813$

14. (D) $? = 18.75 - 3.69 - 6.57$

$= 8.49$

15. (E)

16. (A) $? = 220.4 + 22.8 \div 3.8$

$= 220.4 + 6$

$= 226.4$

17. (B) 18. (D)

19. (C) $? = \dfrac{9.540}{0.795} = \dfrac{9540}{795}$

$= 12$

20. (B)

21. (B) $? = 7532 + 854.49 + 65.48 - 108.69$

$= 8343.28$

22. (C) 23. (E) 24. (C)

25. (D) $4.03 \div ? = 0.031$

$\therefore \quad ? = \dfrac{4.03}{0.031} = \dfrac{4030}{31}$

$= 130$

26. (B) 27. (E)

28. (C) $0.001 \times 0.04 \times ? = 0.000036$

$\therefore \quad ? = \dfrac{0.000036}{0.001 \times 0.040}$

$= \dfrac{36}{1 \times 40}$

$= 0.9$

29. (D) 30. (C)

31. (C) Total numbers of Apples in 12 cases

$= 12 \times 12 \times 18$

$= 2592$

$\because$ Cost of 2592 Apples = Rs. 1632.96

$\therefore$ Cost of 12 Apples $= \dfrac{1632.96 \times 12}{2592}$

= Rs. 7.56

32. (B)

33. (D) $? = 235.008 + 172.3205 + 39.652 - 63.450 - 135.234$

$= 248.2965$

34. (C) $? = 102.36 + 87.69 - 65.92 + 57.67$

$= 181.8$

35. (E) $? = \sqrt{0.01 + \sqrt{0.0064}}$

$= \sqrt{0.01 + \sqrt{\dfrac{64}{10000}}}$

$= \sqrt{0.01 + \dfrac{8}{100}}$

$= \sqrt{0.01 + 0.08}$

$= \sqrt{0.09}$

$? = 0.3$

36. (C) Given Expression $= (a^2 - 2ab + b^2)$

where $a = 9.75$

and $b = 5.75$

$= (a - b)^2$

$= (9.75 - 5.75)^2$

$= (4)^2 = 16$

37. (A) $3 \times 3 \times 3 \times 3 \times 30 = 2430$

Sum of the decimal places = 6

$\therefore \quad ? = 0.002430$

38. (B) Given Expression

$= \dfrac{(2.3)^3 + (0.3)^3}{(2.3)^2 - 2.3 \times 0.3 + (0.3)^2}$

$= \dfrac{a^3 + b^3}{a^2 - ab + b^2}$

$= (a + b) = (2.3 + 0.3)$

$= 2.6$

39. (A) Given Expression

$= (a^2 - b^2) = (a + b)(a - b)$

$= (25.732 + 15.732) \times (25.732 - 15.732)$

$= (41.464 \times 10)$

$= 414.64$

40. (D) Given Expression

$= \dfrac{(a^4 - b^4)}{(a^2 + b^2)} = (a^2 - b^2) = (a + b)(a - b)$

where $a = 0.6$ and $b = 0.5$

$= (0.6 + 0.5) \times (0.6 - 0.5)$

$= 1.1 \times 0.1$

$= 0.11$

●●●

Scanned by CamScanner

BRACKETS

In simplifying an expression, the brackets must be removed in the order ( ), { } and [ ]. After removing the brackets, we must use the following operations strictly in the order given below—

(a) of (b) division (c) multiplication (d) addition and (e) subtraction.

The rule is also known as the rule of **VBODMAS** *i.e.*, Vinculum, Bracket, Of, Division, Multiplication, Addition and Subtraction.

Example 1. Find the value of

$$6 - [7 + 1 - (5 - 2)].$$

Solution : $6 - [8 - (3)] = 6 - [8 - 3]$

$= 6 - [5]$

$= 1$

Example 2. Find the value of

$1 - [5 - \{2 + (-5 + 6 - 2) \times 2\}]$

Solution : $1 - [5 - \{2 + (-5 + 6 - 2) \times 2\}]$

$= 1 - [5 - \{2 + (-1) \times 2\}]$

$= 1 - [5 - \{2 - 2\}]$

$= 1 - [5 - 0]$

$= 1 - 5$

$= -4$

Example 3. $1\frac{2}{3}\left\{\left(\overline{\frac{7}{8}+\frac{3}{4}} \times \frac{2}{5}\right) \div 1\frac{3}{4}+\frac{5}{8}\right\} = ?$

Solution : $\frac{5}{3}\left\{\left(\overline{\frac{7}{8}+\frac{3}{4}} \times \frac{2}{3}\right) \div \frac{7}{4}+\frac{5}{8}\right\}$

$= \frac{5}{3}\left\{\left(\frac{7+6}{8} \times \frac{2}{3}\right) \times \frac{4}{7}+\frac{5}{8}\right\}$

$= \frac{5}{3}\left(\frac{13}{8} \times \frac{2}{3} \times \frac{4}{7}+\frac{5}{8}\right) = \frac{5}{3}\left\{\frac{13}{21}+\frac{5}{8}\right\}$

$= \frac{5}{3}\left\{\frac{104+105}{168}\right\}$

$= \frac{5}{3} \times \frac{209}{168} = \frac{1045}{504} = 2\frac{37}{504}$

EXERCISE 4

1. $\left[\frac{1}{2\frac{1}{3}}+\frac{1}{1\frac{3}{4}}\right] = ?$

(A) 1 (B) $\frac{3}{2}$

(C) $\frac{13}{28}$ (D) $\frac{5}{12}$

(E) None of these

2. $2\frac{2}{7} \div \left[1\frac{4}{11} \times 2\frac{4}{9}\right] = ?$

(A) $\frac{5}{8}$ (B) $\frac{2}{3}$

(C) $\frac{4}{5}$ (D) $\frac{24}{35}$

(E) None of these

3. $4\frac{3}{8}\left[1\frac{1}{3}+2\frac{2}{3}\right] = ?$

(A) $\frac{5}{8}$ (B) $\frac{3}{8}$

(C) $\frac{1}{2}$ (D) $2\frac{3}{8}$

(E) None of these

4. $\left[\frac{3}{8}+3\frac{1}{8}\right] \div 2\frac{3}{16} = ?$

(A) $\frac{3}{5}$ (B) $\frac{1}{5}$

(C) $3\frac{3}{5}$ (D) $2\frac{4}{15}$

(E) None of these

5. $2\frac{1}{4} \times \left[4\frac{1}{5} \div \frac{63}{64}\right] = ?$

(A) $7\frac{3}{5}$ (B) $1\frac{3}{5}$

(C) $9\frac{3}{5}$ (D) $\frac{3}{5}$

(E) None of these

Scanned by CamScanner

6. $\frac{5}{7} - \left[\frac{1}{2} - \frac{5}{?}\right] = \frac{4}{7}$

(A) 12 (B) 27
(C) 21 (D) 19
(E) None of these

7. $\left[\frac{1}{2} + \frac{1}{3}\right] \div \left[\frac{1}{4} - \frac{1}{12}\right] = ?$

(A) $\frac{5}{6}$ (B) 3
(C) 5 (D) 7
(E) None of these

8. $\frac{2}{5} + \frac{1}{5} \div \left[\frac{2}{5} - \frac{1}{5}\right] = ?$

(A) $1\frac{2}{5}$ (B) $1\frac{2}{3}$
(C) 8 (D) $\frac{2}{5}$
(E) None of these

9. $\frac{3}{4} \div \left[1\frac{2}{3} \times \frac{4}{5}\right] = ?$

(A) 11 (B) 4
(C) 3 (D) $\frac{9}{16}$
(E) None of these

10. $4\frac{3}{5} + \left[\frac{3}{5} \times \frac{2}{3}\right] = ?$

(A) $3\frac{4}{5}$ (B) 5
(C) 3 (D) $4\frac{2}{5}$
(E) None of these

11. $3\frac{1}{2}$ of $\left(\frac{2}{7} + \frac{6}{7}\right) = ?$

(A) 4 (B) 3
(C) $\frac{1}{4}$ (D) 8
(E) None of these

12. $\frac{5}{8} + \frac{1}{2} \times \left(\frac{5}{8} - \frac{6}{16}\right) = ?$

(A) $\frac{8}{25}$ (B) $\frac{3}{22}$
(C) $\frac{9}{28}$ (D) $\frac{15}{22}$
(E) None of these

13. $\left(\frac{1}{5} + \frac{3}{10}\right) \div \left(\frac{5}{6} - \frac{2}{3}\right) = ?$

(A) 11 (B) 3
(C) 5 (D) 6
(E) None of these

14. $32 - 8 \div (29 - 5) = ?$

(A) $3\frac{2}{3}$ (B) $31\frac{2}{3}$
(C) $13\frac{2}{3}$ (D) $3\frac{2}{13}$
(E) None of these

15. $\left(\frac{7}{8} - \frac{3}{4}\right) \div \frac{1}{16} = ?$

(A) 3 (B) 8
(C) 11 (D) 7
(E) None of these

16. $7\frac{1}{3} - \left(\frac{3}{5} \text{ of } \frac{5}{9}\right) = ?$

(A) $\frac{3}{7}$ (B) $\frac{2}{3}$
(C) $7\frac{2}{3}$ (D) 7
(E) None of these

17. $110 \div 2\frac{3}{4} = ?$

(A) 40 (B) 30
(C) 44 (D) $\frac{55}{2}$
(E) None of these

18. $\left(2\frac{2}{3} - \frac{2}{3}\right)\left(\frac{5}{6} + \frac{1}{6}\right) = ?$

(A) 12 (B) 4
(C) 2 (D) 21
(E) None of these

19. $7\frac{1}{2} - \left[2\frac{1}{4} \div \left\{1\frac{1}{4} - \frac{1}{2}\left(1\frac{1}{2} - \frac{1}{3} - \frac{1}{6}\right)\right\}\right] = ?$

(A) $3\frac{1}{2}$ (B) $6\frac{1}{7}$
(C) $4\frac{1}{2}$ (D) $8\frac{1}{2}$
(E) None of these

20. $48 \div 12 \times \left(\frac{9}{8} \text{ of } \frac{4}{3} \div \frac{3}{4} \text{ of } \frac{2}{3}\right) = ?$

(A) 12 (B) 14

Scanned by CamScanner

(C) 16 (D) 25
(E) None of these

21. $4\frac{1}{2}\left(1\frac{1}{3}+2\frac{2}{3}\right)=?$

(A) $2\frac{1}{4}$ (B) 13
(C) 36 (D) 18
(E) None of these

22. $12(21+9)\div 3+14=?$

(A) 134 (B) 124
(C) 144 (D) 154
(E) None of these

23. $(13\times 5-35)-15\div\frac{5}{2}\text{ of }12=?$

(A) $28\frac{1}{2}$ (B) $27\frac{1}{2}$
(C) $29\frac{1}{2}$ (D) $39\frac{1}{2}$
(E) None of these

24. $\left[1\frac{2}{9}\div\frac{2}{15}\text{ of }\frac{5}{21}\right]+\frac{1}{3}=?$

(A) $33\frac{2}{3}$ (B) $33\frac{1}{3}$
(C) $37\frac{1}{2}$ (D) $38\frac{5}{6}$
(E) None of these

25. $\left\{7\frac{1}{2}+\frac{1}{2}\div\frac{1}{2}\text{ of }\frac{1}{4}-\frac{2}{5}\times 2\frac{1}{3}\div 1\frac{7}{8}\text{ of }\left(1\frac{2}{5}-1\frac{1}{3}\right)\right\}=?$

(A) $4\frac{1}{30}$ (B) $2\frac{1}{30}$
(C) $15\frac{1}{2}$ (D) $16\frac{1}{2}$
(E) None of these

26. $\dfrac{3\frac{1}{3}\text{ of }\frac{3}{5}-\frac{1}{2}}{3\frac{1}{3}\text{ of }\left(\frac{3}{5}-\frac{1}{2}\right)}=?$

(A) $5\frac{1}{4}$ (B) $6\frac{1}{4}$
(C) $7\frac{1}{4}$ (D) $4\frac{1}{2}$
(E) None of these

27. $\dfrac{3\frac{1}{4}-\frac{4}{5}\text{ of }\frac{5}{6}}{4\frac{1}{3}\div\frac{1}{5}-\left(\frac{3}{10}+21\frac{1}{5}\right)}=?$

(A) $\frac{1}{8}$ (B) $\frac{1}{12}$
(C) $\frac{31}{2}$ (D) $\frac{15}{2}$
(E) None of these

28. $\frac{2}{5}+2\frac{4}{9}\div\left[\left(7\frac{5}{12}-5\frac{3}{4}\right)\div 22\frac{1}{2}+10\times\frac{5}{18}\right]-\frac{4}{5}=?$

(A) $\frac{15}{32}$ (B) $\frac{16}{35}$
(C) $\frac{18}{25}$ (D) $\frac{20}{7}$
(E) None of these

29. $1+[1\div\{5\div 4-1\div(13\div 3-1\div 3)\}]=?$

(A) 0 (B) 1
(C) 2 (D) 3
(E) None of these

30. $\left(4.59\times 1.8\div 3.6+5.4\text{ of }\frac{1}{9}-\frac{1}{5}\right)=?$

(A) 1.695 (B) 2.695
(C) 5.625 (D) 8.212
(E) None of these

ANSWERS WITH HINTS

1. (A) $\dfrac{1}{\left(\frac{7}{3}\right)}+\dfrac{1}{\left(\frac{7}{4}\right)}=\frac{3}{7}+\frac{4}{7}=\frac{7}{7}=1$

2. (D) 3. (E)

4. (E) $? = \left[\frac{3}{8}+3\frac{1}{8}\right]\div 2\frac{3}{16}$

$= 3\frac{1}{2}\div 2\frac{3}{16}$

$= \frac{7}{2}\div\frac{35}{16}=\frac{7}{2}\times\frac{16}{35}$

$= \frac{8}{5}=1\frac{3}{5}$

5. (C)

Scanned by CamScanner

6. (E) $\frac{5}{7}-\left[\frac{1}{2}-\frac{5}{?}\right] = \frac{4}{7}$

$\therefore \quad \frac{5}{7}-\frac{1}{2}+\frac{5}{?} = \frac{4}{7}$

$\therefore \quad \frac{5}{?} = \frac{4}{7}-\frac{5}{7}+\frac{1}{2}$

$\therefore \quad \frac{5}{?} = \frac{5}{14}$

$\therefore \quad ? = 14$

7. (C) 8. (A) 9. (D) 10. (B)

11. (A)

12. (E) $\frac{5}{8}+\frac{1}{2}\times\frac{1}{4} = \frac{5}{8}+\frac{1}{8}=\frac{6}{8}=\frac{3}{4}$

13. (B) $? = \left(\frac{1}{5}+\frac{3}{10}\right)\div\left(\frac{5}{6}-\frac{2}{3}\right)$

$= \frac{(2+3)}{10}\div\frac{(5-6)}{6}$

$= \frac{5}{10}\div\frac{1}{6}$

$= \frac{5}{10}\times\frac{6}{1}$

$= 3$

14. (B) 15. (E) 16. (D) 17. (A)

18. (C)

19. (C) $? = \frac{15}{2}-\left[\frac{9}{4}\div\left\{\frac{5}{4}-\frac{1}{2}\left(\frac{3}{2}-\frac{1}{3}-\frac{1}{6}\right)\right\}\right]$

$= \frac{15}{2}-\left[\frac{9}{4}\div\left\{\frac{5}{4}-\frac{1}{2}\times 1\right\}\right]$

$= \frac{15}{2}-\left[\frac{9}{4}\div\left\{\frac{5}{4}-\frac{1}{2}\right\}\right]$

$= \frac{15}{2}-\left[\frac{9}{4}\times\frac{4}{3}\right]$

$= \frac{15}{2}-3 = \frac{9}{2}$

$= 4\frac{1}{2}$

20. (A) $? = 48\div 12\times\left(\frac{3}{2}\div\frac{1}{2}\right)$

$= 48\div 12\times\left(\frac{3}{2}\times\frac{2}{1}\right)$

$= \frac{48}{12}\times 3$

$= 12$

21. (D) $? = 4\frac{1}{2}\left(1\frac{1}{3}+2\frac{2}{3}\right)$

$= \frac{9}{2}\left(\frac{4}{3}+\frac{8}{3}\right) = \frac{9}{2}\times\frac{12}{3}$

$= 18$

22. (A) 23. (C)

24. (D) $? = \left[1\frac{2}{9}\div\frac{2}{15}\text{ of }\frac{5}{21}\right]+\frac{1}{3}$

$= \left[\frac{11}{9}\div\frac{2}{15}\text{ of }\frac{5}{21}\right]+\frac{1}{3}$

$= \left[\frac{11}{9}\times\frac{2}{63}\right]+\frac{1}{3}$

$= \frac{77}{2}+\frac{1}{3} = \frac{231+2}{6}$

$= \frac{233}{6} = 38\frac{5}{6}$

25. (A) $? = \left\{\frac{15}{2}+\frac{1}{2}\div\frac{1}{8}-\frac{2}{5}\times\frac{7}{3}\div\frac{15}{8}\text{ of }\frac{1}{15}\right\}$

$= \left\{\frac{15}{2}+\frac{1}{2}\times\frac{8}{1}-\frac{2}{5}\times\frac{7}{3}\times\frac{8}{1}\right\}$

$= \left\{\frac{15}{2}+4-\frac{112}{15}\right\}$

$= \frac{121}{30}$

$= 4\frac{1}{30}$

26. (D) $? = \dfrac{\frac{10}{3}\text{ of }\frac{3}{5}-\frac{1}{2}}{\frac{10}{3}\text{ of }\left(\frac{3}{5}-\frac{1}{2}\right)} = \dfrac{2-\frac{1}{2}}{\frac{10}{3}\text{ of }\frac{1}{10}}$

$= \dfrac{\frac{3}{2}}{\frac{1}{3}} = \frac{9}{2}$

$= 4\frac{1}{2}$

27. (C) $? = \dfrac{\frac{13}{4}-\frac{2}{3}}{\frac{13}{3}\div\frac{1}{5}-\left(\frac{3}{10}+\frac{106}{5}\right)}$

$= \dfrac{\frac{13}{4}-\frac{2}{3}}{\frac{13}{3}\div\frac{1}{5}-\frac{43}{2}}$

Scanned by CamScanner

$$= \frac{\frac{13}{4}-\frac{2}{3}}{\frac{65}{3}-\frac{43}{2}}$$

$$= \frac{31}{12}\times\frac{6}{1}$$

$$= 15\frac{1}{2}$$

28. (B) $? = \frac{2}{5}+\frac{22}{9} \div \left[\left(\frac{89}{12}-\frac{23}{4}\right)\div\frac{45}{2}+10\times\frac{5}{18}\right]-\frac{4}{5}$

$$= \frac{2}{5}+\frac{22}{9} \div \left[\frac{5}{3}\times\frac{2}{45}+10\times\frac{5}{18}\right]-\frac{4}{5}$$

$$= \frac{2}{5}+\frac{22}{9} \div \left[\frac{2}{27}+\frac{25}{9}\right]-\frac{4}{5}$$

$$= \frac{2}{5}+\frac{22}{9} \div \frac{77}{27}-\frac{4}{5}$$

$$= \frac{2}{5}+\frac{6}{7}-\frac{4}{5}$$

$$= \frac{16}{35}$$

29. (C) $? = 1+\left[1\div\left\{\frac{5}{4}-1\div\left(\frac{13}{3}-\frac{1}{3}\right)\right\}\right]$

$$= 1+\left[1\div\left\{\frac{5}{4}-1\div 4\right\}\right]$$

$$= 1+\left[1\div\left\{\frac{5}{4}-\frac{1}{4}\right\}\right]$$

$$= 1+\frac{1}{1}=2$$

30. (B) $? = 4.59\times\frac{1.8}{3.6}+0.6-\frac{1}{5}$

$$= 2.295+0.6-0.2$$

$$= 2.295+0.4$$

$$= 2.695$$

●●●

Scanned by CamScanner

RATIO AND PROPORTION

Rule I—To find Compound Ratio :

Ratios are compounded by multiplying together the antecedents for a new antecedent and the consequents for a new consequent.

Note—(A) When the ratio 5 : 4 is compounded with itself the resulting ratio is $5^2 : 4^2$. It is called the duplicate ratio of 5 : 4 similarly, $5^3 : 4^3$ is the triplicate ratio of 5 : 4, Also $\sqrt{5} : \sqrt{4}$ is subduplicate ratio of 5 : 4. $x^{\frac{1}{3}} : y^{\frac{1}{3}}$ is subtriplicate ratio of x and y.

(B) The number of times one quantity contains another quantity of the same kind is called the ratio of the two quantities. The ratio 5 to 4 is written as 5 : 4 or $\frac{5}{4}$. 5 and 4 are called the antecedent and the second the consequent. In the ratio 5 : 4, 5 is the antecedent and 4 is the consequent.

(C) If 5 : 4 be the given ratio, then $\frac{1}{5} : \frac{1}{4}$ or 5 : 4 is called its inverse or reciprocal ratio.

(D) If the antecedent = the consequent, the ratio is called the ratio of equality; as 5 : 5.

(E) If the antecedent > the consequent the ratio is called the ratio of greater inequality; as 5 : 4.

(F) If the antecedent < the consequent, the ratio is called the ratio of less inequality; as 4 : 5.

Example 1. Find the ratio compounded of the four ratios :

5 : 4, 9 : 13, 26 : 10 and 2 : 15.

Solution : The required ratio

$$= \frac{5 \times 9 \times 26 \times 2}{4 \times 13 \times 10 \times 15} = \frac{3}{10}$$

Example 2. What will be the cost of 32 metres of cloth if 60 meters' cost is Rs. 135 ?

Solution : Let the cost of 32 metres cloth be Rs. x

$\therefore \quad 60 : 32 :: 135 : x$

or, $\quad \frac{60}{32} = \frac{135}{x}$

or, $\quad x = \frac{32 \times 135}{60}$

$= \text{Rs. } 72$

Example 3. In a mixture of 35 litres, the ratio of milk and water is 4 : 1. An other 7 litres of water is added to the mixture. Find the ratio of milk and water in the resulting mixture.

Solution : Ratio of milk and water = 4 : 1

Milk in the mixture $= 35 \times \frac{4}{5}$

$= 28$ litres

Water in the mixture $= 35 \times \frac{1}{5}$

$= 7$ litres

In the new mixture milk = 28 litres

In the new mixture & water = 7 + 7

= 14 litres

Ratio = 28 : 14

i.e. = 2 : 1

EXERCISE 5

1. Two numbers are in the ratio of 3 : 1. If sum of these two numbers is 440, find the numbers.
   (A) 100, 90 (B) 330, 110
   (C) 111, 200 (D) 113, 220
   (E) None of these
2. A bag contains rupee, fifty paise and twenty five paise coins whose values are in the proportion of 2 : 3 : 4. If the total number of coins are 480 find the value of each coin and the total amount in rupees.
   (A) 10 and 160 (B) 15 and 190
   (C) 20 and 180 (D) 30 and 240
   (E) None of these

Scanned by CamScanner

3. If A : B = 3 : 4, B : C = 8 : 10, C : D = 15 : 17 then A : B : C : D will be—
(A) 9 : 8 : 15 : 16 (B) 9 : 12 : 15 : 17
(C) 8 : 9 : 15 : 17 (D) 12 : 9 : 17 : 18
(E) None of these

4. If A : B = 2 : 3, B : C = 4 : 5, C : D = 6 : 7 and D : E = 8 : 9 then find E's share of property of Rs. 34650.
(A) 9100 (B) 9250
(C) 9350 (D) 9450
(E) Data inadequate

5. A can do a piece of work in 12 days. B is 60% more efficient than A. Find the number of days it takes B to do the same piece of work.
(A) $7\frac{1}{2}$ days (B) $6\frac{1}{4}$ days
(C) $8\frac{1}{2}$ days (D) $9\frac{1}{2}$ days
(E) None of these

6. A sum of money is divided between two persons in the ratio of 3 : 5. If the share of one person is Rs. 20 less than that of the other, find the sum.
(A) Rs. 80 (B) Rs. 90
(C) Rs. 70 (D) Rs. 110
(E) None of these

7. In a mixture of 65 litres milk and water are in the ratio of 3 : 2. What are the quantities of milk and water in the mixture ?
(A) 39, 20 (B) 39, 26
(C) 49, 35 (D) 21, 14
(E) None of these

8. Kamla is 16 years old and Arti is 24 years. Find the ratio of Arti's age to Kamla's.
(A) 2 : 3 (B) 3 : 2
(C) 4 : 6 (D) 6 : 5
(E) None of these

9. Vivek's height was 1 m, 15 cm. at the beginning of a year. He grew 5 cm. during the year. What is the ratio of his height at the beginning of the year to his height at the end of the year ?
(A) 3 : 4 (B) 4 : 5
(C) 2 : 3 (D) 23 : 24
(E) None of these

10. The ratio of the number of the Hindu boys to that of Muslim boys in a class is 5 : 2. If there are 20 Muslim boys, find the number of boys in the class.
(A) 50 (B) 60
(C) 70 (D) 80
(E) None of these

11. If an alloy contains copper and zinc in the ratio of 7 : 13, what is the percentage quantity of copper in the alloy ?
(A) 25% (B) 30%
(C) 35% (D) 45%
(E) None of these

12. The sum of three numbers is 98. If the ratio between the first and second be 2 : 3 and that between the second and third be 5 : 8, then find the second number.
(A) 20 (B) 25
(C) 27 (D) 30
(E) None of these

13. If 60 metres of cloth costs Rs. 135, find the cost of 42 metres of cloth.
(A) Rs. 60 (B) Rs. 120
(C) Rs. 50 (D) Rs. 72
(E) None of these

14. At Rs. 125 a quintal, the annual expenditure of a family on wheat is Rs. 750. What will the family have to spend if the wheat costs Rs. 130 a quintal ?
(A) Rs. 800 (B) Rs. 780
(C) Rs. 750 (D) Rs. 640
(E) None of these

15. 3 tables or 8 chairs cost Rs. 216. What will 10 chairs and 10 tables cost ?
(A) Rs. 880 (B) Rs. 990
(C) Rs. 860 (D) Rs. 760
(E) None of these

16. In a bag there are coins of 25 paise, 10 paise and 5 paise in the ratio 1 : 2 : 3. If there are in all Rs. 30/- in the bag, how many coins of 5 paise are there ?
(A) 50 (B) 100
(C) 125 (D) 150
(E) None of these

Scanned by CamScanner

17. From 9 a.m. to 2 p.m. the temperature rose at a constant rate from 21°C to 36°C. What was the temperature at noon ?
(A) 28.5°C (B) 27°C
(C) 30°C (D) 32°C
(E) None of these

18. Three sons aged 10 years, 6 years and 3 years inherit their father's property in the ratio of their age. The youngest gets Rs. 75,000, what was the total property worth ?
(A) Rs. 225000 (B) Rs. 475000
(C) Rs. 750000 (D) Rs. 700000
(E) None of these

19. If the shadow of the pole is 15 m, then the length of the pole is 6 m. What will be the length of the pole when the shadow is 25 m long ?
(A) 15 m (B) 12 m
(C) 10 m (D) 20 m
(E) None of these

20. If A : B = 1 : 2, B : C = 3 : 4, C : D = 2 : 3 and D : E = 3 : 4 then find A : B : C : D : E
(A) 3 : 4 : 6 : 8 : 10
(B) 1 : 2 : 3 : 4 : 5
(C) 3 : 6 : 8 : 12 : 16
(D) 4 : 6 : 10 : 12 : 14
(E) None of these

21. The ratio of the money with Anju and Seema is 7 : 15 and that with Seema and Vinita is 7 : 16. If Anju has Rs. 490, how much money does Vinita have.
(A) Rs. 400 (B) Rs. 900
(C) Rs. 1500 (D) Rs. 2400
(E) None of these

22. Find the number which, when subtracted from the terms of the ratio 11 : 23 makes it equal to the ratio 3 : 7 ?
(A) 1 (B) 2
(C) 3 (D) 9
(E) None of these

23. Find the number which, when added to the terms of the ratio 11 : 23 makes it equal to the ratio 4 : 7.
(A) 4 (B) 5
(C) 6 (D) 7
(E) None of these

24. The price of a scooter and moped are in the ratio of 9 : 5. If a scooter costs Rs. 4200 more than a moped, find the price of the moped.
(A) 4250 (B) 4550
(C) 4850 (D) 5250
(E) None of these

25. The ratio between two numbers is 3 : 4. If each number be increased by 2, the ratio becomes 7 : 9. Find the numbers.
(A) 12 and 14 (B) 12 and 16
(C) 10 and 12 (D) 16 and 20
(E) None of these

ANSWERS WITH HINTS

1. (B) We know that if two numbers are in the ratio of $a : b$ and the sum of these numbers is x, then these numbers will be $\frac{ax}{a+b}$ and $\frac{bx}{a+b}$ respectively

Here $a = 3$, $b = 1$ and $x = 440$

$$\therefore \quad \text{First number} = \frac{ax}{a+b} = \frac{3 \times 440}{3+1} = 330$$

$$\text{Second number} = \frac{bx}{a+b} = \frac{1 \times 440}{3+1} = 110$$

2. (C) Number of coins

$$= \frac{\text{Amount in rupees}}{\text{Value of coins in rupees}}$$

$$\therefore \text{Number of 1 rupee coin} = \frac{2x}{1}$$

$$\text{Number of 50 paise coin} = \frac{3x}{\frac{1}{2}}$$

$$\text{Number of 25 paise coin} = \frac{4x}{\frac{1}{4}}$$

$$\therefore \quad 2x + 6x + 16x = 480 \text{ (Given)}$$

$$\therefore \quad x = 20$$

$$\therefore \quad \text{Value of 1 rupee coin} = 2x = \text{Rs. } 40$$

$$\text{Value of 50 paise coin} = 3x = \text{Rs. } 60$$

$$\text{Value of 25 paise coin} = 4x = \text{Rs. } 80$$

Value of total amount = Rs. 180 in the bag

Scanned by CamScanner

3. (B) $A : B = 3 : 4$

$B : C = 8 : 10$

$C : D = 15 : 17$

$\therefore A : B : C : D = 3 \times 8 \times 15 : 4 \times 8 \times 15 : 4 \times 10 \times 15 : 4 \times 10 \times 17$

$= 9 : 12 : 15 : 17$

4. (D) $\because A : B : C : D : E$

$= 384 : 576 : 720 : 840 : 945$

$\therefore$ Share of E $= \dfrac{945 \times 34650}{384+576+720+840+945}$

$=$ Rs. 9450

5. (A)

	A	:	B
Efficiency	100	:	160
Days	160	:	100
or,	8	:	5

$\therefore$ The number of days taken by B

$= \dfrac{12}{8} \times 5$

$= \dfrac{15}{2} = 7\dfrac{1}{2}$ days.

6. (A) We know that if two quantities X and Y are in the ratio $x : y$, then $X + Y : X - Y :: x + y : x - y$

From above rule,

$\dfrac{\text{Sum}}{20} = \dfrac{3+5}{5-3}$

$\therefore$ Sum $= \dfrac{8}{2} \times 20$

Rs. $= 80$

7. (B) Quantity of milk in the mixture

$= \dfrac{ax}{a+b} = \dfrac{3 \times 65}{5} = 39$

Quantity of water in the mixture

$= \dfrac{bx}{a+b} = \dfrac{2 \times 65}{5} = 26$

$\therefore$ Quantity of milk and water = 39, 26

8. (B) Kamla is 16 yrs.

Arti is 24 yrs.

Arti's age : Kamla's age = 24 : 16 = 3 : 2

9. (D) Present height of Vivek

= 1 m. 15 cm. = 115 cm.

Height of Vivek at the end of the year

= 1 m. 20 cm. = 120 cm.

Height at the beginning of the year : height at the end of the year

$= 115 : 120$

$= 23 : 24$

10. (C)

11. (C) The percentage quantity of copper in the alloy. $= \left(\dfrac{a}{a+b}\right) \times 100\%$

$= \left(\dfrac{7}{7+13}\right) \times 100$

$= 35\%$.

12. (D) The ratio among the three numbers can be find through this formula

$$\begin{array}{rcl} a & : & b \\ & & c : d \\ \hline ac & : & bc : bd \\ \textit{i.e.,}\ 2 & : & 3 \\ & & 5 : 8 \\ \hline 10 & : & 15 : 24 \end{array}$$

$\therefore$ The second number

$= \dfrac{98}{10+15+24} \times 15$

$= 30$

13. (E) 14. (B) 15. (B) 16. (E)

17. (C) Rise in temperature from 9 a.m. to 2 p.m.

$= 36 - 21$

$= 15°C$

$\because$ Rise in temperature in 5 hours

$= 15°C$

$\therefore$ Temperature at noon

$= 21 + 3 \times 3$

$= 30°C$

18. (B) Let the total property be of Rs. x

Ratio in the ages of the sons

$= 3 : 6 : 10$

$\therefore$ Sum of ratio $= 3 + 6 + 10$

$= 19$

But the property of the youngest son

= Rs. 75000

$\therefore$ $75000 = \dfrac{x \times 3}{19}$

Scanned by CamScanner

$\therefore \quad x = \dfrac{75000 \times 19}{3}$

$= \text{Rs. } 475000.$

19. (C)

20. (C) A : B : C : D : E

$= 1 \times 3 \times 2 \times 3 : 2 \times 3 \times 2 \times 3 : 2 \times 4 \times 2 \times 3 : 2 \times 4 \times 3 \times 3 : 2 \times 4 \times 3 \times 4$

$= 3 : 6 : 8 : 12 : 16$

21. (D)

Anju	:	Seema	:	Vinita
7	:	15		
		7	:	16
49	:	105	:	240

The ratio money with Anju, Seema and Vinita is 49 : 105 : 240

We see that 49 = Rs. 490

$\therefore$ 240 = Rs. 2400

22. (B) Here, $a : b = 11 : 23$

$c : d = 3 : 7$

$\therefore$ The required number

$= \dfrac{bc - ab}{c - d}$

[$\because$ A number which, when subtracted from the terms of the ratio $a : b$ makes it equal to the ratio $c : d$ is $\dfrac{bc - ad}{c - d}$]

$= \dfrac{23 \times 3 - 11 \times 7}{3 - 7} = \dfrac{8}{4}$

$= 2$

23. (B) Here, $a : b = 11 : 23$

$c : d = 4 : 7$

$\therefore$ The required number

$= \dfrac{ad - bc}{c - d}$

[$\because$ A number which, when added to the terms of the ratio $a : b$ makes it equal to the ratio $c : d$ is $\dfrac{ad - bc}{c - d}$]

$= \dfrac{11 \times 7 - 23 \times 4}{4 - 7}$

$= \dfrac{-15}{-3}$

$= 5$

24. (D) **TRICKS**—If two quantities X and Y are in the ratio $x : y$, then X + Y : X – Y : : $x + y : x - y$ we have,

$9 - 5 = \text{Rs. } 4200$

$\therefore \quad 5 = \dfrac{4200}{9 - 5} \times 5$

$= \text{Rs. } 5250$

25. (B) **TRICKS**—The ratio between two number is $a : b$. If each number be increased by x, the ratio becomes $c : d$. Then, the two numbers are given as $\dfrac{xa\,(c - d)}{ad - bc}$ and $\dfrac{xb\,(c - d)}{ad - bc}$

where $c - a \neq d - b$

$\therefore$ The numbers are,

$\dfrac{2 \times 3\,(7 - 9)}{3 \times 9 - 4 \times 7}$ and $\dfrac{2 \times 4\,(7 - 9)}{3 \times 9 - 4 \times 7}$

or, 12 and 16.

●●●

Scanned by CamScanner

PERCENTAGE

Rule 1 :

To express any fraction $\frac{a}{b}$ in rate per cent, we multiply $\frac{a}{b}$ by 100 *i.e.* $\frac{a}{b} \times 100\%$.

Example 1. What percentage is equivalent to $\frac{5}{12}$?

Solution : $\frac{5}{12} \times 100 = 41\frac{2}{3}\%$.

Rule 2 :

To express rate per cent 'a' as a fraction, we divide 'a' by 100 *i.e.*, $\frac{a}{100}$ is the required fraction.

Example 2. What fraction is $6\frac{1}{2}$ per cent ?

Solution : $6\frac{1}{2}\% = \frac{6\frac{1}{2}}{100} = \frac{13}{200}$.

Rule 3 :

If the a% of a number (N) is the result (R), then the value of percentage (a)

$$= \frac{\text{Result (R)}}{\text{Original Number (N)}} \times 100.$$

Example 3. 0.125 is equal to what per cent of $1\frac{7}{28}$?

Solution : Here $1\frac{7}{28}$ = Original Number (N) and 0.125 = Result (R).

Using the above formula,

$$\text{Value of percentage} = \frac{0.125}{1\frac{7}{28}} \times 100$$

$$= \frac{0.125 \times 28 \times 100}{35} = 10$$

Example 4. If the income of Dinesh is 150% higher than Mahesh. Then by what per cent the income of Mahesh is less than Dinesh ?

Solution : Suppose the income of Mahesh = Rs. 100

$\therefore$ The income of Dinesh = 100 + 150 = Rs. 250

$\because$ The income of Dinesh is Rs. 250, then income of Mahesh = Rs. 100

$\therefore$ The income of Dinesh is Rs. 100, then income of Mahesh $= \frac{100 \times 100}{250}$ = Rs. 40

$\therefore$ The difference in the income of Dinesh and Mahesh = 100 – 40 = Rs. 60

Therefore, the income of Mahesh is 60% less than Dinesh.

Example 5. What is 35% of 800 ?

Solution : 35% of 800 $= \frac{35}{100}$ of 800

$$= \frac{35}{100} \times 800$$

$$= 280$$

Example 6. What is that number whose 15% is 1800 ?

Solution : Suppose that number is x

$\therefore$ $15\%\ x = \frac{15x}{100}$

or, $\frac{15x}{100} = 1800$

or, $x = \frac{1800 \times 100}{15}$

$= 12000$

Example 7. What is the % of $\frac{2}{5}$?

Scanned by CamScanner

Solution : The per cent of $\frac{2}{5} = \frac{2}{5} \times \frac{1}{100}$

$= 0.004.$

EXERCISE 6

1. 0.625 is equal to what per cent of $1\frac{7}{28}$?
   (A) 25% (B) 30%
   (C) 40% (D) 50%
   (E) None of these
2. 25% of a number is 20, what is 40% of that number ?
   (A) 60 (B) 80
   (C) 90 (D) 55
   (E) None of these
3. Find the value of $12\frac{1}{2}$% of Rs. 400—
   (A) 48 (B) 44
   (C) 55 (D) 60
   (E) None of these
4. Satyam and Sanjay appeared in an examination. If the difference of their marks is 60 and percentage difference of their marks is given as 30. Find the full marks for which examination has been held.
   (A) 150 (B) 175
   (C) 200 (D) 400
   (E) None of these
5. The daily wage is increased by 20% and a person now gets Rs. 24 per day. What was his daily wage before the increase ?
   (A) Rs. 10 (B) Rs. 20
   (C) Rs. 40 (D) Rs. 60
   (E) None of these
6. To find 20% of a number, the number should be multiplied by—
   (A) $\frac{1}{2}$ (B) $\frac{1}{5}$
   (C) $\frac{1}{3}$ (D) $\frac{1}{4}$
   (E) None of these
7. Gulab Chand whose salary is Rs. 1000 per month, receives an increase of 6%. What is his new salary ?
   (A) Rs. 1060 (B) Rs. 1012
   (C) Rs. 1600 (D) Rs. 1096
   (E) None of these
8. 60 is 12% of ?
   (A) 300 (B) 500
   (C) 400 (D) 25
   (E) None of these
9. 8% of Rs. 400 = ?
   (A) Rs. 32.00 (B) Rs. 3200.00
   (C) Rs. 50.00 (D) Rs. 4.00
   (E) None of these
10. The daily wage is decreased by 15% and a person now get Rs. 17 per day. What was his daily wage before the decrease ?
    (A) Rs. 20 (B) Rs. 30
    (C) Rs. 40 (D) Rs. 60
    (E) None of these
11. Two numbers are respectively 25% and 50% more than a third. What percentage is the second of the first ?
    (A) 100% (B) 110%
    (C) 120% (D) 130%
    (E) None of these
12. A man loses $12\frac{1}{2}$% of his money and after spending 70% of the remainder, he is left with Rs. 210. How much had he at first ?
    (A) Rs. 650 (B) Rs. 700
    (C) Rs. 800 (D) Rs. 900
    (E) None of these
13. A man deposited 50% of the initial amount to his locker. And again after some time he deposited 20% of the increased amount. Now the amount becomes Rs. 18000. How much was the initial amount ?
    (A) Rs. 9000 (B) Rs. 10000
    (C) Rs. 11000 (D) Rs. 12000
    (E) None of these
14. If the annual increase in the population of a town is 4% and the present number of people is 15625, what will the population be in 3 years ?
    (A) 16500 (B) 17000
    (C) 17556 (D) 18000
    (E) None of these

Scanned by CamScanner

15. If the annual decrease in the population of a town is 5% and the present number of people is 40000, what will the population be in 2 years ?

(A) 20010 (B) 26100
(C) 27600 (D) 28100
(E) None of these

16. If the price is increased by 10% and the sale is decreased by 5%, then what will be the effect on income ?

(A) 2.5% (B) 3%
(C) 4% (D) 4.5%
(E) 6%

17. If the price is decreased by 12% and sale is increased by 10%, then what will be the effect on income ?

(A) 3% (B) 3.2%
(C) 4.2% (D) 6%
(E) None of these

18. A student has to secure 40% marks to get through. If he gets 40 marks and fails by 40 marks, find the maximum marks set for the examination.

(A) 150 (B) 400
(C) 200 (D) 550
(E) None of these

19. If one of the sides of a rectangle is increased by 20% and the other is increased by 5%, find the per cent value by which the area changes?

(A) 20% (B) 26%
(C) 30% (D) 52%
(E) None of these

20. What quantity of water should be added to reduce 9 litres of 50% acidic liquid to 30% acidic liquid ?

(A) 6 litres (B) 7 litres
(C) 8 litres (D) 9 litres
(E) None of these

21. When the price of radio was reduced by 20%, the sale increased by 80%. What was the net effect on sale ?

(A) 44% increase (B) 44% decrease
(C) 66% increase (D) 75% increase
(E) 60% increase

22. Mr. Chunilal invests 65% of his money in machinery and 20% in raw material. He is left with Rs.1305 cash in hand. How much money did he spend ?

(A) Rs. 8700 (B) Rs. 7395
(C) Rs. 8495 (D) Rs. 8295
(E) None of these

23. A man's wage was reduced by 50% and again the reduced wage was increased by 50%. What is his loss ?

(A) Nothing (B) 25%
(C) 40% (D) 50%
(E) 30%

24. There is 15 litres of a 20% alcohol mixture, 3 litres of water are added to it. What is the strength of the resultant volume ?

(A) 17% (B) 15%
(C) 18.5% (D) 16.67%
(E) 20%

25. What single discount is equivalent to two successive discount of 10% and 15% ?

(A) 20% (B) 40%
(C) 23.5% (D) 30%
(E) None of these

26. 6 students in a class failed in maths. This represents $16\frac{2}{3}\%$ of the class. How many students were there in the class ?

(A) 48 (B) 36
(C) 42 (D) 30
(E) None of these

27. If A's salary is 10% more than B, then B's salary is less than A by—

(A) 10% (B) $9\frac{1}{11}\%$
(C) $11\frac{1}{9}\%$ (D) $9\frac{10}{11}\%$
(E) None of these

28. Jayesh purchased 15 dozen toys from a company. The company offers 5% discount on printed price of the first 5 dozen toys and 10% discount on the next 10 dozen toys to Jayesh. If the total discount is Rs. 12.50, what was the printed price of the toys per dozen ?

(A) Rs. 1.25 (B) Rs. 15
(C) Rs. 10 (D) Rs. 12.50
(E) None of these

Scanned by CamScanner

29. Praveens income increases by 25% and becomes $1\frac{1}{2}$ times to that of Rakesh. What were the total emoluments of Praveen before the increase ?

(A) Rs. 1875
(B) Rs. 3750
(C) Rs. 120
(D) Cannot be determined
(E) None of these

30. If two numbers are respectively 20% and 50% of third number, what % is the first number of the second one ?

(A) 30 (B) 10
(C) 20 (D) 40
(E) None of these

31. In an examination, 35% of the total students failed in Hindi, 45% failed in English and 20% in both. What per cent of the total students passed in both the subjects ?

(A) 20 (B) 10
(C) 30 (D) 40
(E) None of these

32. In a recruitment test for the post of bank probationary officers, 70% of those passed in the written test qualified in the skill test, 65% qualified in the interview, 27% failed in both and 248 qualified in both. Therefore, total number of candidates passed in the written test is—

(A) 450 (B) 350
(C) 550 (D) 250
(E) None of these

33. If A's salary is 20% less than B's salary, B's salary is 20% above C's salary and if A's and B's combined salary Rs. 540, then C's salary will be—

(A) Rs. 300 (B) Rs. 280
(C) Rs. 240 (D) Rs. 200
(E) None of these

34. A shopkeeper buys respectively 106 kg and 94 kg of two kinds of tea at the rates Rs. 25.50 per kg. and Rs. 30.50 per kg. He mixes both kinds of tea and sells the mixture at Rs. 33.42 per kg. What is his gain per cent ?

(A) 2 (B) 20
(C) 25 (D) 40
(E) None of these

35. Find a single equivalent increase, if a number is successively increased by 10%, 15% and 20%.

(A) 49.5% (B) 50.8%
(C) 51.8% (D) 52.6%
(E) None of these

36. Split the number 120 into two parts such that one part is 20% of the other.

(A) 100 and 10 (B) 90 and 20
(C) 150 and 30 (D) 115 and 60
(E) None of these

37. Find a single discount equivalent to a discount series of 20%, 10% and 5%—

(A) 30.6% (B) 36.5%
(C) 31.6% (D) 41.6%
(E) None of these

38. The price of sugar is increased by 20% and a house wife reduced her consumption of sugar by 20% and hence her expenditure on sugar—

(A) Remains unaltered
(B) Decreases by 20%
(C) Decreases by 4%
(D) Increases by 4%
(E) None of these

39. A shopkeeper marks the price at 15% higher than the original price. Due to increase in demand, he further increases the price by 10%. How much % profit will he get ?

(A) 20% (B) 22%
(C) 26.5% (D) 30%
(E) None of these

40. The salary of a worker is first increases by 10% and thereafter it was reduced by 10%. What was the change in his salary ?

(A) 8% (B) 1%
(C) 5% (D) 10%
(E) None of these

ANSWERS WITH HINTS

1. (D) **TRICKS—**If the x % of a number (N) is the result (R), then the value of percentage

$$x = \frac{\text{Result (R)}}{\text{Original Number (N)}} \times 100$$

Scanned by CamScanner

$\therefore$ Value of percentage

$$= \frac{0.625}{1\frac{7}{28}} \times 100$$

$$= 50\%$$

2. (B) **TRICKS**—If x % and y % of a number (N) are x_1 and y_1 respectively, then following relationship exists : $\frac{x_1}{x} = \frac{y_1}{y} = \frac{N}{100}$

Here $x_1 = 20$, $x = 25$, $y = 40$ and $y_1 = ?$

$$\therefore \quad \frac{x_1}{x} = \frac{y_1}{y}$$

$$\Rightarrow \quad \frac{20}{25} = \frac{y_1}{40}$$

$$\therefore \quad y_1 = 32$$

$$\text{Number (N)} = \frac{x_1}{x} \times 100 = \frac{20}{25} \times 100$$

$$= 80$$

3. (E) $12\frac{1}{2}$% of Rs. 400 $= \frac{25}{2 \times 100} \times 400$

$= $ Rs. 50

4. (C) Full marks

$$= \frac{\text{Difference of their marks}}{\text{Percentage difference their marks}} \times 100$$

$$= \frac{60}{30} \times 100 = 200$$

5. (B) Required original daily wage

$$= \frac{\text{increased daily wage}}{100 + \text{\% increase}} \times 100$$

$$= \frac{24}{120} \times 100$$

$= $ Rs. 20

6. (B)

7. (A) 6% of Rs. 1000 $= \frac{6}{100} \times 1000$

$= $ Rs. 60

$\therefore$ Increased salary $= 1000 + 60$

$= $ Rs. 1060

8. (B) 9. (A)

10. (A) Required original daily wage

$$= \frac{\text{Decreased daily wage}}{100 - \text{\% decrease}} \times 100$$

$$= \frac{17}{100 - 15} \times 100$$

$= $ Rs. 20

11. (C) **TRICKS**—The required value

$$= \frac{100 + y}{100 + x} \times 100\% \text{ of first}$$

$$= \frac{100 + 50}{100 + 25} \times 100$$

$$= \frac{150}{125} \times 100$$

$$= 120\%$$

12. (C) **TRICKS**—x % of a quantity is taken by the first, y % of the remaining is taken by the second and z % of the remaining is taken by third person. Now if Rs A is left in the fund, then there was $\frac{A \times 100 \times 100 \times 100}{(100 - x)(100 - y)(100 - z)}$ in the beginning

$\therefore$ His initial money

$$= \frac{210 \times 100 \times 100}{(100 - 12.5) \times (100 - 70)}$$

$$= \frac{210 \times 100 \times 100}{87.5 \times 30}$$

$= $ Rs. 800

13. (B) His initial amount

$$= \frac{18000 \times 100 \times 100}{(100 + 50)(100 + 20)}$$

$= $ Rs. 10000

14. (C) The required population

$$= 15625 \left(1 + \frac{4}{100}\right)^3$$

$$= 15625 \times \frac{26}{25} \times \frac{26}{25} \times \frac{26}{25}$$

$$= 17576$$

15. (B) Population in two years

$$= P\left(1 - \frac{r}{100}\right)^n$$

$$= 40000\left(1 - \frac{5}{100}\right)^2$$

$$= \frac{40000 \times 19 \times 19}{20 \times 20}$$

$$= 26100$$

Scanned by CamScanner

16. (D) % Effect

= Increase % value – Decrease % value

$$- \frac{\text{Increase \% value} \times \text{Decrease \% value}}{100}$$

$$= 10 - 5 - \frac{10 \times 5}{100} = \frac{1000 - 500 - 50}{100} = \frac{450}{100}$$

$= 4.5\%$

17. (B) % Effect $= 10 - 12 - \frac{12 \times 10}{100}$

$$= \frac{1000 - 1200 - 120}{100}$$

$$= -\frac{320}{100}$$

$= -3.2\%$

∴ His income is decreased by 3.2%.

18. (C) Maximum marks $= \frac{100\,(y + z)}{x}$

$$= \frac{100\,(40 + 40)}{40}$$

$= 200$

19. (B) **TRICKS—**If one of the sides of a rectangle is increased by x% and the other is increased by y%, then the per cent value by which area changes is given by $\left[x + y + \frac{xy}{100}\right]$% increases.

∴ % increase $= 20 + 5 + \frac{20 \times 5}{100} = 26\%$.

20. (A) **TRICKS—**In 'A' litres of x% acidic liquid, the amount of water to be added to make y% acidic liquid is $\frac{A(x - y)}{y}$ litres.

∴ Quantity of water to be added

$$= \frac{9\,(50 - 30)}{30}$$

$$= \frac{450 - 270}{30}$$

$= 6$

21. (A) Let the price of radio before reduction be Rs. 100 and number of radios sold be 100.

∴ Money received $= 100 \times 100$

= Rs. 10000

On reduction the price of radio

$= 100 - 20$

= Rs. 80

and the number of the radios sold

$= 100 + 80$

$= 180$

∴ Money received after reduction

$= 180 \times 80$

= Rs. 14400

∴ Percentage increase

$$= \frac{(14400 - 10000) \times 100}{10000}$$

$= 44\%$

22. (B) Suppose chunilal had Rs. 100

∴ Money invested in machinery = Rs. 65

and money invested in raw material

= Rs. 20

∴ Total money spent $= 65 + 20$

= Rs. 85

∴ Money left $= 100 - 85$

= Rs. 15

If Rs.15 are left then money spent = Rs. 85

∴ Rs. 1305 are left then money spent

$$= \frac{85 \times 1305}{15}$$

= Rs. 7395

23. (B)

24. (C) The amount of alcohol in 15 litres of mixture $= \frac{15 \times 20}{100} = 3$ litres

Volume of mixture on addition of 3 litres of water $= 15 + 3 = 18$ litres

Percentage of alcohol in new mixture

$$= \frac{3 \times 100}{18}$$

$= 16.67\%$

25. (D) 26. (B) 27. (B)

28. (C) Let the printed price of the toys per dozen be Rs. 100

∴ Discount at 5% on 5 dozen

$$= \frac{5 \times 100 \times 5}{100} = \text{Rs. } 25$$

and discount at 10% on next 10 dozen

$$= \frac{10 \times 100 \times 10}{100} = \text{Rs. } 100$$

∴ Total discount $= 100 + 25$

= Rs. 125

Scanned by CamScanner

If Rs. 125 is the total discount, the printed price of the toys per dozen

$$= \text{Rs. } 100$$

$\therefore$ 12.5 is the total discount, the printed price of the toys per dozen

$$= \frac{100 \times 12.5}{125}$$

$$= \text{Rs. } 10 \text{ per dozen}$$

29. (D) 30. (D) 31. (D)

32. (E) **TRICKS—**

Qualified in skill test = 70%

Qualified in Interview = 65%

Failed in skill test = 100% – 70%
= 30%

Failed in Interview = 100% – 65%
= 35%

Failed in both = 27%

$\therefore$ Failed in skill test only = (30–27)% = 3%

$\therefore$ Failed in Interview only = (35–27)% = 8%

$\therefore$ Passed in both = 100 – (27+3+8)
= 62%

If 62 candidates passed in both, total No. of candidates = 100

$\therefore$ 248 candidates qualified in both, total No. of candidates passed in written test

$$= \frac{100}{62} \times 248 = 400$$

33. (E) Let the salary of the A be Rs. 100

$\therefore$ Salary of A = 100 – 20 = Rs. 80

and salary of C = 100 + 20 = Rs. 120

$\therefore$ Total salary of A and B
= 100 + 80 = Rs. 180

If total salary of A and B is Rs. 180, then salary of C = Rs. 120

$\therefore$ Total salary of A and B is Rs. 540

then salary $= \frac{120 \times 540}{180}$

= Rs. 360

34. (B)

35. (C) **TRICKS—**If the number is successively increased by x%, y% and z%, then single equivalent increase in that number will be

$$\left[(x+y+z) + \left(\frac{xy+yz+zx}{100}\right) + \frac{xyz}{100^2}\right]\%$$

$\therefore$ The required number

$$= (10+15+20) + \frac{(10\times15+15\times20+10\times20)}{100} + \frac{(10\times15\times20)}{10000}$$

$$= 45 + \frac{65}{10} + \frac{3}{10} = \frac{450+65+3}{10}$$

$$= 51.8\%$$

36. (E) **TRICKS—**The two split parts are

$\frac{100}{100+P} \times N$ and $\frac{P}{100+P} \times N$

where N = split number and P = one part

$\therefore$ The numbers are $\frac{100}{100+20} \times 120$

and $\frac{20}{100+20} \times 120$ *i.e.*, 100 and 20.

37. (C) **TRICKS—**The equivalent successive discount

$$= \left[x+y+z - \frac{xy+yz+zx}{100} + \frac{xyz}{100^2}\right]\%$$

$$= \left[20+10+5 - \frac{20\times10+10\times5+5\times20}{100} + \frac{20\times10\times5}{10000}\right]$$

$= 31.6\%$

38. (C) **TRICKS—**Per cent Expenditure change

$$= -\left(\frac{\text{Common increase or decrease}}{10}\right)^2\%$$

$\therefore$ Expenditure decrease $= -\left(\frac{20}{10}\right)^2 = -4\%$

$\therefore$ Expenditure decreases by 4%.

39. (C) **TRICKS—**

$$\% \text{ profit} = \left[x + y + \frac{xy}{100}\right]\%$$

$$= 15 + 10 + \frac{15\times10}{100}$$

$$= 26.5\%$$

40. (B) **TRICKS—**If the value of a number is first increased by x% and later decreased by x%, then net change is always a decreased which is equal to x% of x or $\frac{x^2}{100}$

$\therefore$ There is decrease in his salary $= \frac{(10)^2}{100}$

$= 1\%$.

●●●

Scanned by CamScanner

SQUARE ROOT

Square root of a given number is that number, the product of which by itself is equal to the given number. To denote the square root of a number x, we use radical sign $\sqrt{x}$.

Thus $\sqrt{9} = 3, \sqrt{25} = 5, \sqrt{100} = 10$ and $\sqrt{0.16} = 0.4$

When a given number is perfect square, we resolve, it into prime factors and take the product of prime factors choosing one out of every pair.

Example 1. Find the square root of 4624.

Solution : Resolving 4624 into prime factors.

2	4624
2	2312
2	1156
2	578
17	289
	17

$$\therefore \quad 4624 = 2 \times 2 \times 2 \times 2 \times 17 \times 17$$
$$= 2^2 \times 2^2 \times 17^2$$
$$\therefore \quad \sqrt{4624} = \sqrt{2^2 \times 2^2 \times 17^2}$$
$$= 2 \times 2 \times 17$$
$$= 68$$

General Method :

Example 2. Extract the square root of 1734489.

Solution :

1	$\overline{1}$ $\overline{73}$ $\overline{44}$ $\overline{89}$ (1317
	1
23	73
	69
261	444
	261
267	18389
	18389
	xxxxx

$$\therefore \quad \sqrt{1734489} = 1317$$

Square Root of Decimal Fractions

We make even number of decimal places by affixing a zero, if necessary. Now, we make off periods and extract the square root as shown in the given below example.

Example 3. Evaluate $\sqrt{176.252176}$.

Solution : Here the number of decimal places is already even. So, we mark of periods and proceed.

1	$\overline{1}$ $\overline{76}$. $\overline{25}$ $\overline{21}$ $\overline{76}$ (13.276
	1
23	76
	69
262	725
	524
2647	20121
	18529
26546	159276
	159276
	xxxxx

$$\therefore \quad \sqrt{176.252176} = 13.276$$

Square root of a vulgar fraction—We multiply the numerator and denominator by the denominator and extract the square root by using formulae— $\sqrt{\frac{x}{y}} = \frac{\sqrt{x}}{\sqrt{y}}$

Example 4. Find the value of $\sqrt{\left(\frac{3}{7}\right)}$ up to 3 places of decimals.

Solution :

$$\sqrt{\left(\frac{3}{7}\right)} = \sqrt{\frac{3 \times 7}{7 \times 7}} = \frac{\sqrt{21}}{\sqrt{(7 \times 7)}}$$

Scanned by CamScanner

$$= \frac{\sqrt{21}}{7}$$

4	21	(4.582
	16	
85	500	
	425	
908	7500	
	7264	
9162	23600	
	18324	

$\therefore \quad \sqrt{21} = 4.582$

Hence $\sqrt{\frac{3}{7}} = \frac{\sqrt{21}}{7} = \frac{4.582}{7}$

$= 0.654$

Example 5. Find the square root of 3572100.

Solution :

	1 8 9 0
1	3 57 21 00
	1
28	257
	224
369	3321
	3321
	×

Hence, the square root of 3572100 is ± 1890.

Example 6. Find the square root of 0.9.

Solution :

	.94
9	.90 00
	81
184	900
	736
	164

$\therefore \sqrt{.9000} = \pm .94$ approximately.

Example 7. Find the value of $\sqrt{1\frac{17}{64}}$.

Solution : $\sqrt{1\frac{17}{64}} = \sqrt{\frac{81}{64}}$

$$= \sqrt{\frac{9 \times 9}{8 \times 8}} = \frac{9}{8}$$

$$= 1\frac{1}{8}$$

Example 8. Some persons contributed Rs. 1089. Each person gave as many rupees as they were in number. Find their number.

Solution : Suppose the number of persons were x

$\therefore \quad x \times x = 1089$

or $\quad x^2 = 1089$

$\therefore \quad x = \sqrt{1089}$

$= 33$

Hence, the number of persons = 33.

EXERCISE 7

1. $\left(\frac{1}{216}\right)^{-\frac{2}{3}} \div \left(\frac{1}{27}\right)^{-\frac{4}{3}} = ?$

   (A) $\frac{4}{3}$ (B) $\frac{4}{9}$

   (C) $\frac{5}{6}$ (D) $\frac{11}{4}$

   (E) None of these

2. $8^{\frac{5}{3}} \div (125)^{-\frac{2}{3}} = ?$

   (A) 100 (B) 300

   (C) 600 (D) 800

   (E) None of these

3. $\left(-\frac{1}{216}\right)^{-\frac{2}{3}} = ?$

   (A) 12 (B) 24

   (C) 36 (D) 48

   (E) None of these

4. A certain number of people collected Rs. 529. If each person contributed as many rupees as they were in number, find the number of persons.

   (A) 22 (B) 33

   (C) 21 (D) 23

   (E) 43

5. Find the length of one side of square whose area is 225 sq. metres.

   (A) 45 m. (B) 25 m.

   (C) 15 m. (D) 35 m.

   (E) None of these

Scanned by CamScanner

6. Find the least number by which when 128 is divided it becomes a perfect square.
(A) 4 (B) 2
(C) 8 (D) 16
(E) None of these

7. Which of the following number will not come in unit place if any number is squared ?
0, 6, 5, 7, 1
(A) 7 (B) 5
(C) 0 (D) 1
(E) 6

8. In a class the girls collected Rs. 250 for jawans. Each girl contributed as many ten paisa coins as they were in the number. Find their number.
(A) 25 (B) 50
(C) 100 (D) 80
(E) None of these

9. Find the least number by which when $5 \times 15 \times 21 \times 14$ is multiplied it becomes a perfect square.
(A) 2 (B) 15
(C) 75 (D) 3
(E) None of these

10. $(-2)^{(-2)^{(-2)}} = ?$
(A) 12 (B) 14
(C) 15 (D) 16
(E) None of these

11. $(343)^2 \div (343)^{\frac{4}{3}} = ?$
(A) 25 (B) 36
(C) 49 (D) 81
(E) None of these

12. Find the least number which when added to 624 makes it a perfect square.
(A) 3 (B) 2
(C) 5 (D) 4
(E) None of these

13. Find the value of $\sqrt{128 + \sqrt{260} - \sqrt{16}}$
(A) 16 (B) 22
(C) 18 (D) 12
(E) None of these

14. $\sqrt[3]{64} = ?$
(A) 2 (B) 4
(C) 8 (D) 16
(E) None of these

15. $\sqrt[3]{3} \times \sqrt[3]{4} = ?$
(A) $\sqrt[3]{4}$ (B) $\sqrt[3]{6}$
(C) $\sqrt[3]{12}$ (D) $\sqrt[3]{24}$
(E) None of these

16. Each student in a class contributed as many rupees as the number of students in the class for a picnic They school contributed Rs. 150 per teacher who led the trip. If the total amount collected was Rs. 1350 and the number of teachers who led the trip was 3, how many students were there in that class?
(A) 30 (B) 35
(C) 34 (D) 36
(E) None of these

17. In a class each body contributed as many paise as the number of boys so as to purchase a gift costing Rs. 13. If the teacher's contribution is Rs. 4, then the number of the boys in the class is—
(A) 3
(B) 30
(C) 90
(D) Cannot be determined exactly
(E) None of these

18. There are two grades A and B of workers in a workshop. Every worker contributes as many rupees as there are workers of his own category. If the total amount contributed is Rs. 196 including Rs. 16 contributed by the owner of the workshop, what is the total number of workers in that workshop ?
(A) 18 (B) 14
(C) 12 (D) 10
(E) None of these

19. A man plants 22801 trees in his garden. There were as many trees in one row as the number of rows. Find the number of rows.
(A) 171 (B) 751
(C) 151 (D) 161
(E) None of these

Scanned by CamScanner

20. $\sqrt{?\times 7}\times 18 = 84$
(A) 3 (B) 3.11
(C) 4.11 (D) 5
(E) None of these

21. $2+\sqrt{2}+\frac{1}{2\sqrt{2}}+\frac{1}{\sqrt{2}-2}=?$
(A) 1 (B) 2
(C) 3 (D) 4
(E) None of those

22. $\sqrt{\frac{67.6}{?}}=0.26$
(A) 26 (B) 100
(C) 1000 (D) 676
(E) None of these

23. $\sqrt{98}-\sqrt{50}=?\times\sqrt{2}$
(A) 1 (B) 2
(C) 3 (D) 4
(E) None of these

24. $\sqrt{1+\frac{25}{144}}=1+\frac{?}{12}$
(A) 0 (B) 1
(C) 2 (D) 3
(E) None of these

25. $\frac{\sqrt{121}}{11}\times\frac{15}{\sqrt{169}}\times\frac{13}{\sqrt{225}}=?$
(A) 1 (B) 25
(C) 35.96 (D) 40
(E) 45

ANSWERS WITH HINTS

1. (B) Given that

$$\left(\frac{1}{216}\right)^{-\frac{2}{3}}\div\left(\frac{1}{27}\right)^{-\frac{4}{3}}$$

$$\therefore \quad \left(\frac{216}{1}\right)^{\frac{2}{3}}\div\left(\frac{27}{1}\right)^{\frac{4}{3}} = (6^3)^{\frac{2}{3}}\div(3^3)^{\frac{4}{3}}$$

$$= 6^2\div 3^4=\frac{4}{9}$$

2. (D) $8^{\frac{5}{3}}\div(125)^{-\frac{2}{3}} = (2^3)^{\frac{5}{3}}\times(125)^{\frac{2}{3}}$

$= 32\times 25$

$= 800$

3. (C) $\left(-\frac{1}{216}\right)^{-\frac{2}{3}} = (-216)^{-\frac{2}{3}}$

$[(-6)^3]^{\frac{2}{3}} = (-6)^2 = 36$

4. (D)

5. (C) One side $=\sqrt{225}$

$= 15$ m

6. (B) $128 = \overline{2\times 2}\times\overline{2\times 2}\times\overline{2\times 2}\times 2$

Since one digit of 2 is not in pairs

$\therefore$ Reqd. answer is 2.

7. (A) 8. (B) 9. (A)

10. (D) $(-2)^{(-2)^{(-2)}} = \left(-\frac{1}{2}\right)^{(+2)^{(-2)}}$

$= \left(\frac{1}{4}\right)^{-2} = (4)^2$

$= 16$

11. (C) $\because \quad a^m\div a^n = a^{m-n}$

$\therefore\ (343)^2\div(343)^{\frac{4}{3}} = (343)^{2-\frac{4}{3}}$

$= (343)^{\frac{2}{3}} = [(7^3)]^{\frac{2}{3}}$

$= 7^2 = 49$

12. (E) 13. (D)

14. (B) $\sqrt[3]{64} = \sqrt[3]{4^3} = 4$

15. (C) $\sqrt[3]{3}\times\sqrt[3]{4} = \sqrt[3]{3\times 4} = \sqrt[3]{12}$

16. (A) Let the number of students in the class

$= x$

$\therefore$ Collected rupees by the students

$= x\times x$

$=$ Rs. x^2

and collected rupees by the teachers

$= 150\times 3$

$=$ Rs. 450

but the total amount collected

$=$ Rs. 1350

$\therefore \quad x^2 = 1350-450$

$= 900$

or, $x = \sqrt{900}$

$= 30$

Hence, the number of students in the class = 30.

Scanned by CamScanner

17. (B)

18. (A) The contribution by the workers in the workshop $= 196 - 16$
$= \text{Rs. } 180$

Let the number of workers in A grade be x and in B grade be y.

$\therefore \quad x^2 + y^2 = 180$

Now, by putting $x = 12$ and $y = 6$, we get

$x^2 + y^2 = 180$

$\therefore \quad x + y = 12 + 6 = 18.$

19. (C)

20. (B) $\sqrt{? \times 7} \times 18 = 84$

$\Rightarrow \quad \sqrt{? \times 7} = \frac{84}{18}$

$\Rightarrow \quad \left(\sqrt{? \times 7}\right)^2 = \left(\frac{84}{18}\right)^2$

$\Rightarrow \quad ? \times 7 = \frac{84 \times 84}{18 \times 18}$

$\therefore \quad ? = \frac{84 \times 84}{18 \times 18 \times 7}$

$= 3.11$

21. (B) Let $a = \sqrt{2}$ and $b = 2$

$\therefore \quad (a + b)(a - b) = a^2 - b^2$

$\therefore 2 + \sqrt{2} + \left[\frac{\sqrt{2} - 2 + 2 + \sqrt{2}}{(2 + \sqrt{2})(\sqrt{2} - 2)}\right]$

$\Rightarrow 2 + \sqrt{2} + \frac{2\sqrt{2}}{2 - 4}$

$\Rightarrow 2 + \sqrt{2} + \frac{2\sqrt{2}}{-2} = 2$

22. (C) $\sqrt{\frac{67.6}{?}} = 0.26$

$\Rightarrow \quad \frac{67.6}{?} = (0.26)^2$

$\Rightarrow \quad ? = \frac{67.6}{0.0676}$

$\therefore \quad ? = 1000$

23. (B) $\sqrt{7 \times 7 \times 2} - \sqrt{5 \times 5 \times 2} = ? \times \sqrt{2}$

$\Rightarrow 7\sqrt{2} - 5\sqrt{2} = ? \times \sqrt{2}$

$\therefore \quad ? = 2$

24. (B) 25. (A)

●●●

Scanned by CamScanner

H.C.F. AND L.C.M.

HCF stands for 'Highest Common Factor'.

HCF of two or more numbers is the largest number which divides each of them exactly.

LCM stands for 'Lowest Common Multiple' LCM of two or more numbers is the smallest number which is exactly divisible by each of them.

Important Formula :

1. Multiplication of both the numbers of LCM & HCF.

   = Multiplication of both numbers.

2. LCM of fraction

$$= \frac{\text{LCM of Numerator}}{\text{HCF of Denominator}}$$

3. HCF of fraction

$$= \frac{\text{HCF of Numerator}}{\text{LCM of Denominator}}$$

Rule 1 :

To find the HCF of two or more numbers—

(A) **Method of Prime Factors**—Break the given numbers into prime factors and then find the product of all the prime factors common to all the numbers. The product will be the required H.C.F.

Example 1. Find the HCF of 42 and 70.

Solution : $42 = \underline{2} \times 3 \times \underline{7}$

$70 = \underline{2} \times 5 \times \underline{7}$

$\therefore$ HCF $= 2 \times 7 = 14$

Example 2. Find the HCF of 1365, 1560 and 1755.

Solution : $1365 = \underline{3} \times \underline{5} \times 7 \times \underline{13}$

$1560 = 2 \times 2 \times 2 \times \underline{3} \times \underline{5} \times \underline{13}$

$1755 = 3 \times 3 \times \underline{3} \times \underline{5} \times \underline{13}$

$\therefore$ HCF $= 3 \times 5 \times 13 = 195$

Rule 2 :

To find the HCF of two or more concrete quantities—First, the quantities should be reduced to the same unit.

Example 3. Find the greatest weight which can be contained exactly in 2kg 470 gm and 6 kg 860 gm.

Solution : 2 kg 470 gm = 2470 gm

6 kg 860 gm = 6860 gm

The greatest weight required is the HCF of 2470 and 6860, which will be found 10 gm.

Rule 3 :

To find the HCF of decimal—First make (if necessary) the same number of decimal places in all the given numbers, then find their HCF as if they are integers and marks of in the result as many decimal places as there are each of the numbers.

Example 4. Find the HCF of 16.5, 0.45 and 15.

Solution : The given numbers are equivalent to 16.50, 0.45 and 15.00.

Step I—First we find the HCF of 1650, 45 and 1500 which comes to 15.

Step II—The required HCF = 0.15.

Rule 4 :

To find the LCM of two or more given number. Method of Prime factors—Resolve the given numbers into their prime factors and then find the product of the highest power of all the factors that occur in the given numbers. This product will be the LCM.

Example 5. Find the LCM of 18, 24, 60 and 150.

Solution : $18 = 2 \times 3 \times 3 = 2 \times 3^2$,

$24 = 2 \times 2 \times 2 \times 3 = 2^3 \times 3$,

Scanned by CamScanner

$$60 = 2 \times 2 \times 3 \times 5 = 2^2 \times 3 \times 5,$$
$$150 = 2 \times 3 \times 5 \times 5 = 2 \times 3 \times 5^2$$

Here the prime factors that occur in the given numbers are 2, 3 and 5 and their highest powers are 2^3, 3^2 and 5^2 respectively.

Hence the required LCM $= 2^3 \times 3^2 \times 5^2$
$= 1800.$

Rule 5 :

$$\text{HCF of fractions} = \frac{\text{HCF of Numerators}}{\text{LCM of Denominators}}$$

Example 6. Find the HCF of $\frac{54}{9}$, $3\frac{9}{17}$ and $\frac{36}{51}$

Solution : Here, $\frac{54}{9} = \frac{6}{1}$, $3\frac{9}{17} = \frac{60}{17}$ and $\frac{36}{51} = \frac{12}{17}$

Thus the fractions are $\frac{6}{1}, \frac{60}{17}$ and $\frac{12}{17}$

$$\therefore \quad \text{HCF} = \frac{\text{HCF of 6, 60, 12}}{\text{LCM of 1, 17, 17}} = \frac{6}{17}$$

Example 7. Find out the LCM of 90, 126, 135 & 255.

Solution :

2	90, 126, 135, 255
3	45, 63, 135, 255
3	15, 21, 45, 85
5	5, 7, 15, 85
	1, 7, 3, 17

$\therefore$ LCM $= 2 \times 3 \times 3 \times 3 \times 5 \times 7 \times 17$
$= 32130$

Example 8. The LCM of two numbers is 112 and of HCF is 4. If one number is 28 find out the next number ?

Solution : Required number

$$= \frac{\text{LCM} \times \text{HCF}}{\text{First number}} = \frac{112 \times 4}{28}$$
$$= 16$$

Example 9. What is the greatest number which leaves the same number as remainder when it divides 52, 86 and 120 ?

Solution : $86 - 52 = 34$
$120 - 86 = 34$

The HCF of 34 & 34 = 34

$\therefore$ Largest number is 34.

EXERCISE 8

1. Find the simplest number which is divisible by 12, 15, 20 and is a perfect square.
   (A) 400 (B) 623
   (C) 900 (D) 1000
   (E) 180
2. What is the smallest positive number, which when divided by 3, 4 and 5 will have a remainder of 2 ?
   (A) 22 (B) 42
   (C) 62 (D) 122
   (E) 60
3. Find the least number which when divided by 8, 9, 12 and 15, leaves the remainder 1.
   (A) 359 (B) 181
   (C) 179 (D) 361
   (E) None of these
4. The largest number that divides 245 and 1029, leaving remainder 5 in each case is—
   (A) 16 (B) 18
   (C) 17 (D) 15
   (E) None of these
5. Two containers contain 60 and 165 litres of milk, respectively. Find the maximum capacity of a container which can measure the milk in each container an exact number of times.
   (A) 5 (B) 15
   (C) 3 (D) 10
   (E) None of these
6. A person has three iron bars whose lengths are 10, 15 and 20 metres respectively. He wants to cut the longest possible pieces, all of the same length from each of the three bars. What is the length of each piece if he is to cut without any wastage ?
   (A) 3 metre (B) 30 metre
   (C) 15 metre (D) 5 metre
   (E) None of these
7. Two baskets contain, respectively, 195 and 250 bananas which are distributed inequal number among children. Find the largest

Scanned by CamScanner

number of bananas that can be given, so that 3 bananas are left over from the first basket and 2 from the second.

(A) 8 (B) 18
(C) 4 (D) 6
(E) None of these

8. Traffic light at one particular crossing changes after every 40 seconds. The traffic light at the next crossing changes after every 32 seconds. At a certain time they change together. After what time will they again change together ?

(A) 64 seconds (B) 160 seconds
(C) 80 seconds (D) 8 seconds
(E) None of these

9. The LCM of two numbers is 280 and their HCF is 7. One of the numbers is 35. Find the other number.

(A) 56 (B) 28
(C) 42 (D) 49
(E) None of these

10. The LCM of $\frac{2}{5}$, $\frac{6}{25}$ and $\frac{8}{35}$ is—

(A) $\frac{12}{5}$ (B) $\frac{2}{175}$
(C) $\frac{24}{5}$ (D) $\frac{24}{175}$
(E) None of these

11. What is the smallest number which when divided by 12 leaves 10, when divided by 16 leaves 14 and when divided by 24 leaves 22 as remainder ?

(A) 140 (B) 46
(C) 64 (D) 94
(E) None of these

12. What is the highest number of three digits which will leave a remainder of 1 when divided by any of the numbers 6, 9, 12, 15 or 18 ?

(A) 998 (B) 181
(C) 899 (D) 901
(E) None of these

13. The greatest number that must be taken out from 999. Such that the resulting number may be divisible by 10, 15 and 18 is—

(A) 909 (B) 9
(C) 900 (D) 180
(E) None of these

14. Find the least number divisible by 4, 6, 8 and 20 and it must be a perfect square also.

(A) 900 (B) 400
(C) 3600 (D) 1800
(E) None of these

15. Find the least number which when divided by 8, 12 and 16 leaves 3 as remainder in each case, but when divided by 7, leaves no remainder—

(A) 84 (B) 98
(C) 126 (D) 112
(E) 147

16. Find the greatest weight which can be contained exactly in 1 kg 235 gm and 3 kg 430 gm.

(A) 1 gm (B) 2 gm
(C) 3 gm (D) 5 gm
(E) None of these

17. The LCM of two number is 2079 and their HCF is 27. If one of the number is 189, find the other.

(A) 187 (B) 197
(C) 297 (D) 300
(E) None of these

18. Find the least number which, upon being divided by 2, 3, 4, 5 and 6 leaves in each case a remainder of 1.

(A) 50 (B) 55
(C) 58 (D) 61
(E) None of these

19. There are four number. The HCF of each pair is 3 and the LCM of all the 4 numbers is 1.16. What is the product of 4 numbers ?

(A) 3012 (B) 3132
(C) 3332 (D) 3832
(E) None of these

20. A merchant has three kinds of wine; of the first kind 403 gallons, of the second 527 gallons and of the third 589 gallons. What is the least number of full casks of equal size in which this can be stored without mixing ?

(A) 11 (B) 21
(C) 31 (D) 41
(E) None of these

Scanned by CamScanner

ANSWERS WITH HINTS

1. (C) 2. (C) 3. (D) 4. (A)

5. (B) The maximum capacity of a container which can measure the milk in each container an exact number of times, is the HCF of 60 and 165.

```
60) 165 (2
    120
    45) 60 (1
        45
        15) 45 (3
            45
            ×
```

∴ HCF of 60 and 165 = 15

Hence, the required answer = 15 litre.

6. (D)

```
10) 15 (1
    10
     5) 10 (2      5) 20 (4
        10            20
        ×             ×
```

∴ HCF of 10, 15 and 20 = 5 m

Hence, the required length of each piece = 5 metre.

7. (A) $195 - 3 = 192$

$250 - 2 = 248$

```
192) 248 (1
     192
     56) 192 (3
         168
         24) 56 (2
             48
             ×

          8) 24 (3
             24
             ×
```

∴ The required number of bananas = 8.

8. (B)

2	32, 40
2	16, 20
2	8, 10
	4, 5

∴ LCM of 32 and 40

$= 2 \times 2 \times 2 \times 4 \times 5$

$= 160$ secs.

Hence they will again change together after 160 secs.

9. (A) 10. (C) 11. (B) 12. (D) 13. (A)

14. (C) 15. (E)

16. (D) 1 kg 235 gm = 1235 gm

3 kg 430 gm = 3430 gm

The greatest weight required is the HCF of 1235 and 3430, which will be found to be 5 gm.

17. (C) The required number

$$= \frac{\text{LCM} \times \text{HCF}}{\text{First Number}}$$

$$= \frac{2079 \times 27}{189}$$

$$= 297$$

18. (D) Required least number

= (LCM of 2, 3, 4, 5 and 6) + 1

= 60 + 1 + 61

19. (B) The required number can be find by this formula $[(x)^{n-1} \times y]$ or

Product of n numbers

= (HCF of each Pair)$^{n-1}$ × (LCM of n numbers)

$= (3)^{4-1} \times 116$

= 3132

20. (C) HCF of 403, 527 and 589 is 31

∴ Required answer = 31

●●●

Scanned by CamScanner

PARTNERSHIP

Rule 1 :

In a group of x persons invested different amount for different period then their profit ratio is $AT_1 : BT_2 : CT_3 : \ldots\ldots NT_n$. Here first person invested amount A for T_1 period, second persons invested amount B for T_2 period and soon.

Example 1. Three partners P, Q and R invest Rs. 1600, Rs. 1800 and Rs. 2300 respectively in business. How should they divide a profit of Rs. 1938 ?

Solution : The profit should be divided in the ratios of the capitals, *i.e.*, in the ratio 16 : 18 : 23.

Now, 16 + 18 + 23 = 57

P's share = $\frac{16}{57}$ of 1938 = Rs. 544

Q's share = $\frac{18}{57}$ of 1938 = Rs. 612

R's share = $\frac{23}{57}$ of 1938 = Rs. 782

Rule 2 :

If investments are in the ratio $a : b : c$ and profits in the ratio $p : q : r$, then the ratio of time = $\frac{p}{a} : \frac{q}{b} : \frac{r}{c}$.

Example 2. A, B and C invested capitals in the ratio 5 : 6 : 8. At the end of the business term, they receive the profits in the term 5 : 3 : 12. Find the ratio of time for which they contributed their capitals.

Solution : Using the given formula, we have

The required ratio = $\frac{5}{5} : \frac{3}{6} : \frac{12}{8} = 1 : \frac{1}{2} : \frac{3}{2}$ = 2 : 1 : 3.

Example 3. In a business Abhay invests Rs. 600 more than Pavan B's capital remains invested for $7\frac{1}{2}$ months while Abhay's capital remains invested for 2 months more. If the total profit is Rs. 620, out of which Pavan get Rs. 140 less than Abhay, find the capital invested by each.

Solution : Out of Rs. 620. Pavan gets 140 less than Abhay. Hence Abhay's share

$$= \text{Rs. } 140 + \text{Rs. } \frac{620 - 140}{2}$$

$$= \text{Rs. } 380$$

$$\text{Pavan's share} = \text{Rs. } 620 - \text{Rs. } 380$$

$$= \text{Rs. } 240$$

Abhay's share : Pavan's share

$$= \text{Rs. } 380 : \text{Rs. } 240$$

$$= 19 : 12$$

Investment of Abhay = (Rs. 600 + Pavan's Capital) for $\frac{19}{2}$ months = $\frac{19}{2} \times$ Rs.(600 + Pavan's capital) for 1 month

Investment of Pavan = Pavan's capital for $\frac{15}{2}$ months = $\frac{15}{2} \times$ Pavan's capital for 1 month

$$\frac{\text{Investment of Abhay}}{\text{Investment of Pavan}} = \frac{\text{Abhay's share}}{\text{Pavan's share}}$$

$$\frac{\frac{19}{2} \times (600 + \text{Pavan's capital})}{\frac{15}{2} \times \text{Pavan's capital}} = \frac{1}{4}$$

By cross multiplication

2400 + 4 × Pavan's capital = 5 × Pavan's capital

2400 = 5 × Pavan's capital – 4 × Pavan's = Pavan's capital

Abhay's capital = Rs. 600 + Pavan's capital = Rs. 600 + Rs. 2400

$$\left.\begin{array}{l}\text{Abhay's capital} = \text{Rs. } 3000 \\ \text{Pavan's capital} = \text{Rs. } 2400\end{array}\right\}.$$

EXERCISE 9

1. 'X', 'Y' and 'Z' purchased mangoes, in a ratio 5 : 3 : 2. If the total number of mangoes

Scanned by CamScanner

of 'Y' and 'Z' is 60. Find out the number of mangoes of 'X'.

(A) 40 (B) 80
(C) 100 (D) 50
(E) 60

2. 'X' grazes 10 sheep for 3 weeks, 'Y' grazes 15 sheep for 4 weeks in a field. How should they divide a rent of Rs. 60 ?

(A) 1 : 2
(B) 2 : 1
(C) 3 : 1
(D) Rs. 25 : Rs. 35
(E) Rs. 48 : Rs. 12

3. In an election A, B and C got altogether 1500 votes. A and B together got 760 votes. How many votes did C get ?

(A) 180 (B) 560
(C) 740 (D) 200
(E) None of these

4. Bipin and Prakash shared the profit of Rs. 1210 in such a way that two-fifth of Bipin share was equal to one-third of Prakash's share. What amount did Prakash get ?

(A) Rs. 550 (B) Rs. 560
(C) Rs. 650 (D) Rs. 660
(E) None of these

5. In a trade A invested Rs. 9000 but he withdrew at the end of the sixth month. But B had entered the business at the end of the third month with an investment of Rs. 6000. If the total profit at the end of the first year amounted to Rs. 1352, what will be A's share ?

(A) Rs. 376 (B) Rs. 476
(C) Rs. 576 (D) Rs. 676
(E) None of these

6. Krishna started a business with a capital of Rs. 9000. Four months later Rani joined him with a capital of Rs. 12000. At the end of the year, total profit earned was Rs. 2550. Find Rani's share in the profit ?

(A) Rs. 975 (B) Rs. 1350
(C) Rs. 1000 (D) Rs. 1200
(E) Rs. 1050

7. Divide Rs. 1200 in the ratio of 1 : 2 : 3.

(A) 300, 350, 450 (B) 200, 400, 600
(C) 300, 400, 500 (D) 100, 250, 850
(E) None of these

8. Ram, Shyam and Hari started a business with a capital of Rs. 5000, Rs. 7000 and Rs. 8000. At the end of the year there is a profit of Rs. 800, find out the share of profit to Hari.

(A) Rs. 200 (B) Rs. 320
(C) Rs. 280 (D) Rs. 160
(E) None of these

9. A, B and C started a business in which A contributed Rs. 30000. Out of the total profit of Rs. 7200 A got 1920 and C got Rs. 2880, find the capital invested by B.

(A) Rs. 9000 (B) Rs. 15000
(C) Rs. 12000 (D) Rs. 10000
(E) None of these

10. Mahesh invested Rs. 1000 for 3 months and Rajvir invested Rs. 800 for 4 months. If they gained Rs. 620, how much Rajvir will get out of it ?

(A) Rs. 320 (B) Rs. 400
(C) Rs. 220 (D) Rs. 350
(E) None of these

11. A, B and C rented a house for 1 year at Rs. 288. They remained together for 4 months and C left afterwards. After 5 months more B also left. How much did B pay ?

(A) Rs. 96 (B) Rs. 82
(C) Rs. 92 (D) Rs. 72
(E) None of these

12. A began a business with Rs. 450 and was joined afterwards by B with Rs. 300. When did B join if the profits at the end of the year were divided in the ratio 2 : 1 ?

(A) 1 month (B) 2 months
(C) 3 months (D) 4 months
(E) None of these

13. Three friends A, B and C started a business by investing a sum of money in the ratio of 5 : 7 : 6. After six months C withdraws half of his capital. If the sum invested by 'A' is Rs. 40000, out of a total annual profit of Rs. 33000 C's share will be—

(A) 6000 (B) 7000
(C) 8000 (D) 9000
(E) None of these

Scanned by CamScanner

14. A, B and C invested capital in the ratio 2 : 3 : 5; the timing of their investments being in the ratio 4 : 5 : 6. In what ratio would their profit be distributed ?

(A) 8 : 15 : 30 (B) 8 : 6 : 4
(C) 9 : 12 : 15 (D) 15 : 16 : 17
(E) None of these

15. Two partners invests Rs. 125000 and 85000 respectively, in a business and agree that 60% of the profit should be divided equally between them and the remaining profit is to be treated as interest on capital. If one partner gets Rs. 300 more than the other, find the total profit made in the business.

(A) Rs. 3600 (B) Rs. 3800
(C) Rs. 3937.50 (D) Rs. 4000
(E) None of these

ANSWERS WITH HINTS

1. (E)
2. (A) Sheep grazed by x for 3 weeks = 10
$\therefore$ Sheep grazed by x for 1 week = 10×3
= 30
Sheep grazed by y for 4 weeks = 15
$\therefore$ Sheep grazed by y for 1 week = 15×4
= 60
$\because$ Ratio in the sheep of x and y = 30 : 60
= 1 : 2
$\therefore$ Ratio in the rent = 1 : 2
3. (C)
4. (D) Ratio in the shares of Bipin and Prakash
= 5 : 6
$\therefore$ Sum of the ratios = 5 + 6 = 11
$\therefore$ Share of Prakash = $\frac{1210 \times 6}{11}$
= Rs. 660
5. (D)
6. (D) Capital of Krishna for 12 months
= Rs. 9000
$\therefore$ Capital of Krishna for 1 month
= 9000×12
= Rs. 108000
Capital of Rani for 8 months
= Rs. 12000
$\therefore$ Capital of Rani for 1 month
= 12000×8
= Rs. 96000
$\therefore$ Ratio of their capital = 108000 : 96000
= 9 : 8
$\therefore$ Sum of ratios = 9 + 8 = 17
$\therefore$ Share of Rani in the profit
= $\frac{2550 \times 8}{17}$
= Rs. 1200

7. (B) 8. (B) 9. (D) 10. (A)
11. (C)
12. (C) Suppose B joined the business for x months. Then,
$\frac{\text{A's capital} \times \text{A's time in partnership}}{\text{B's capital} \times \text{B's time in partnership}}$
= $\frac{\text{A's profit}}{\text{B's profit}}$
$\Rightarrow \frac{450 \times 12}{300 \times x} = \frac{2}{1}$
$\Rightarrow 300 \times 2x = 450 \times 12$
$\therefore x = \frac{450 \times 12}{2 \times 300} = 9$ months
Therefore, B joined after (12 – 3)
= 3 months.
13. (D) Sum invested by A, B and C is in the ratio of $5 \times 12 : 7 \times 12 : 6 \times 6 + 3 \times 6$
or, 60 : 84 : 54
or, 10 : 14 : 9
$\therefore$ Share of C = $\frac{9}{33} \times 33000$ = Rs. 9000
14. (A) We know that, if investments are in the ratio of $a : b : c$ and the timing of their investments in the ratio of $x : y : z$, then the ratio of their profits are in the ratio of $ax : by : cz$
$\therefore$ Required ratio = $2 \times 4 : 3 \times 5 : 5 \times 6$
= 8 : 15 : 30
15. (C) Ratio of profit = 125000 : 85000
= 25 : 17
Total profit = $300 \left(\frac{100}{40}\right)\left(\frac{25+17}{25-17}\right)$
= Rs. 3937.50

●●●

Scanned by CamScanner

PROFIT AND LOSS

Rule 1 :

To find profit or loss when cost price and selling price are given.

(A) When selling price > cost price there is equal and it is given by selling price – cost price.

(B) When selling price < cost price, there is a loss and it is given by cost price – selling price.

Example 1. Anju buys a toy for Rs. 25 and sells it for Rs. 30. Find her profit.

Solution : In this example, selling price (SP) of a toy = Rs. 30 and cost price (CP) of a toy = Rs. 25

Here, SP > CP

Now, from above formula, we have (A) profit

= Rs. 30 – Rs. 25 = Rs. 5.

Example 2. Monty buys a balloon for Rs. 50 and sells it for Rs. 45. Find his loss.

Solution : Here cost price of a balloon = Rs. 50 and

Here, SP < CP

Now from above formula (B), we have,

Loss = Rs. 50 – Rs. 45 = Rs. 5.

Rule 2 :

To profit or loss is generally reckoned as so much per cent on the cost, *i.e.* Gain or loss per cent $= \frac{\text{Loss or Gain}}{\text{CP}} \times 100$.

Example 3. Satyam buys a toy for Rs. 25 and sells it for Rs. 30. Find his gain per cent.

Solution : $\% \text{ Gain} = \frac{\text{Gain}}{\text{CP}} \times 100$

$= \frac{5}{25} \times 100$

$= 20\%$

Example 4. Ponty buys a pen for Rs. 25 and sells it for Rs. 20. Find his loss per cent.

Solution : $\% \text{ Loss} = \frac{\text{Loss}}{\text{CP}} \times 100$

$= \frac{5}{25} \times 100 = 20\%$

Rule 3 :

If a reduction of $x\%$ in the price of an article enable a person to buy 'n' kg more for Rs. A, then the reduced and the original price per kg of the article are $\left(\frac{Ax}{100n}\right)$ per kg and $\left(\frac{Ax}{(100-x)n}\right)$ per kg respectively.

Example 5. A reduction of 20% in the price of sugar enables a person to buy 2 kg more for Rs. 30. Find the reduced and the original price per kg of sugar.

Solution : Reduced price of sugar

$= \frac{30 \times 20}{100 \times 2}$

= Rs. 3 per kg

and the original price of sugar

$= \frac{30 \times 20}{(100-20) \times 2} = \frac{15}{4} = \text{Rs. } 3\frac{3}{4}$ per kg.

Rule 4 :

If a hike of $x\%$ in the price of an article forces a person to buy n kg less, then the new and the original prices per kg of the article are

$\left(\frac{A}{100n} \text{ per kg}\right)$ and $\left[\frac{Ax}{(100+x)n}\right]$ per kg respectively.

Example 6. A 20% hike in the price of wheat forces a person to purchase 3 kg less for Rs. 150. Find the new and the original prices of the wheat.

Solution : Applying the above formula, we have,

The new price $= \frac{20 \times 150}{100 \times 3}$

= Rs. 10 per kg

Scanned by CamScanner

and the original price $= \dfrac{20 \times 150}{(100+20) \times 3}$

$= \dfrac{3000}{360}$

$=$ Rs. $8\frac{1}{3}$ per kg

Rule 5 :

When there is a profit of x% and loss of y% in a transactions then the resultant profit or loss per cent is given by $\left(x - y - \dfrac{xy}{100}\right)$ according to the +ve and –ve signs respectively.

Example 7. A sells a computer to B at a profit of 30% and B sells it to C at a loss of 20%. Find the resultant profit or loss.

Solution : Applying the above formula, we have

The resultant profit or loss

$= 30 - 20 - \dfrac{30 \times 20}{100}$

$=$ 4% profit, because sign is +ve

Rule 6 :

If cost price of x articles is equal to the selling price of y articles, then the profit percentage

$= \dfrac{x-y}{y} \times 100\%.$

Example 8. The cost price of 10 articles is equal to the selling price of 9 articles. Find the profit per cent.

Solution : % profit $= \dfrac{10-9}{9} \times 100$

$= 11\frac{1}{9}\%$

Rule 7 :

If certain article is bought at the rate of 'A' for a rupee, then to gain x%, the article must be sold at the rate of $\left(\dfrac{100}{100+x}\right) \times$ A for a rupee.

Example 9. If toffees are bought at the rate of 25 for a rupee, how many must be sold for a rupee so as to gain 25% ?

Solution : As there is 25% gain so our calculating figure would be 125 and 100. Now, to gain a profit the number of articles sold for one rupee must be less than the number bought for one rupee. Thus the multiplying fraction is $\dfrac{100}{125}$.

$\therefore$ Required no. of toffees $= 25 \times \dfrac{100}{125} = 20.$

Important Formulae :

1. Profit = S.P. – C.P.
2. Loss = C.P. – S.P.

   Note—The profit or loss per cent is always counted on the C.P.

3. % of Profit $= \dfrac{\text{Actual profit} \times 100}{\text{Cost price}}$
4. % of Loss $= \dfrac{\text{Actual loss} \times 100}{\text{Cost price}}$
5. In case of profit, S.P.

   $= \text{C.P.}\left(\dfrac{100 + \%\text{ of profit}}{100}\right)$

   In case of loss, S.P.

   $= \dfrac{\text{C.P. } (100 - \%\text{ of loss})}{100}$

6. In case of profit, C.P.

   $= \dfrac{\text{S.P.} \times 100}{100 + \%\text{ of profit}}$

   In case of loss, C.P.

   $= \dfrac{\text{S.P.} \times 100}{100 - \%\text{ of loss}}.$

Example 9. Sohan purchased an old car for Rs. 6200 and he spent Rs. 1700 on its repairing. If he sold the car for Rs. 8200, what is his profit ?

Solution : C.P. of the old car = Rs. 6200

and the money spent on its repairing

= Rs. 1700

$\therefore$ Total cost of the car = 6200 + 1700

= Rs. 7900

But S.P. of the car = Rs. 6200

$\therefore$ Profit = 8200 – 7900

= Rs. 300

Example 10. Atul sold his watch for Rs. 198 at a profit of 10%. What was the cost price of the watch ?

Solution : C.P. $= \dfrac{\text{S.P.} \times 100}{100 + \%\text{ of Profit}}$

$= \dfrac{198 \times 100}{100 + 10}$

Scanned by CamScanner

$$= \frac{198 \times 100}{110}$$

$$= \text{Rs. } 180$$

Example 11. T. V. was sold for Rs. 1230 at a loss of 18%. If it is sold for Rs. 1600, find the percentage of profit or loss.

Solution : $\text{C.P.} = \frac{\text{S.P.} \times 100}{100 - \%\text{ of loss}}$

$$= \frac{1230 \times 100}{100 - 18}$$

$$= \frac{1230 \times 100}{82}$$

$$= \text{Rs. } 1500$$

Now, C.P. = Rs. 1500

or, S.P. = Rs. 1600

$\therefore$ Actual profit = Rs. 1600 – Rs. 1500

= Rs. 100

$\therefore$ % of profit $= \frac{100 \times 100}{1500}$

$$= 6\frac{2}{3}\%$$

EXERCISE 10

1. Dilip buys a radio at $\frac{3}{4}$ of its value and sells it for 20% more than its value. What is his gain % ?
   (A) 20% (B) 45%
   (C) 60% (D) 75%
   (E) None of these
2. Apples cost 5 paise each. They are sold at 20% profit. Find out the selling price of one dozen apples.
   (A) 6 paise (B) 60 paise
   (C) 72 paise (D) 80 paise
   (E) None of these
3. If I buy a radio for Rs. 300 and sell it for Rs. 330, my gain percentage is—
   (A) 3% (B) 10%
   (C) 15% (D) 20%
   (E) 30%
4. An umbrella marked at Rs. 80 is sold for Rs. 68. What is the rate of discount ?
   (A) 15% (B) 17%
   (C) 18.5% (D) 20%
   (E) None of these
5. A man buys a bicycle for Rs. 330 after receiving 12% discount. What is the marked price ?
   (A) Rs. 375 (B) Rs. 380
   (C) Rs. 369.60 (D) Rs. 342
   (E) None of these
6. If a merchant makes a profit of 20% based on the selling price of an article, what profit does he make based on the cost ?
   (A) 25% (B) 40%
   (C) 30% (D) 28%
   (E) None of these
7. If price are reduced by 25% and the sales go up by 20%, what is the effect on the total money received ?
   (A) Decrease by 5%
   (B) The remain the same
   (C) Decrease by 10%
   (D) Increase by 5%
   (E) None of these
8. By selling an electric pump at a cost for Rs. 4800, a farmer loses one-quarter of what it cost him. What was the cost price ?
   (A) Rs. 6400
   (B) Rs. 1200
   (C) Rs. 6000
   (D) Can not be determined
   (E) None of these
9. The loss incurred in selling an aritcle for Rs. 19 is as much as the profit made when it is sold at 5 per cent profit. To get 5 per cent profit what should be its selling price ?
   (A) Rs. 21
   (B) Rs. 20.50
   (C) Rs. 19.95
   (D) Cannot be determined
   (E) None of these
10. Mohandas mixes 10 kg of oil purchased at Rs. 15 per kg with 5 kg of oil purchased at Rs. 10 per kg. If he sells the mixture and gets 12.5% profit, what is the selling price of the oil per kg ?
    (A) Rs. 14 (B) Rs. 15
    (C) Rs. 11.25 (D) Rs. 15.75
    (E) None of these

Scanned by CamScanner

11. When the price of a heater was increased by 20 per cent, the number of heaters sold decrease by 20 per cent. What was the effect on sales ?
(A) 4% increase
(B) 4% decrease
(C) No effect on sales
(D) Cannot be determined
(E) None of these

12. A man sold an article for Rs. 7200 thus bearing a loss of $\frac{1}{4}$ th of this cost. The cost of the article is—
(A) Rs. 8000 (B) Rs. 7200
(C) Rs. 9600 (D) Rs. 9000
(E) None of these

13. A man sold his watch for Rs. 190 thus bearing a loss of 5%. The cost price of the watch is—
(A) Rs. 237.50 (B) Rs. 220
(C) Rs. 210 (D) Rs. 200
(E) None of these

14. A trader bears a loss of 25% by selling 40 needles for a rupee. How many needles should be sell for a rupee in order to earn a profit of 20% ?
(A) 23 (B) 20
(C) 25 (D) 27
(E) None of these

15. What will be the gain or loss per cent if the cost price of 20 articles equals the selling price of 30 articles ?
(A) $33\frac{1}{3}$% loss (B) $33\frac{1}{3}$% gain
(C) 50% loss (D) 50% gain
(E) None of these

16. An article is sold at 25% profit. If its C.P. and S.P are increased by Rs. 20 and Rs. 4 respectively, the percentage of profit decreases by 15%. Find the cost price.
(A) Rs. 90 (B) Rs. 110
(C) Rs. 120 (D) Rs. 150
(E) None of these

17. A hawker sells oranges at a profit of 40%. If he reduces the selling price of each orange by 30 paise, he earns a profit of 25%. Find the cost price and the initial selling price of each orange.
(A) 200 paise and 250 paise
(B) 100 paise and 150 paise
(C) 190 paise and 210 paise
(D) 200 paise and 210 paise
(E) None of these

18. The cost price of 10 articles in equal to the selling price of 9 articles. Find the profit per cent.
(A) $6\frac{2}{3}$% (B) $11\frac{1}{9}$%
(C) $9\frac{2}{3}$% (D) $16\frac{2}{3}$%
(E) None of these

19. A person bought two watches for Rs. 480. He sold one at loss of 15% and the other at a gain of 19% and he found that each watch was sold at the same price. Find the cost price of the two watches.
(A) Rs. 150 (B) Rs. 200
(C) Rs. 300 (D) Rs. 600
(E) None of these

20. A man buys rice for Rs. 4400. He sells $\frac{1}{3}$rd of it at a profit of 52%. At what per cent gain should he sell remaining $\frac{2}{3}$ rd so as to make an overall profit of 10% on the whole transaction?
(A) $11\frac{1}{2}$% (B) $12\frac{1}{2}$%
(C) $16\frac{2}{3}$% (D) $33\frac{1}{3}$%
(E) None of these

ANSWERS WITH HINTS

1. (C) 2. (C) 3. (B) 4. (A) 5. (A)

6. (A) Let the S.P. of the article be Rs. 100

$\therefore$ Profit on the article = Rs. 20

$\therefore$ C.P. = 100 – 20

= Rs. 80

If C.P. is Rs. 80, then profit is Rs. 20

$\therefore$ C.P. is Rs. 100, then profit is Rs.

$$= \frac{20 \times 100}{80}$$

$$= 25\%$$

Scanned by CamScanner

7. (C) 8. (A)

9. (A) Let the C.P. of the article be Rs. x

$\therefore$ Actual loss $= \text{Rs. } (x - 19)$

and Profit at 5% $= \dfrac{5 \times x}{100}$

$\therefore \quad \dfrac{5x}{100} = x - 19$

or, $5x = 100x - 1900$

or, $100x - 5x = 1900$

or, $95x = 1900$

or, $x = \dfrac{1900}{95} = \text{Rs. } 20$

Now S.D. to get 5% profit

$= \dfrac{105 \times 20}{100} = \text{Rs. } 21$

10. (B) 11. (B) 12. (C)

13. (D) Let the C.P. of the watch

$= \text{Rs. } 100$

$\therefore$ S.P. of the watch $= 100 - 5$

$= \text{Rs. } 95$

If Rs. 95 is S.P., then C.P. $= \text{Rs. } 100$

$\therefore$ 190 is S.P., then C.P. $= \dfrac{100 \times 190}{95}$

$= \text{Rs. } 200$

14. (C)

15. (A) Let the C.P. of 20 articles be Rs. 100

$\therefore$ The C.P. of 1 article be Rs. $\dfrac{100}{20} = \text{Rs. } 5$

andS.P. of 30 articles $= \text{Rs. } 100$

$\therefore$ S.P. of 1 article $= \dfrac{100}{30}$

$= \text{Rs. } 3.33$

$\therefore$ Loss $= 5.00 - 3.33$

$= \text{Rs. } 1.67$

$\therefore$ Loss on Rs. 5 $= \text{Rs. } 1.67$

$\therefore$ Loss on Rs. 100 $= \dfrac{1.67 \times 100}{5}$

$= 33\frac{1}{3}\%.$

16. (C) Cost Price $= \left[\dfrac{\left(A - B + \dfrac{AY}{100}\right)}{(x - y)}\right] \times 100$

$= \dfrac{50 - 30 + \dfrac{50 \times 50}{300}}{\dfrac{10}{3}} \times 100$

$= \text{Rs. } 850$

17. (A) Cost Price $= \dfrac{100X}{x - y}$

$= \dfrac{100 \times 30}{40 - 25} = 200 \text{ paise}$

and selling price $= \left[\dfrac{(100 + x)X}{x - y}\right]$

$= \dfrac{(100 + 25)30}{40 - 25}$

$= 250 \text{ paise}$

18. (B) Total investment $= 10 \times 9$

$= \text{Rs. } 90$

The cost price of 1 article $= \dfrac{90}{10} = \text{Rs. } 9$

and selling price of 1 article $= \dfrac{90}{9} = \text{Rs. } 10$

$\therefore$ % profit $= \dfrac{10 - 9}{9} \times 100$

$= \dfrac{1}{9} \times 100$

$= 11\frac{1}{9}\%$

19. (B) C.P. of watch sold at loss

$= \dfrac{P(100 + y)}{(100 - x) + (100 + y)}$

$= \dfrac{480 \times (100 + \%\text{profit})}{(100 - 15) + (100 + 19)}$

$= \dfrac{480 \times 119}{204} = \text{Rs. } 280$

$\therefore$ C.P. of watch sold at gain

$= 480 - 280$

$= \text{Rs. } 200$

20. (B) The required % profit

$= \left[\dfrac{y - xn}{1 - n}\right] = \dfrac{10 - 5 \times \frac{1}{3}}{1 - \frac{1}{3}} = \dfrac{25}{2}$

$= 12\frac{1}{2}\%$

●●●

Scanned by CamScanner

WORK AND TIME

Rule 1 :

If P_1 persons can do W_1 works in D_1 days and P_2 persons can do W_2 works in D_2 days then we have a very general formula in the relationship of $P_1D_1W_2 = P_2D_2W_1$.

Example 1. A can do a piece of work in 5 days. How many days will he take to complete 3 works of the same type ?

Solution : As 'A' is the only person to do the work in both the cases, so

$$P_1 = P_2 = 1 \text{ (useless to carry it)}$$

$$D_1 = 5 \text{ days } W_1 = 1, D_2 = ?$$

and $$W_2 = 3$$

Putting the value in the formula we have,

$$5 \times 3 = D_2 \times 1$$

or, $$D_2 = 15 \text{ days.}$$

Rule 2 :

If A can do a piece of work in x days and B can do it in y, days then A and B working together will do the same work in $\left(\frac{xy}{x+y}\right)$ days.

Example 2. A can do a piece of work in 5 days and B can do it in 6 days. How long will they take if both work together ?

Solution : Applying the above formula,

A + B can do the work in $\frac{5 \times 6}{5+6}$ days

$$= \frac{30}{11} = 2\frac{8}{11} \text{ days.}$$

Rule 3 :

If A, B and C can do a work in x, y and z days respectively, then all of them working together can finish the work in $\left(\frac{xyz}{xy+yz+xz}\right)$ days.

Example 3. A can do a piece of work in 5 days, and B can do it in 6 days. If C, who can do the work in 12 days, join then, how long will they take to complete the work ?

Solution : Applying the above formula, we have, A, B and C can do the work in

$$\frac{5 \times 6 \times 12}{5 \times 6 + 6 \times 12 + 5 \times 12} = \frac{360}{162} = 2\frac{2}{9} \text{ days.}$$

Rule 4 :

If A and B together can do a piece of work in x days and A alone can do it in y days, then B alone can do the work in $\frac{xy}{y-x}$ days.

Example 4. A and B together can do a piece of work in 6 days and A alone can do it 9 days. In how many days can B alone do it ?

Solution : Applying the above formula, we have, 'B' alone can do the whole work in

$$\frac{6 \times 9}{9-6} = \frac{54}{3} = 18 \text{ days.}$$

Rule 5 :

If x_1 men or y_1 women can reap a field in 'D' days, then x_2 men and y_2 women take to reap it $\left[\frac{D(x_1\, y_1)}{x_2\, y_1 + x_1\, y_2}\right]$ days.

Example 5. If 3 men or 4 women can reap a field in 43 days. How long will 7 men and 5 women take to reap it ?

Solution : Required number of days

$$= \frac{1}{\left[\frac{7}{43 \times 3} + \frac{5}{43 \times 4}\right]}$$

$$= \frac{43 \times 3 \times 4}{7 \times 4 + 5 \times 3}$$

$$= 12 \text{ days.}$$

Example 6. If 4 men or 7 women can do a piece of work in 60 days, how long will 8 men and 7 women take to do it ?

Scanned by CamScanner

Solution :

Work of 4 men = Work of 7 women

$\therefore$ Work of 8 men = Work of $\frac{7 \times 8}{4}$

= Work of 14 women

7 + 14 = 21 Women

$\because$ 7 women can do a work in 60 days

$\therefore$ 21 women can do a work in

$= \frac{60 \times 7}{21}$

= 20 days.

Example 7. Two pipes A and B, would fill a cistern in $37\frac{1}{2}$ minutes and 45 minutes respectively. Both pipes being opened, find when the second pipe must be turned off, so that the cistern may be filled in half an hour.

Solution : A can fill in 1 minute $= \frac{2}{75}$

and B can fill in 1 minute $= \frac{1}{45}$

The part of cistern filled by A in half an hour

$= \frac{2}{75} \times 30$

$= \frac{4}{5}$

$\therefore$ The remaining part of the cistern to be filled by B $= 1 - \frac{4}{5}$

$= \frac{1}{5}$

Since $\frac{1}{45}$ cistern is filled up by B in = 1 min.

$\therefore$ $\frac{1}{5}$ cistern is filled up by B in $= 45 \times \frac{1}{5}$

= 9 min.

Hence, the second pipe must be turned off after 9 minutes.

EXERCISE 11

1. If 12 men can finish a work in 20 days, then in how many days 15 men will complete that work ?
   (A) 15 (B) 12
   (C) 18 (D) 20
   (E) None of these

2. 15 men can do $\frac{1}{2}$ work in 20 days. In how many days will 20 men do the full work ?
   (A) 30 days (B) 35 days
   (C) 15 days (D) 40 days
   (E) 20 days

3. One pipe can fill a tank in 40 minutes, another pipe can empty it in 60 minutes. If both the pipes are opened at the same time, then how much time it will take to fill up the tank ?
   (A) 80 minutes (B) 90 minutes
   (C) 100 minutes (D) 120 minutes
   (E) 140 minutes

4. 4 men or 6 women can do some work in 12 days. In how many days will 4 men and 12 women do the same work ?
   (A) 6 days (B) 24 days
   (C) 4 days (D) 3 days
   (E) None of these

5. A man takes 15 minutes to wash 3 shirts and 30 minutes to wash and dry 4 shirts and 5 vests. If he takes 30 minutes to only wash 2 shirts and 10 vests, then what is the time taken for drying ?
   (A) 5 minutes (B) 15 minutes
   (C) 10 minutes (D) 0 minutes
   (E) None of these

6. 15 men work 8 hours per day and require 10 days to build a wall. If 8 men are available. How many hours per day must they work to finish the work in 10 days ?
   (A) 10 hrs. (B) 15 hrs.
   (C) 12 hrs. (D) 18 hrs.
   (E) None of these

7. If 12 men can do a piece of work in 24 days, then in how many days 18 men can do the same work ?
   (A) 36 (B) 20
   (C) 18 (D) 16
   (E) None of these

8. Ramesh can finish a job in 20 days and Suresh in 25 days. They start working together but after 5 days Suresh leaves. In how many more days Ramesh alone can finish the work ?
   (A) 11 days (B) 9 days

Scanned by CamScanner

(C) 7 days (D) 13 days
(E) None of these

9. A and B can finish a work in 16 days while A alone can do the same work in 24 days. Therefore, B alone can finish in—
(A) 36 days (B) 24 days
(C) 48 days (D) 56 days
(E) None of these

10. Deepak can do a piece of work in 12 days. He works for 4 days, when Prakash joins him. They together complete the remaining work in 5 days. How many days will be taken by Prakash to complete the remaining work alone ?
(A) 10 (B) 15
(C) 16 (D) 20
(E) None of these

11. Pipes A and B can fill tank in respectively 30 minutes & 20 minutes. Pipe C can empty this tank in 15 minutes. If all three pipes are opened, when will the tank be full ?
(A) 60 minutes (B) 45 minutes
(C) 30 minutes (D) 12 minutes
(E) None of these

12. 40 men can cut 60 trees in 8 hours. If 8 men leave the job, how many trees will be cut in 12 hours ?
(A) 60 (B) 70
(C) 72 (D) 80
(E) None of these

13. A can do a piece of work in 5 days, and B can do it in 6 days. If C, who can do the work in 12 days, joins them, how long will they take to complete the work ?
(A) $2\frac{1}{9}$ days (B) $3\frac{3}{4}$ days
(C) $1\frac{1}{3}$ days (D) 4 days
(E) None of these

14. A and B together can do a piece of work in 6 days and A alone can do it in 9 days. In how many days can B alone do it ?
(A) 8 days (B) 9 days
(C) 15 days (D) 18 days
(E) None of these

15. If 3 men or 4 women can reap a field in 43 days. How long will 7 men and 5 women take to reap it.
(A) 10 days (B) 12 days
(C) 15 days (D) 18 days
(E) None of these

ANSWERS WITH HINTS

1. (E) If 12 men finish a work in 20 days
$\therefore$ 15 men finish a work in
$$= \frac{20 \times 12}{15} = 16 \text{ days.}$$

2. (A)

3. (D) Part of the tank filled in 1 min. by first pipe $= \frac{1}{40}$

Part of the tank emptied in 1 min. by second pipe $= \frac{1}{60}$

$\therefore$ Part filled in 1 min. when both pipes are opened $= \frac{1}{40} - \frac{1}{60} = \frac{1}{120}$

$\therefore$ Full tank can be filled in 120 minutes.

4. (C) 5. (D)

6. (B) $\because$ 15 men build a wall in 10 days working 8 hours a day
$\therefore$ 8 men build a wall in 10 days working
$$= \frac{8 \times 15}{8}$$
$$= 15 \text{ hours.}$$

7. (D) 8. (A) 9. (C)

10. (E) Work of 1 day of Deepak $= \frac{1}{12}$

$\therefore$ Work of 4 days of Deepak $= \frac{1}{12} \times 4 = \frac{1}{3}$

$\therefore$ The remaining work $= 1 - \frac{1}{3} = \frac{2}{3}$

$\because$ Both together do in 5 days $\frac{2}{3}$ work

$\therefore$ Both together do in 1 day $= \frac{2}{3 \times 5} = \frac{2}{15}$

$\therefore$ Work of 1 day of Prakash $= \frac{2}{15} - \frac{1}{12}$
$$= \frac{1}{20}$$

Scanned by CamScanner

∴ Prakash will complete the remaining work alone in $= \frac{2}{3} \times \frac{20}{1}$

$= 13\frac{1}{3}$ days.

11. (A)

12. (C) 40 men—working 8 hrs.—cut 60 trees

or, 1 men—working 1 hrs—cuts $\frac{60}{40 \times 8}$ trees

Thus, 32 men—working 12 hrs—cut

$$\frac{60 \times 32 \times 12}{40 \times 8} = 72 \text{ trees.}$$

13. (A) **TRICKS—**If A, B and C can do a work in x, y and z days respectively then all of them working together can finish the work in $\left(\frac{xyz}{xy + yz + xz}\right)$ days

∴ A, B and C can do the work in

$$\frac{5 \times 6 \times 12}{5 \times 6 + 6 \times 12 + 5 \times 12} = \frac{360}{162}$$

$$= 2\frac{2}{9} \text{ days.}$$

14. (D) **TRICK—**If A and B together can do a piece of work in x days and A alone can do it in y days, then B alone can do the work in $\frac{xy}{y - x}$ days

∴ B alone can do the whole work in

$$\frac{6 \times 9}{9 - 6} = \frac{54}{3} = 18 \text{ days.}$$

15. (B)

●●●

Scanned by CamScanner

TIME AND DISTANCE

If two bodies are moving in the same direction, then their relative velocity *i.e.* the speed by which they overtake one another is equal to the difference of their speeds.

If they are moving in opposite direction, then their relative velocity is equal to the sum of their speeds.

Rule 1 :

(i) Distance = Speed × Time

(ii) Time = Distance ÷ Speed

(iii) Speed = Distance ÷ Time

(iv) x km/hr $= \left(x \times \frac{5}{18}\right)$ m/sec

(v) x m/sec $= \left(x \times \frac{18}{5}\right)$ km/hr

Example 1. Find the distance covered by a man walking for 10 minutes at a speed of 6 km/hr.

Solution : Applying the above formula (i), we have

$$\text{Distance} = 6 \text{ km/hr} \times \frac{10}{60} \text{ hr}$$

$$\left[\because 10 \text{ minutes} = \frac{10}{60} \text{ hr}\right]$$

$$= 1 \text{ km.}$$

Example 2. Find the time taken to cover a distance of 1250 km by a train moving at a speed of 50 km/hr.

Solution : Applying the above formula (ii), we have,

$$\text{Time} = \frac{1250}{50} \text{ hours} = 25 \text{ hours.}$$

Example 3. Express a speed of 180 km/hr in metres per second.

Solution : Applying the above formula (iv), we have

$$180 \text{ km/hr} = \left(180 \times \frac{5}{18}\right) \text{ m/sec} = 50 \text{ m/sec.}$$

Example 4. A train covers a distance of 625 km in 25 hours. Find the speed of the train.

Solution : Applying the above formula (iii), we have

$$\text{Speed} = \frac{625}{25} = 25 \text{ km/hr.}$$

Example 5. Express 20 m/sec in km/hr.

Solution : Applying the above formula (v), we have

$$20 \text{ m/sec} = \left(20 \times \frac{18}{5}\right) \text{ km/hr} = 72 \text{ km/hr.}$$

Rule 2 :

If a certain distance is covered at x km/hr and the same distance is covered at y km/hr, then the average speed during the whole journey is $\frac{2xy}{x+y}$ km/hr.

Example 6. A man covers a certain distance by scooter at 30 km/hr and he returns back to the starting point riding on a car at 25 km/hr. Find his average speed for the whole journey.

Solution : Applying the above Rule (2), we have

$$\text{Avergae speed} = \frac{2 \times 30 \times 25}{30 + 25} \text{ km/hr}$$

$$= 27.27 \text{ km/hr.}$$

Example 7. A train 500 metres long running at a uniform speed passes a station in 35 seconds. If the length of the platform be 221 metres, find the speed of the train in km. per hour.

Solution : The distance covered by the train

$$= 221 + 500$$

$$= 721 \text{ metre}$$

$$\text{Time taken by the train} = 35 \text{ seconds}$$

$$\therefore \quad \text{Speed of the train} = \frac{721}{35} \text{ m/sec.}$$

$$= \frac{721 \times 60 \times 60}{1000 \times 35}$$

$$= 74.16 \text{ km/hour}$$

Example 8. Two trains 80 metres and 120 metres long are running at the rates of 25 km. per

Scanned by CamScanner

hour and 35 km. per hour respectively on parallel rails. If they are moving in opposite directions, how long will they take to pass each other ?

Solution :

$$\text{Relative speed} = 25 + 35 = 60 \text{ km/hour}$$
$$= \frac{60 \times 1000}{60 \times 60} \text{ km/hr}$$
$$= \frac{50}{3} \text{ metres/sec.}$$

and the total distance to be covered

$$= 80 + 120 = 200 \text{ metres}$$

$$\therefore \quad \text{Time taken} = \frac{200 \times 3}{50}$$
$$= 12 \text{ second}$$

EXERCISE 12

1. A train 250 metres long passes a pole in 12 seconds. Then the speed of train is—
   (A) 25 km/hour (B) 68 km/hour
   (C) 72 km/hour (D) 75 km/hour
   (E) 135 km/hour
2. A train is running at the speed of 86.4 km per hour, then how much distance will it cover in 10 minutes ?
   (A) 0.014 km (B) 144 km
   (C) 1.44 km (D) 14.4 km
   (E) None of these
3. How many seconds will a 100 metres long train running at the rate of 60 metres per minute take to pass a certain telegraph post ?
   (A) 1 second (B) 1 min 10 sec.
   (C) 10 seconds (D) 100 seconds
   (E) 60 minutes
4. A train runs 84 kms. per hour. Calculate the speed per second in metre ?
   (A) 61/3 (B) 67/3
   (C) 70/3 (D) 71/3
   (E) 73/3
5. A train 220 metres long takes 20 seconds to cross a platform 280 metres long. What is the speed of the train ?
   (A) 39.6 kmph (B) 90 kmph
   (C) 50.4 kmph (D) 48 kmph
   (E) None of these
6. A train covers a distance of 60 km between station A & B in 45 minutes. If its speed is reduced by 5 km/hr. how much time in minutes will it take to cover the same distance ?
   (A) 80 (B) 42
   (C) 48 (D) 50
   (E) None of these
7. If a train running at 75 km per hour crosses a man walking in the same direction at a speed of 10 km/h in 6 seconds, what will be the length of the train ?
   (A) 130 m (B) 140 m
   (C) 140.55 m (D) 141.66 m
   (E) None of these
8. A passenger train running at the speed of 80 km/hour leaves the railway station 6 hours after a goods train leaves and overtakes it in 4 hours. What is the speed of the goods train ?
   (A) 32 km/hr (B) 60 km/hr
   (C) 80 km/hr (D) 120 km/hr
   (E) None of these
9. A and B have to cross 1400 metres distance and the time (in minutes) taken by them is the ratio of 3 : 7. If B take 16 minutes more than A then what is B's speed (in kms) per hour ?
   (A) 7 (B) 5.25
   (C) 3 (D) 2.5
   (E) None of these
10. A railway train travelling at 72 km per hour crosses a signal in 9 seconds. What is the length of the train in metres ?
    (A) 1800 (B) 180
    (C) 90 (D) 18
    (E) None of these
11. A 220 metre long railway train crosses another 180 metre long train running in the opposite direction in 8 seconds. If the speed of this longer train is 40 metre/second, the speed of the other shorter train in metre/sec. is—
    (A) 50 (B) 90
    (C) 40 (D) 10
    (E) None of these
12. A man covers a distance by car driving at 70 km/hr and he returns back to the starting point riding on a scooter at 55 km/hr. Find his average speed for the whole journey.
    (A) 50 km/hr (B) 60 km/hr
    (C) 61.5 km/hr (D) 80 km/hr
    (E) None of these

Scanned by CamScanner

13. A man is walking at a speed of 12 km/hr After every km he takes rest for 12 minutes. How much time will take to cover a distance of 36 km. ?

(A) 5 hrs (B) 6 hrs
(C) 7 hrs (D) 10 hrs
(E) None of these

14. A boy walking at a speed of 10 km/hr reaches his school 15 minutes late. Next time he increases his speed 2 km/hr, but still he is late by 5 minutes. Find the distance of his school from his house.

(A) 4 km (B) 6 km
(C) 8 km (D) 10 km
(E) None of these

15. A motor car does a journey in 10 hrs, the first half at 21 km/hr and the second half at 24 km/hr. Find the distance.

(A) 140 km (B) 170 km
(C) 200 km (D) 224 km
(E) None of these

ANSWERS WITH HINTS

1. (D) Time taken by the train to pass a pole

$= 12$ seconds

and distance covered by the train to pass a pole $= 250$ m

$\therefore$ Speed of the train $= \frac{250}{12}$ m/s

$= \frac{250 \times 60 \times 60}{12 \times 100}$

$= 75$ km/hr

2. (D) 3. (D) 4. (C) 5. (B)

6. (C) Speed of the train before reduction

$= \frac{60 \times 60}{45} = 80$ km/hr

Speed after reduction $= 80 - 5 = 75$ km/hr

$\therefore$ Time taken to cover the same distance at 75 km/hr $= \frac{60}{75}$ hrs $= 48$ min.

7. (C) 8. (A)

9. (C) Let the speed of A be x km/hr and that of B be y km/hr

$\therefore \quad \frac{1.4}{x} : \frac{1.4}{y} = 3 : 7$

or, $\frac{y}{x} = \frac{3}{7}$

or, $3x - 7y = 0 \quad \ldots(i)$

$\frac{1.4}{y} - \frac{1.4}{x} = \frac{16}{60}$

or, $\frac{x-y}{xy} = \frac{4}{21} \quad \ldots(ii)$

On solving equations (i) and (ii) we get,

$x = 7$ and $y = 3$.

10. (B) 11. (D)

12. (C) **TRICKS**—If a certain distance is covered at x km/hr and the same distance is covered at y km/hr, then the average speed during the whole journey is $\frac{2xy}{x+y}$ km/hr.

$\therefore$ Average speed $= \frac{2 \times 70 \times 55}{70 + 55}$ km/hr

$= 61.5$ km/hr

13. (C) Rest time = Number of rest × Time for each rest

$= 35 \times \frac{12}{60} = 7$ hr.

[$\because$ To cover 36 km, the man has to take rest 35 times, as takes rest every hour]

Total time to cover 36 km $= \frac{36}{12} + 7 = 10$ hrs.

14. (D) **TRICKS**—A person walking at a speed of x km/hr reaches his destination x_1 hrs late. Next time he increases his speed by y km/hr, but still he is late by y_1 hrs. The distance of his destination from his house is given by

$$\left[(x_1 - y_1)(x + y)\frac{x}{y}\right]$$

$\therefore$ Required distance

$= \left(\frac{10-5}{60}\right)(10+2) \times \frac{10}{2}$

$= 10$ km.

15. (D)

●●●

Scanned by CamScanner

SIMPLE AND COMPOUND INTEREST

Interest is the money paid for the use of money borrowed.

The sum borrowed is called the principal. The sum of interest and principal is called the amount. If the interest is paid as it falls due, it is called the simple interest (S.I.).

Money is said to be lent at compound interest if the interest is not paid as soon as it falls due but is added to the principal after a fixed period, so that the amounts, at the end of the period becomes the principal for the next period.

Important Formulae

1. Amount = Principal + Interest

2. Simple Interest $= \dfrac{\text{Principal} \times \text{Rate} \times \text{Time}}{100}$

3. Amount for compound Interest

$$= \text{Principal}\left(1 + \frac{\text{Rate}}{100}\right)^{\text{Time}}$$

4. Compound Interest

$$= \text{Principal}\left[\left(1 + \frac{\text{Rate}}{100}\right)^{\text{Time}} - 1\right]$$

Rule 1 :

(A) To find Simple Interest

Simple Interest (S.I.) $= \dfrac{P \times r \times t}{100}$; where P = principal amount, t = number of years, r = rate per cent.

Example 1. Find the simple interest on Rs. 800 for 5 years at 8 per cent.

Solution : $\text{S.I.} = \dfrac{800 \times 5 \times 8}{100}$

$= \text{Rs. } 320$

(B) To find Principal

$$P = \frac{100\,I}{tr}$$

Example 2. What sum of money will produces Rs. 286 interest in $3\frac{1}{4}$ years at $5\frac{1}{2}$ per cent simple interest ?

Solution : Applying the above formula, we have $P = \dfrac{100 \times 250}{3\frac{1}{4} \times 5\frac{1}{2}} = \text{Rs. } \dfrac{100 \times 286 \times 4 \times 2}{13 \times 11}$

$= \text{Rs. } 1600.$

(C) To find rate per cent

$r = \dfrac{100\,I}{Pt}$; where I = Interest,

P = Principal amount, t = no. of years.

Example 3. A sum of Rs. 468.75 was lent out at a simple interest and at the end of 1 year 8 month the total amount was Rs. 500. Find the rate of interest per cent per annum.

Solution : $I = A - P = 500 - 468.75$

$= \text{Rs. } 31.25$

$\therefore \quad r = \dfrac{100 \times 31.25}{468.75 \times \frac{5}{3}}$

$= 100 \times \dfrac{3125}{46875} \times \dfrac{3}{5}$

$= 4\%$

Example 4. Find the simple interest of Rs. 850 for $4\frac{1}{3}$ years at the rate of 6% per annum.

Solution : $\text{S.I.} = \dfrac{P \times R \times T}{100} = \dfrac{850 \times 6 \times 13}{100 \times 3}$

$= 221$

Example 5. Find the compound interest for Rs. 2000 for 3 years at the rate of 10% per annum.

Solution : Compound interest

$$= \text{Principal}\left[\left(1 + \frac{\text{Rate}}{100}\right)^{\text{Time}} - 1\right]$$

$$= 2000\left[\left(1 + \frac{10}{100}\right)^{3} - 1\right]$$

Scanned by CamScanner

$$= 2000\left(\frac{11}{10}\times\frac{11}{10}\times\frac{11}{10}-1\right)$$

$$= 2000\left(\frac{1331}{1000}-1\right)$$

$$= 2000\times\frac{331}{1000}$$

= Rs. 662.

EXERCISE 13

1. Find the sum which amounts to Rs. 1460 in 4 years at $11\frac{1}{2}\%$ rate ?
   (A) Rs. 564 (B) Rs. 790
   (C) Rs. 1000 (D) Rs. 1200
   (E) None of these

2. Simple interest on Rs. 200 at 5% per annum for $2\frac{1}{2}$ years is—
   (A) Rs. 12.50 (B) Rs. 15.00
   (C) Rs. 20.00 (D) Rs. 25.00
   (E) Rs. 30.00

3. In how many years a sum will be thrice of it at the rate of 10% per annum ?
   (A) 50 years (B) 40 years
   (C) 30 years (D) 20 years
   (E) 10 years

4. In how many years does a sum get doubled at simple interest rate of 12.5% p.a. ?
   (A) 6 yrs
   (B) 8 yrs
   (C) 10 yrs
   (D) Cannot be determined
   (E) None of these

5. Ram invests a part of Rs. 8000 at 4% per year and the remainder at 5% per year. His annual income from the investment is Rs. 350. The ratio of two parts of investment is—
   (A) 4 : 5 (B) 5 : 4
   (C) 3 : 5 (D) 5 : 3
   (E) None of these

6. At what rate per cent per annum of simple interest will a certain sum of money become triple in 8 years ?
   (A) 5 (B) 8
   (C) 10 (D) 12
   (E) None of these

7. If simple interest on a sum at the rate of 10% amounts to Rs. 4000 in 4 years. What will be the sum ?
   (A) Rs. 9000 (B) Rs. 10000
   (C) Rs. 11000 (D) Rs. 12000
   (E) None of these

8. A sum of money doubles itself in 8 years, simple interest. What is the rate of interest ?
   (A) 12% (B) $12\frac{2}{3}\%$
   (C) $8\frac{2}{3}\%$ (D) $12\frac{1}{2}\%$
   (E) None of these

9. In what time Rs. 150 will produce the same interest at 8% as Rs. 800 produce in 3 years at $4\frac{1}{2}\%$?
   (A) 9 years (B) 8 years
   (C) 12 years (D) 6 years
   (E) None of these

10. If Rs. 450 amount to Rs. 540 in 4 years at simple interest; what sum will amount to Rs. 637.50 in 5 years at the same rate ?
    (A) Rs. 550 (B) Rs. 510
    (C) Rs. 455 (D) Rs. 505
    (E) None of these

11. A man buys a house and pays Rs. 10000 cash and Rs. 8800 at 2 years credit at 5%. Find the cash price of the house.
    (A) Rs. 20000 (B) Rs. 16000
    (C) Rs. 17000 (D) Rs. 18000
    (E) None of these

12. A bank pays 3% on all home saving deposits and has a system of adding interest to the principal after every 6 months. If deposit now Rs. 1000, how much interest shall I get after 2 years ?
    (A) Rs. 61.36 (B) Rs. 59.36
    (C) Rs. 62.76 (D) Rs. 68.36
    (E) None of these

13. A sum of Rs. 600 amounts to Rs. 720 in 4 years. What will it amount to if the rate of interest is increased by 2% ?
    (A) Rs. 648 (B) Rs. 768
    (C) Rs. 672 (D) Rs. 792
    (E) None of these

Scanned by CamScanner

14. The difference between simple interest and compound interest on a certain amount at the rate of 10% per annum for 2 years is Rs. 1.50. What is the amount ?

(A) Rs. 150 (B) Rs. 750
(C) Rs. 1500 (D) Rs. 7500
(E) None of these

15. In how many years will a sum of Rs. 1600 will amount to Rs. 1852.25 P at the rate of 10% per annum compounded half yearly ?

(A) 1 year (B) $1\frac{1}{2}$ years
(C) $1\frac{3}{4}$ years (D) 2 years
(E) None of these

16. Rs. 10000 lent at 10% per annum on compound interest in 4 years will amount to—

(A) Rs. 14641 (B) Rs. 14541
(C) Rs. 13310 (D) Rs. 13210
(E) None of these

17. The simple interest on a certain sum at a certain rate in 3 years is Rs. 78 and the compound interest in 2 years is Rs. 53.04, find the rate.

(A) 5% (B) 3%
(C) 6% (D) 4.5%
(E) None of these

18. A certain sum put out at compound interest amounts to Rs. 8820 in 3 years and to Rs. 9261 in 4 years. Find the rate.

(A) 5.5% (B) 3.8%
(C) 6% (D) 5%
(E) None of these

19. Find the difference between Compound Interest and Simple Interest on Rs. 1000 in 3 year at 10% yearly.

(A) Rs. 331 (B) Rs. 441
(C) Rs. 341 (D) Rs. 300
(E) None of these

20. The compound interest on a certain sum at 5% in $1\frac{1}{2}$ years is Rs. 91.50, find the simple interest.

(A) Rs. 80 (B) Rs. 110
(C) Rs. 90 (D) Rs. 100
(E) None of these

21. The simple interest on a certain sum of money for 2 years at 10% per annum is Rs. 400. Find the compound interest at the same rate and for the same time.

(A) Rs. 300 (B) Rs. 380
(C) Rs. 420 (D) Rs. 450
(E) Rs. 900

22. A sum of money placed at compound interest doubles itself in 4 years. In how many years will it amount to eight times itself ?

(A) 4 years (B) 6 years
(C) 8 years (D) 10 years
(E) 12 years

23. Rs. 7500 is borrowed at C.I. at the rate of 4% per annum. What will be the amount to be paid after 6 months, if interest is compound quarterly ?

(A) Rs. 7250.75 (B) Rs. 7460.75
(C) Rs. 7650.75 (D) Rs. 8000.10
(E) None of these

24. If the difference between C.I. and S.I. on certain sum of money for three years at 5% per annum is Rs. 122, find the sum.

(A) Rs. 10000 (B) Rs. 12000
(C) Rs. 14000 (D) Rs. 16000
(E) Rs. 20000

25. Find the difference between C.I. and S.I. on Rs. 8000 for 3 years at 2.5 per annum

(A) Rs. 10.253 (B) Rs. 12.143
(C) Rs. 15.125 (D) Rs. 23.125
(E) None of these

ANSWERS WITH HINTS

1. (C)

2. (D) $\text{S.I.} = \frac{200 \times 5 \times 5}{100 \times 2}$

$= \text{Rs. } 25$

3. (D) 4. (B)

5. (D) Suppose Ram invests Rs. x at 4%

$\therefore$ Ram invests Rs. $(8000 - x)$ at 5%

$\therefore$ Interest on Rs. $x = \frac{x \times 4 \times 1}{100} = \text{Rs. } \frac{x}{25}$

and interest on Rs. $(8000 - x)$

$= \frac{(8000 - x) \times 5 \times 1}{100}$

$= \text{Rs. } \frac{8000 - x}{20}$

Scanned by CamScanner

$$\therefore \quad \frac{x}{25} + \frac{8000 - x}{20} = 350$$

$$x = \text{Rs. } 5000$$

Hence, the invest Rs. 5000 at 4% and Rs. 3000 at 5%

$$\therefore \quad \text{Ratio} = 5 : 3$$

6. (E)

7. (B) $$\text{S.I.} = \frac{P \times T \times R}{100}$$

$$\therefore \quad 4000 = \frac{P \times 10 \times 4}{100}$$

$$\therefore \quad P = \text{Rs. } 10000$$

8. (D) 9. (A) 10. (B) 11. (D) 12. (A)

13. (B) 14. (A)

15. (B) Rate of interest half yearly

$$= \frac{1}{2} \times 10 = 5\%$$

Suppose time is n years

$$= 2n \text{ half yearly}$$

$$\therefore \quad 1852.20 = 1600 \left(1 + \frac{5}{100}\right)^{2n}$$

$$\text{or,} \quad \frac{1852.20}{1600} = \left(\frac{21}{20}\right)^{2n}$$

$$\text{or,} \quad \frac{18522}{16000} = \left(\frac{21}{20}\right)^{2n}$$

$$\text{or,} \quad \frac{9261}{8000} = \left(\frac{21}{20}\right)^{2n}$$

$$\text{or,} \quad \left(\frac{21}{20}\right)^{3} = \left(\frac{21}{20}\right)^{2n}$$

$$\text{or,} \quad 2n = 3$$

$$\therefore \quad n = \frac{3}{2}$$

$$n = 1\frac{1}{2} \text{ years}$$

16. (A) 17. (E) 18. (D) 19. (A) 20. (C)

21. (C) **TRICKS—**If the S.I. on a certain sum for 2 years at r% be Rs. 'S' then the C.I. is given by the following formula,

$$\text{C.I.} = \left[\frac{r + 200}{200} \times S\right]$$

$$\therefore \quad \text{C.I.} = \frac{210}{200} \times 400$$

$$= \text{Rs. } 420$$

22. (E) We have,

$$P\left(1 + \frac{r}{100}\right)^4 = 2P$$

$$\therefore \quad \left(1 - \frac{r}{100}\right)^4 = 2$$

Cubing both sides, we get

$$\left(1 + \frac{r}{100}\right)^{12} = 2^3$$

$$= 8$$

$$\text{or,} \quad P\left(1 + \frac{r}{100}\right)^{12} = 8P$$

Hence, the required time is 12 years.

23. (C) When interest is compounded quarterly,

$$\text{Amount} = P\left[1 + \frac{r}{\frac{4}{100}}\right]^{4t} = P\left[1 + \frac{r}{400}\right]^{4t}$$

$$= 7500\left[1 + \frac{4}{400}\right]^{4 \times \frac{1}{2}}$$

$$= \frac{7500 \times 101 \times 100}{100 \times 100}$$

$$= \text{Rs. } 7650.75$$

24. (D) **TRICKS—**If the difference between C.I. and S.I. on a certain sum for 3 years at r% is Rs. x,

The sum will be, $$\frac{\text{Difference} \times (100)^3}{r^2 (300 + r)}$$

$$\therefore \quad \text{Sum} = \frac{122 \times 100 \times 100 \times 100}{5^2 (300 + 5)}$$

$$= \text{Rs. } 16000$$

25. (C) **TRICKS—**On a certain sum of money, the difference between compound interest and Simple interest for 3 years at r% per annum is given by

$$\text{Difference} = \frac{\text{Sum} \times r^2 (300 + r)}{(100)^3}$$

$$\therefore \text{Difference} = \frac{8000 \times 2.5 \times 2.5 (300 + 2.5)}{100 \times 100 \times 100}$$

$$= \frac{8 \times 25 \times 25 \times 3025}{100 \times 100 \times 100}$$

$$= \frac{121}{8}$$

$$= \text{Rs. } 15.125$$

●●●

Scanned by CamScanner

AVERAGE

Rule 1 :

To find average of any number of quantities of the same kind is, to add all the items together and then divide the sum by the number of items.

$$\therefore \quad \text{Average} = \frac{\text{Sum of all items}}{\text{No. of items}}$$

Example 1. The weight of 5 boys in a class are 49.6 kg., 39.8 kg. 40.8 kg 45.2 kg, and 24.6 kg. Find their average weight.

Solution : Total weight of 5 boys

$= 49.6 + 39.8 + 40.8 + 45.2 + 24.6 = 200$ kg

$$\therefore \quad \text{Average weight} = \frac{200}{5} = 40 \text{ kg.}$$

Rule 2 :

To find the sum, when the number of quantities and their average is given. We have the following formula :

Sum of quantities = Average × Number of quantities.

Example 2. The average marks obtained by 60 candidates in a certain examination is 45. Find the total marks.

Solution : Following the above formula, we have

The total marks $= 60 \times 45 = 2700$

Rule 3 :

To find number of quantities, when the sum of quantities and average are given. We have the following formula :

$$\text{Number of quantities} = \frac{\text{Sum of quantities}}{\text{Average}}$$

Example 3. If the sum of 'n' number of quantities is 180 and the average is 6. Find the value of 'n'.

Solution : Applying the above formula, we have $n = \frac{180}{6} = 30$.

Rule 4 :

If the average age of 'A' boys is 'x' and the average age of 'B' boys out of them ('A' boys) is 'y', then the average age of the rest of the boys is $\frac{Ax - By}{A - B}$.

Example 4. The average of 20 quantities is 24. The average of 12 of them is 16. What is the average of remaining four numbers.

Solution : Applying the above formula, we have

$$\text{The required average} = \frac{20 \times 24 - 12 \times 16}{20 - 12} = 36$$

Rule 5 :

If a person travels three equal distance at a speed of x km/hr, y km/hr and z km/hr respectively, then the average speed during the whole journey is $\frac{3xyz}{xy + yz + xz}$ km/hr.

Example 5. A person divides his total route of journey into three equal parts and decides to travel the three parts with speeds of 40, 30 and 15 km/hr respectively. Find his average speed during the whole journey.

Solution : Average speed

$$= \frac{3 \times 40 \times 30 \times 15}{40 \times 30 + 30 \times 15 + 40 \times 15}$$

$$= \frac{3 \times 40 \times 30 \times 15}{2250}$$

$= 24$ km/hr.

Rule 6 :

The average of odd numbers from 1 to n is $\left[\frac{\text{Last odd number} + 1}{2}\right]$, where n = natural odd number.

Example 6. What is the average of odd numbers from 1 to 35 ?

Scanned by CamScanner

Solution : Applying the above formula, we have,

The required answer $= \frac{35+1}{2} = 18.$

Rule 7 :

The average of even numbers from 1 to n is $\left[\frac{\text{Last even number} + 2}{2}\right]$, where n = natural even number.

Example 7. What is the average of even numbers from 1 to 60 ?

Solution : Applying the above formula, we have

The required answer $= \frac{60+2}{2} = 31.$

Rule 8 :

The average of first n consecutive odd numbers is n.

Example 8. Find the average of first 20 consecutive odd numbers.

Solution : Applying the above formula, we have,

The required answer = 20.

Rule 9 :

The average of squares of first n consecutive even numbers is $\left[\frac{2(n+1)(2n+1)}{3}\right]$.

Example 9. Find the average of squares of first 20 consecutive even number.

Solution : The required answer

$= \frac{2(20+1)(40+1)}{3} = \frac{2 \times 21 \times 41}{3}$

$= 574$

Example 10. The average temperature for monday, tuesday and wednesday was 36°C. The average temperature for tuesday, wednesday and thursday was 38°C and that for thursday was 37°C. What was the temperature on Monday ?

Solution : Average temperature for monday, tuesday and wednesday = 36°C

∴ Total temperature for monday, tuesday and wednesday = 3×36

= 108°C

∵ Average temperature for tuesday, wednesday and thursday = 38°C

∴ Total temperature for tuesday, wednesday and thursday = 3×38

= 114°C

But temperature for thursday = 37°C

∴ Total temp. for tuesday and wednesday

= $114 - 37$

= 77°C

∴ Temperature on monday = $108 - 77$

= 31°C

Example 11. The average age of 7 members of a family is 18 years. If the head of the family is excluded the average age of the rest of the members would be 5 years less. Find the age of the head of the family.

Solution : Total age of 7 members of the family = 7×18

= 126 yrs.

Total age of 6 members of the family excluding the head = 6×13

= 78 yrs.

Age of the head of the family = $126 - 78$

= 48 yrs.

EXERCISE 14

1. Average age of 30 boys in a class is 10 years. If, however, the age of their teacher is also included, then the average increases by one year. What is the age of the teacher ?
   (A) 38 years (B) 40 years
   (C) 30 years (D) 41 years
   (E) None of these
2. The average of 3 numbers is 7 and average of the first two numbers is 5. What is the third number ?
   (A) 11 (B) 7
   (C) 3 (D) 2
   (E) 6
3. A motorist complete the journey between A and B at a constant speed of 20 kmph and covers the returns journey from B to A at a constant speed of 30 kmph. What was the average speed ?
   (A) 50 kmph (B) 25 kmph
   (C) 24 kmph (D) 26 kmph
   (E) None of these

Scanned by CamScanner

4. Two cyclists start together for a point A, 20 km away. One cyclist goes steadily at 10 kmph while the other goes faster but constant speed. The faster cyclist reaches the point A and returns to meet the slower cyclist exactly half way to the point A. The speed of the faster cyclist was—
   (A) 15 kmph (B) 24 kmph
   (C) 30 kmph (D) 18 kmph
   (E) None of these

5. The average number of students in 5 classes (I to V) is 29. If the average number of students in class I, III and V is 30, then the total number of students in II and IV classes are—
   (A) 45
   (B) 55
   (C) 50
   (D) Cannot be determined
   (E) None of these

6. The average salary of Raju, Sashi and Mahesh is Rs. 800 and the average salary of Sashi, Pramod and Mahesh is Rs.900 and if Pramod's salary is Rs. 900, what is Raju's salary ?
   (A) Rs. 600
   (B) Rs. 300
   (C) Rs. 1700
   (D) Cannot be found out
   (E) None of these

7. The average age of three persons is 45 years, their ages are in the ratio of 2 : 3 : 4. The difference between the ages of the youngest and the eldest of the their is—
   (A) 15 years (B) 20 years
   (C) 30 years (D) 45 years
   (E) None of these

8. The average of the runs scored by a cricket eleven is 50. If the runs scored by the captain is excluded, the average score rises by 5. How many runs did the captain score ?
   (A) 0 (B) 50
   (C) 55 (D) 105
   (E) None of these

9. The average of three number is 77. The first number is double the second, the second is double the third. The number are—
   (A) 22, 44, 88 (B) 24, 48, 96
   (C) 33, 66, 132 (D) 35, 70, 140
   (E) None of these

10. The average of two numbers is 180. If one of them is half the other, the numbers are—
   (A) 110, 220 (B) 120, 240
   (C) 130, 260 (D) 140, 280
   (E) None of these

11. The average of three numbers of which greatest is 16, is 12. If the smallest is half of the greatest, the remaining number is—
   (A) 8 (B) 10
   (C) 12 (D) 14
   (E) None of these

12. The average of 10 quantities is 12. The average of 6 of them is 8. What is the average of remaining four number ?
   (A) 10 (B) 14
   (C) 18 (D) 30
   (E) 80

13. The average of 11 numbers is 21. If 3 is added to each given number, what will be the new average ?
   (A) 21 (B) 31
   (C) 33 (D) 24
   (E) 32

14. The average of 11 result is 30, that of the first five is 25 and that of the last five is 28. Find the value of the 6th number.
   (A) 60 (B) 33
   (C) 65 (D) 69
   (E) None of these

15. A person covers 12 km at 3 km/hr, 18 km at 9 km/hr and 24 km at 4 km/hr. Then find the average speed in covering the whole distance.
   (A) 3 km/hr (B) 4.5 km/hr
   (C) 6 km/hr (D) 9.5 km/hr
   (E) None of these

ANSWERS WITH HINTS

1. (D) Average age of 30 boys = 10 years
   ∴ Total age of 30 boys = 10×30
   = 300 years
   ∵ Average age of 30 boys + 1 teacher
   = 10 + 1
   = 11 years

Scanned by CamScanner

$\therefore$ Total age of 30 boys + 1 teacher

$= 11 \times 31$

$= 341$ years

$\therefore$ Teacher's age $= 341 - 300$

$= 41$ years

2. (A)

3. (C) Time taken by motorist to go from A to B

$= \frac{60}{20} = 3$ hours

and time taken by motorist to go from B to A

$= \frac{60}{30} = 2$ hours

$\therefore$ Total time taken $= 3 + 2 = 5$ hours

and total distance covered

$= 60 + 60 = 120$ km

$\therefore$ Average speed $= \frac{120}{5} = 24$ km/hr.

4. (C) Average salary of Raju, Sashi and Mahesh $=$ Rs. 800

$\therefore$ Total salary of Raju, Sashi and Mahesh

$= 800 \times 3$

$=$ Rs. 2400

$\because$ Average salary of Sashi, Pramod and Mahesh $=$ Rs. 900

$\therefore$ Total salary of Sashi, Pramod and Mahesh

$=$ Rs. 900×3

$=$ Rs. 2700

$\therefore$ Total salary of Sashi and Mahesh

$= 2700 - 900$

$=$ Rs. 1800

Hence salary of Raju $= 2400 - 1800$

$=$ Rs. 600

5. (B) 6. (A) 7. (C) 8. (A) 9. (C)

10. (B)

11. (C) Average of 3 numbers $= 12$

$\therefore$ Total of 3 numbers $= 3 \times 12 = 36$

But the greatest number $= 16$

$\therefore$ The smallest number $= 8$

$\therefore$ The remaining number $= 36 - 16 - 8$

$= 12.$

12. (C) **TRICKS—**If the average age of m boys is x and the average age of 'n' boy is 'y', then the average age of rest of the boys is $\left[\frac{mx - ny}{m - n}\right]$

$\therefore$ The required average $= \frac{10 \times 12 - 6 \times 8}{10 - 6}$

$= 18$

13. (D) **TRICKS—**If the average of 'n' number is 'm' and if 'x' is added or subtracted from each given number, then average becomes $(m + x)$ or $(m - x)$ respectively

$\therefore$ The new average $= 21 + 3 = 24$.

14. (C) 6th number $=$ Total of 11 results –(Total of first five + Total of last five results)

$= 11 \times 30 - (5 \times 25 + 5 \times 28)$

$= 330 - 265$

$= 65$

15. (B) **TRICKS—**If a person covers A km at x km/hr and B km at y km/hr and C km at 2 km/hr, then the average speed in covering the whole distance is $\left[\frac{A + B + C}{\frac{A}{x} + \frac{B}{y} + \frac{C}{z}}\right]$

$\therefore$ The average speed $= \frac{12 + 18 + 24}{\frac{12}{3} + \frac{18}{9} + \frac{24}{4}}$

$= \frac{54}{12} = 4.5$ km/hr.

●●●

Scanned by CamScanner

AREA

Place of occupied by rectilinear figures is known as area. Its unit is square metres.

Important Formulae

1. Area of a rectanlge = length × breadth
2. Area of four walls of a room
   = 2 × height (length + breadth)
3. Area of a circle = π (radius)^2
4. Circumference of a circle = 2π (radius)
5. Area of a square = (side)^2
6. Area of a Triangle = $\frac{1}{2}$ × base × height
7. The area of triangle having given its three sides = $\sqrt{s(s-a)(s-b)(s-c)}$
   where $s = \frac{1}{2}(a+b+c)$ and a, b, c are its length of sides.

Triangle

Rule 1 :

To find the area a triangle if its base and height are given. Area of a triangle

$$= \frac{1}{2} \times \text{base} \times \text{height}.$$

Example 1. The base of a triangular field is 880 metres and its height 550 metres. Find the area of the field. Also calculate the charges for supplying water to the field at rate of Rs. 30 per square hectometre.

Solution :

$$\text{Area of the field} = \frac{\text{Base} \times \text{Height}}{2}$$

$$= \frac{880 \times 550}{2} \text{ sq. metres}$$

$$= \frac{440 \times 550}{100 \times 100} \text{ sq. hectometres}$$

$$= 24.20 \text{ sq. hectometres}$$

Cost of supplying water to 1 sq hectometre

= Rs. 30

∴ Cost of supplying water to whole field

= Rs. 24.20 × 30

= Rs. 726.00

Example 2. If the area of triangle is 60 cm^2 and its base is 8 cm, find its height.

Solution : Area of a triangle

$$= \frac{1}{2} \times \text{base} \times \text{height}$$

or, $60 = \frac{1}{2} \times 8 \times \text{height}$

∴ height = 15 cm.

Rule 2 :

Area of an equilateral triangle = $\frac{\sqrt{3}}{4} \times (\text{side})^2$

and the perimetre of an equilateral traingle

= 3 × side.

Example 3. Find the area of an equilateral triangle each of whose sides measures 4 cm. Also find perimeter of the equilateral triangle.

Solution : Applying the above formula, we have,

Area of an equilateral triangle

$$= \frac{\sqrt{3}}{4} \times (4)^2 = \frac{\sqrt{3}}{4} \times 4 \times 4$$

$$= 4\sqrt{3} \text{ sq. cm}$$

perimeter of an equilateral triangle

= 3 × side = 3 × 4

= 12 cm

Rule 3 :

To find the area of an equilateral triangle if its height is given Area of the equilateral triangle $= \frac{(\text{Height})^2}{\sqrt{3}}$.

Scanned by CamScanner

Example 4. If height of an equilateral triangle is 6 cm. Find its area.

Solution : Applying the above formula, we have

$$\text{Area} = \frac{(6)^2}{\sqrt{3}}$$

$$= \frac{6 \times 2 \times \sqrt{3} \times \sqrt{3}}{\sqrt{3}}$$

$$= 12\sqrt{3} \text{ sq.cm.}$$

Rectangle

Rule 4 :

To find the perimeter of a rectangle if length and breadth are given perimeter = 2 (length + breadth)

Example 5. Find the perimeter of a rectangle of length 16 cm and breadth 12 cm.

Solution : Applying the above formula, we have,

$$\text{Perimeter} = 2(16 + 12) = 26 \text{ cm}$$

Rule 5 :

To find the length of diagonal of a rectangle, if length and breadth are given.

$$(\text{Diagonal})^2 = (\text{length})^2 + (\text{breadth})^2$$

$$\text{or, Diagonal} = \sqrt{(\text{length})^2 + (\text{breadth})^2}$$

Example 6. Find the length of diagonal of a rectangle of length 12 cm and breadth 5 cm.

Solution : Applying the above formula, we have,

$$\text{Diagonal} = \sqrt{(\text{length})^2 + (\text{breadth})^2}$$

$$= \sqrt{(12)^2 + (5)^2}$$

$$= \sqrt{144 + 25}$$

$$= \sqrt{169}$$

$$= 13 \text{ cm.}$$

Example 7. If the length and breadth of a room are 5.56 m and 3.15 m respectively, what is the area of the roof of the room ?

Solution : Length of the room = 5.56 m

and breadth of the room = 3.15 m

$\therefore$ Area of the roof of room $= 5.56 \times 3.15$

$= 17.514$ sq.m

Example 8. A hall is 15 m long and 10 m wide. If the height of the hall is 6 m, what is the area of its four walls ?

Solution : Area of the four walls

$$= 2 \times 6(15 + 10)$$

$$= 12 \times 25$$

$$= 300 \text{ sq.m}$$

Example 9. If the radius of a circle is 56 cm, what is its area ?

Solution : Area of the circle

$$= \pi \times (56)^2$$

$$= \frac{22}{7} \times 56 \times 56$$

$$= 9856 \text{ sq.cm}$$

EXERCISE 15

1. The breadth of a field is 3/4th of this length. If its area is 1200 sq. metres, then the length of the field is—
   (A) 40 metres (B) 30 metres
   (C) 35 metres (D) 60 metres
   (E) 45 metres
2. The base of a triangle is 4 cm and height 5 cm the area of the triangle will be—
   (A) 20 sq. cm (B) 20 cm
   (C) 10 sq. cm (D) 10 cm
   (E) None of these
3. If the area of a square is 144 sq. metres, its perimeter will be—
   (A) 12 metres (B) 24 metres
   (C) 48 metres (D) 60 metres
   (E) 36 metres
4. The radius of circle is diminished by 10%, the area is diminished by—
   (A) 10% (B) 15%
   (C) 19% (D) 20%
   (E) 30%
5. If a man can eat 98 chapatties of 6 inches diameter, how many chapatties of 42 inches diameter can he eat ?
   (A) 2 (B) 4
   (C) 6 (D) 8
   (E) None of these

Scanned by CamScanner

cm 4 cm and 3 cm. What is its surface area ?

(A) 84 cm^2 (B) 124 cm^2
(C) 164 cm^2 (D) 180 cm^2
(E) None of these

7. If the cost of white-washing the four walls of a rectangular room is Rs. 25, then the cost of white-washing a room twice the length, breadth and height will be—

(A) Rs. 50 (B) Rs. 100
(C) Rs. 150 (D) Rs. 200
(E) Rs. 250

8. The length of a hall is 28 metres. If the floor area is 616 sq. metres, what is the breadth of the hall in metres ?

(A) 24.82 (B) 2.20
(C) 24.25 (D) 22.00
(E) None of these

9. The difference between the length and breadth of a rectangle is 23 m. If the perimeter of the rectangle is 206m, find its area.

(A) 2420 sq. m (B) 2480 sq. m
(C) 2520 sq. m (D) 1520 sq. m
(E) None of these

10. The length and the breadth of a rectangular piece of land are in the ratio 3 : 2. The owner of the land spent Rs. 2000 on drawing a fence @ Rs. 12.50 per metre round it. By how much does the length of the land exceed its breadth in metres ?

(A) 16 (B) 32
(C) 80 (D) 160
(E) None of these

11. The breadth of a rectangle is 3/4 of its length. The area of the rectangle is 192 sq. metre. Its perimetre is—

(A) 16 (B) 12
(C) 56 (D) $74\frac{2}{3}$
(E) None of these

12. The diameter of a circle is R^3, the area of the circle is—

(A) 22/7 R^9 (B) 22/7 R^6
(C) $\left(\frac{22\,R^3}{7\times 2}\right)^3$ (D) $\frac{22}{7}\left(\frac{R}{2}\right)^6$
(E) None of these

meter of a square plot if its area is 100 square metres.

(A) $20\sqrt{2}$ and 80 metres
(B) $15\sqrt{3}$ and 60 metres
(C) 15 and 80 metres
(D) 25 and 55 metres
(E) None of these

14. Find the diagonal of square field whose side is 10 metre length.

(A) $5\sqrt{2}$ m (B) $10\sqrt{2}$ m
(C) $15\sqrt{2}$ m (D) $20\sqrt{2m}$
(E) $25\sqrt{2m}$

15. Find the radius of a circular table whose surface area is 154 cm^2.

(A) 49 cm (B) 36 cm
(C) 7 cm (D) 12 cm
(E) 196 cm

16. How many metres of a carpet 75 cm wide will be required to cover the floor of a room which is 20 metres long and 12 metres broad ?

(A) 110 m (B) 240 m
(C) 280 m (D) 320 m
(E) 525 m

17. How many paving stones each measuring 2.5 m × 2 m are required to pave a rectangular courtyard 30 m long and 16.5 m wide ?

(A) 49 (B) 63
(C) 88 (D) 99
(E) None of these

18. A hall-room 39 m 10 cm long and 35 m 70cm broad is to be paved with equal square tiles. Find the largest tile so that the tiles exactly fit.

(A) 1.5 m (B) 1.6 m
(C) 1.7 m (D) 1.8 m
(E) 2 m

19. A rectangular hall 12 m long and 10 m broad, is surrounded by a verandah 2 m wide. Find the area of the verandah.

(A) 120 m^2 (B) 104 m^2
(C) 110 m^2 (D) 160 m^2
(E) None of these

Scanned by CamScanner

20. A path all round the inside of a rectangular park 37 m by 30 m occupies 570 sq.m. Find the width of the path.

(A) 5 m (B) 15 m
(C) 25 m (D) 30 m
(E) 35 m

ANSWERS WITH HINTS

1. (A)
2. (C) Let the length of the field be x metres

$\therefore$ Breadth of the field be $= \frac{3x}{4}$ m

$\therefore$ Area $= x \times \frac{3x}{4}$

or, $1200 = \frac{3x^2}{4}$

$\therefore$ $x = 40$ m

3. (C) 4. (C)
5. (A) Let the man can eat x chapatties of 42 inches diameter

$\therefore$ Area $= x \times \pi \times \left(\frac{42}{2}\right)^2$

and the area of 98 chapatties of 6 inches diameter $= 98 \times \pi \times \left(\frac{6}{2}\right)^2$

$\therefore$ $x \times \pi \times \left(\frac{42}{2}\right)^2 = 98 \times \pi \left(\frac{6}{2}\right)^2$

or, $x = 2$

6. (C) 7. (B) 8. (D)
9. (C) Let the length and breadth of the rectangle be x and y metres respectively

$\therefore$ $x - y = 23$ ...(1)

and $2(x + y) = 206$

or $(x + y) = 103$ ...(2)

On solving equations (1) and (2) we get

$x = 63$ and 40

$\therefore$ Area of the rectangle $= 63 \times 40$

$= 2520$ sq. m

10. (A) 11. (D) 12. (E)
13. (A) Length of diagonal of a square

$= \sqrt{2 \times \text{area}} = \sqrt{2} \times \sqrt{400}$

$= 20\sqrt{2}$ metres

And perimeter of the square

$= \sqrt{16 \times \text{area}} = \sqrt{16 \times 400}$

$= 80$ metres

14. (B) Length of the diagonal of a square

$= \sqrt{2} \times \text{side} = \sqrt{2} \times 10$

$= 10\sqrt{2}$ m

15. (C) Radius of the circle $= \sqrt{\frac{\text{area}}{\pi}}$

$= \sqrt{\frac{154}{\frac{22}{7}}} = \sqrt{7 \times 7}$

$= 7$ cm.

16. (D) Length required

$= \frac{\text{Length of room} \times \text{Breadth of room}}{\text{Width of carpet}}$

$= \frac{20 \times 12}{0.75} = 320$ m.

17. (D) Number of tiles required

$= \frac{\text{Length} \times \text{Breadth of courtyard}}{\text{Length} \times \text{Breadth of each tile}}$

$= \frac{30 \times 16.5}{2.5 \times 2} = 99.$

18. (C) Side of largest possible square tile

= HCF of length and breadth of the room

= HCF of 39.10 m and 35.70 m

= 1.70 m.

19. (B) **TRICKS**—Since the verandah is outside the room

$\therefore$ Area of verandah

$= 2 \times$ (width of verandah) $\times$ [length + breadth of room + 2 (width of verandah]

$= 2 \times 2\ (10 + 12 + 2 \times 2)$

$= 4 \times 26$

$= 104\ m^2$

20. (A) Area of path $= 2 \times$ width of path $\times$ [length +breadth of park $- 2 \times$ (width of path)]

$\Rightarrow$ $570 = 2 \times x \times [37 + 30 - 2x]$

(where x is the width of path)

$\Rightarrow$ $570 = 134\,x - 4x^2$

$\Rightarrow$ $4x^2 - 134\,x + 570 = 0$

On solving this equation we get,

$x = 5$ m.

Scanned by CamScanner

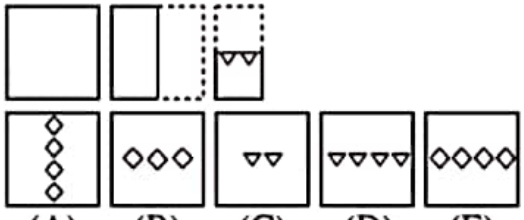
General Intelligence Ability Test

Scanned by CamScanner

Paper Folding Type Questions

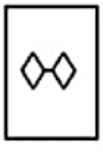
In this type of questions, three figures are given in one line. In first figure a paper-sheet is shown in any shape and size. In second figure it is shown by folding it in two parts. The part which is covered on other by folding is shown by dotted lines. In third figure it is again folded in two parts and some of its part is cut according to the diagram. Then after opening the diagram so obtained is given in one of the five alternatives given below. The candidate has to find out which one of the five alternatives is the correct answer.

Example



(A) (B) (C) (D) (E)

Answer with Explanation—(E) The following figure will be obtained when figure in (3) is opened at one fold.



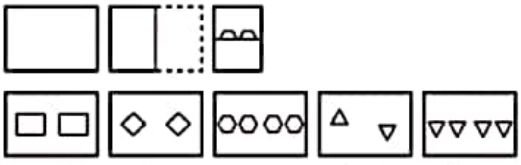
The following figure will be obtained when the above figure is opened at the second fold.

This figure resembles with (E) among the five alternatives. Hence, the correct answer is (E).

Exercise

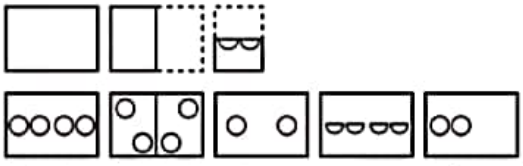
Directions—In each of the following questions, a paper-sheet is folded and cut according to the given diagrams, then after opening, the diagram so obtained is given in one of the five alternatives given below each question. Find out the correct answer.

1.



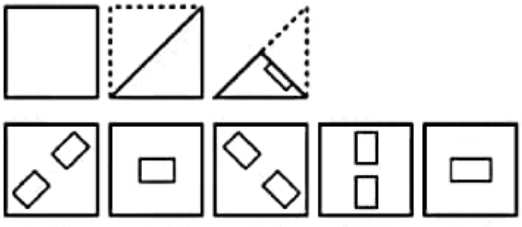
(A) (B) (C) (D) (E)

2.



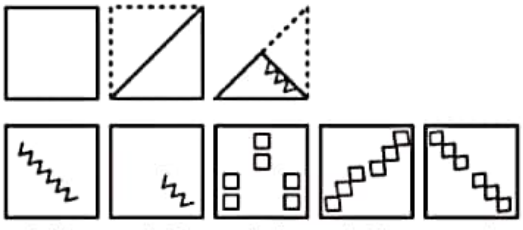
(A) (B) (C) (D) (E)

3.



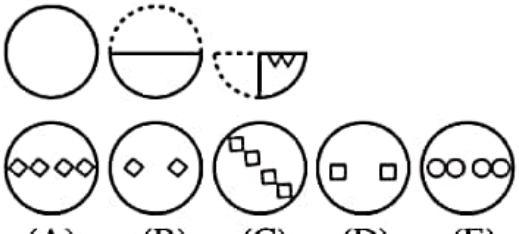
(A) (B) (C) (D) (E)

4.



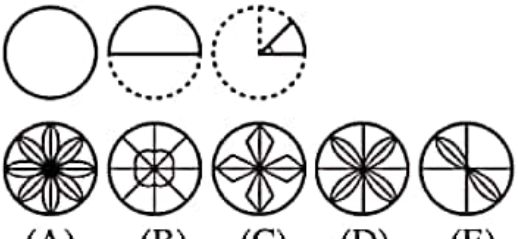
(A) (B) (C) (D) (E)

5.



(A) (B) (C) (D) (E)

6.



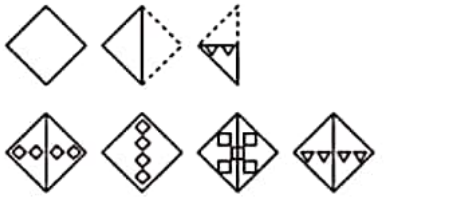
(A) (B) (C) (D) (E)

7.

(A) (B) (C) (D) (E)

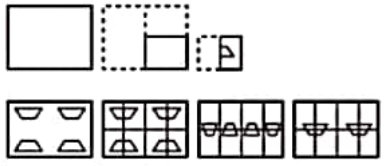
Scanned by CamScanner

8.



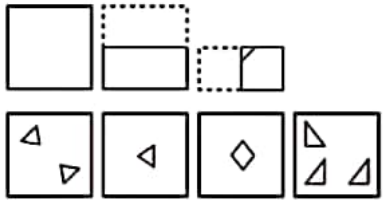
(A) (B) (C) (D) (E)

9.



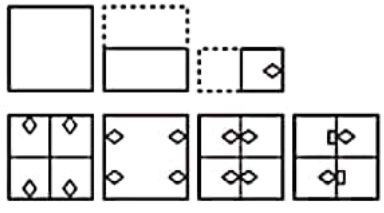
(A) (B) (C) (D)

10.



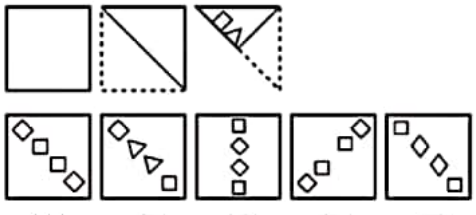
(A) (B) (C) (D)

11.



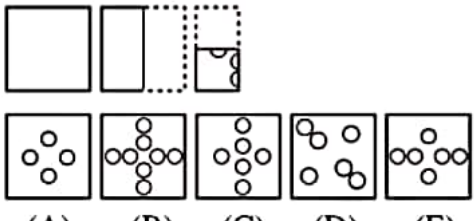
(A) (B) (C) (D)

12.



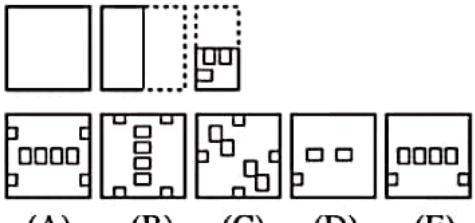
(A) (B) (C) (D) (E)

13.



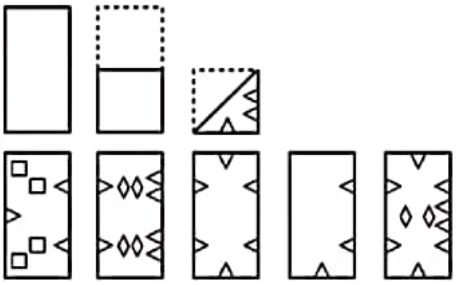
(A) (B) (C) (D) (E)

14.



(A) (B) (C) (D) (E)

15.



(A) (B) (C) (D) (E)

Answers

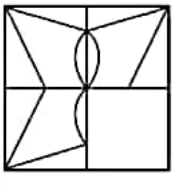
1. (C)	2. (A)	3. (C)	4. (E)	5. (A)
6. (B)	7. (E)	8. (A)	9. (A)	10. (C)
11. (B)	12. (A)	13. (C)	14. (A)	15. (E)

Completion of a Figure by its Quadrand

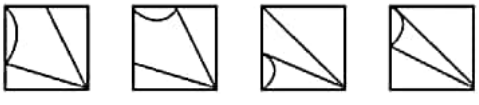
In this Section, there are given one problem figure and four answer figures. One-fourth part of the problem figure is missing. You have to find out that figure from amongst the answer figures, which without change of the direction fits well in the missing part of the problem figure to complete its structure.

Example. 1.

Problem Figure



Answer Figures

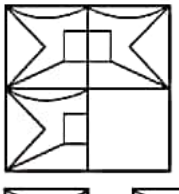


(A) (B) (C) (D)

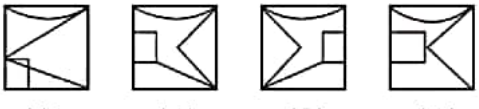
Here the answer figure (A) completes the pattern of the problem figure adjusting in the missing part.

Example. 2.

Problem Figure



Answer Figures



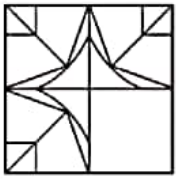
(A) (B) (C) (D)

Here the answer figure (B) completes the problem figure.

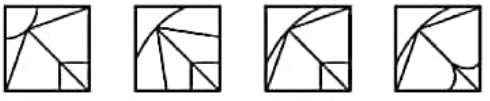
Scanned by CamScanner

Example. 3.

Problem Figure



Answer Figures



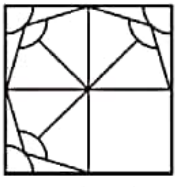
(A) (B) (C) (D)

Here the answer figure (C) completes the pattern of the problem figures adjusting in the missing part. Hence (C) is the required answer.

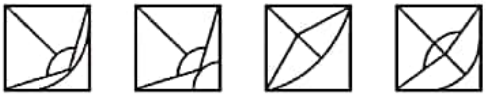
Exercise

Directions—In each of the following questions a problem figure with four alternatives is givne. You have to choose that one alternative which completes the problem figure in a perfect pattern.

1. **Problem Figure**

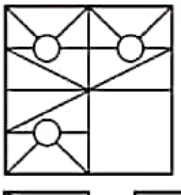


Answer Figures

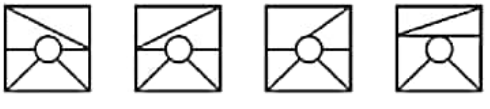


(A) (B) (C) (D)

2. **Problem Figure**

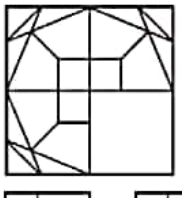


Answer Figures

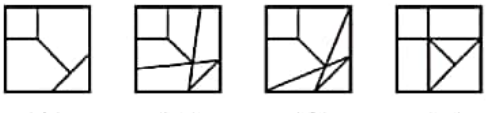


(A) (B) (C) (D)

3. **Problem Figure**

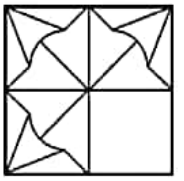


Answer Figures

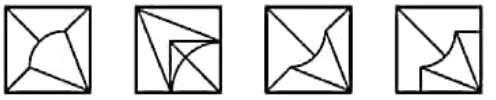


(A) (B) (C) (D)

4. **Problem Figure**

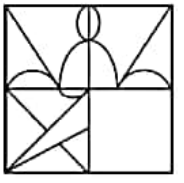


Answer Figures

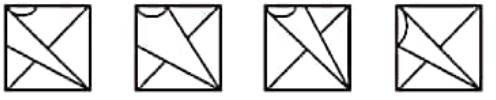


(A) (B) (C) (D)

5. **Problem Figure**

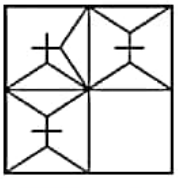


Answer Figures

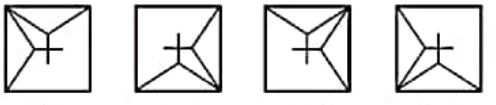


(A) (B) (C) (D)

6. **Problem Figure**

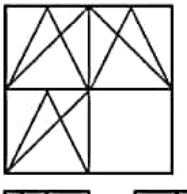


Answer Figures

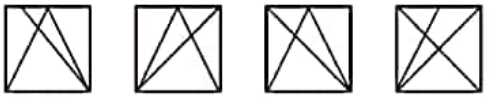


(A) (B) (C) (D)

7. **Problem Figure**

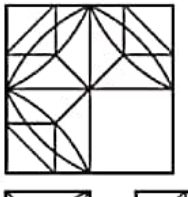


Answer Figures

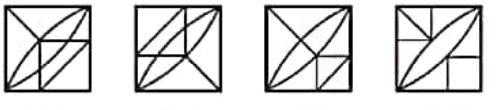


(A) (B) (C) (D)

8. **Problem Figure**



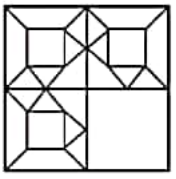
Answer Figures



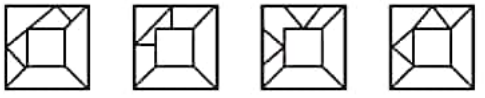
(A) (B) (C) (D)

Scanned by CamScanner

9. **Problem Figure**

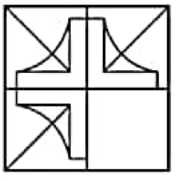


Answer Figures



(A) (B) (C) (D)

10. **Problem Figure**



Answer Figures

(A) (B) (C) (D)

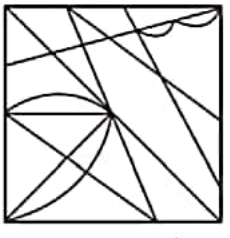
Answers

1. (B)	2. (A)	3. (C)	4. (C)	5. (A)
6. (A)	7. (C)	8. (A)	9. (D)	10. (B)

Embeded Figures

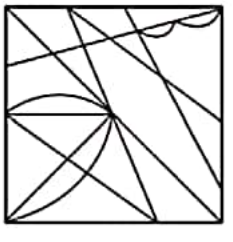
In this test you have to find out the figure out of the four given figures (A), (B), (C) and (D) which is embeded in the given big square consisting of many lines, triangles, arcs etc. Write the serial number of the correct figure.

Example



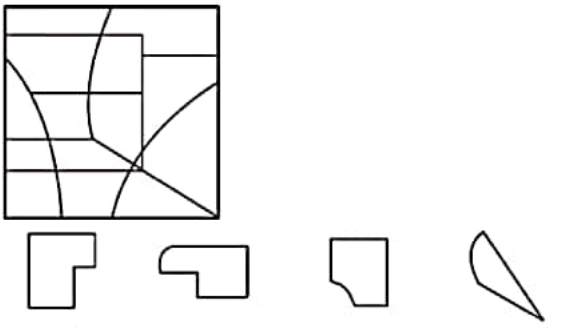
(A) (B) (C) (D)

Answer with Explanation—(D) The embeded figure is shown with dark lines in the figure given here.



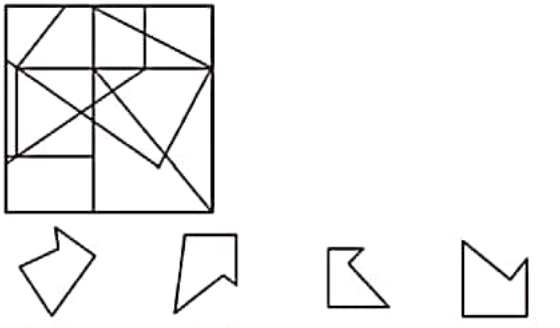
Exercise

1.



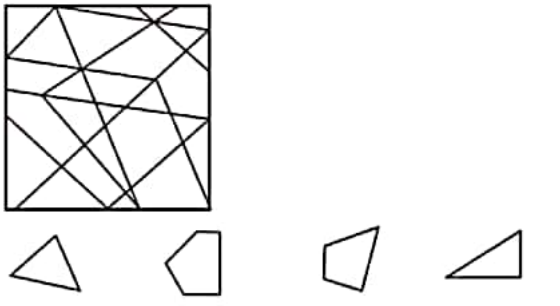
(A) (B) (C) (D)

2.



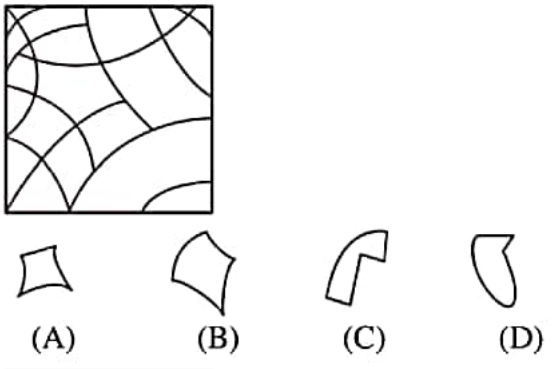
(A) (B) (C) (D)

3.



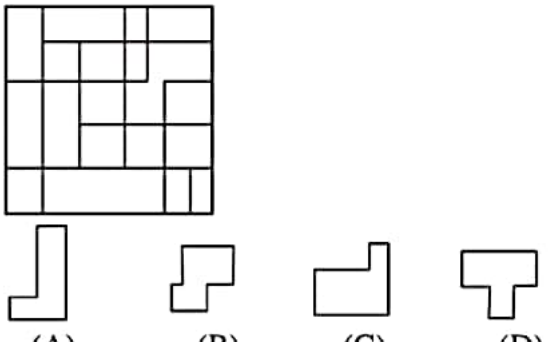
(A) (B) (C) (D)

4.



(A) (B) (C) (D)

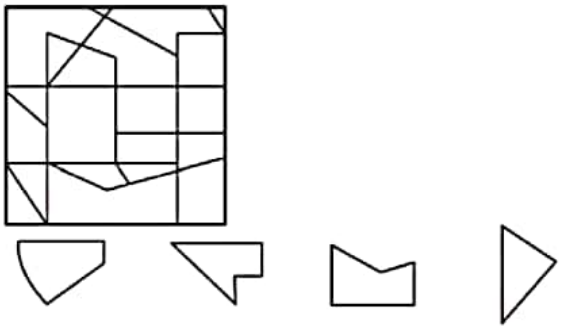
5.



(A) (B) (C) (D)

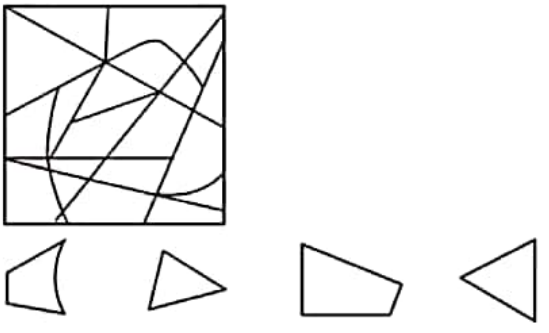
Scanned by CamScanner

6.



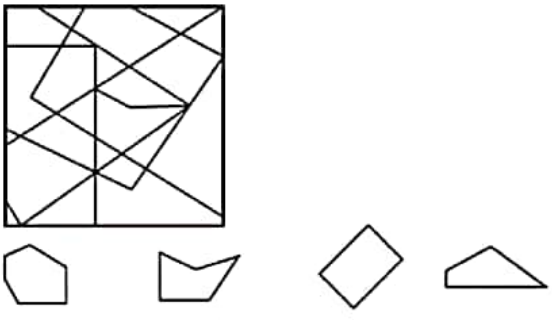
(A) (B) (C) (D)

7.



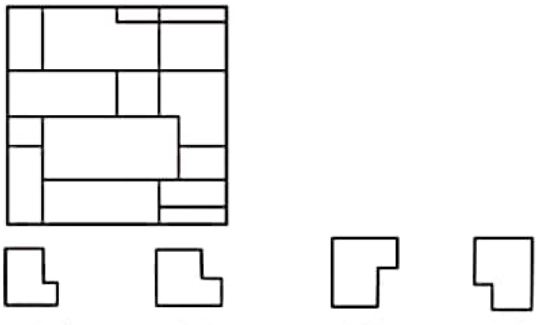
(A) (B) (C) (D)

8.



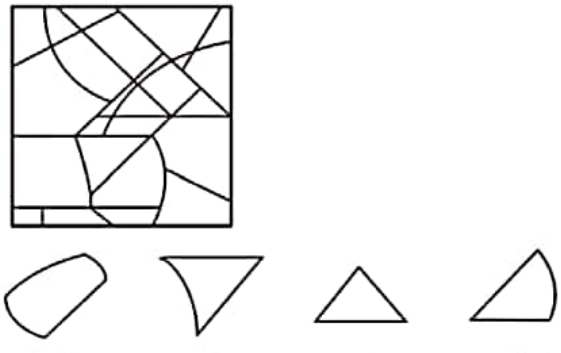
(A) (B) (C) (D)

9.



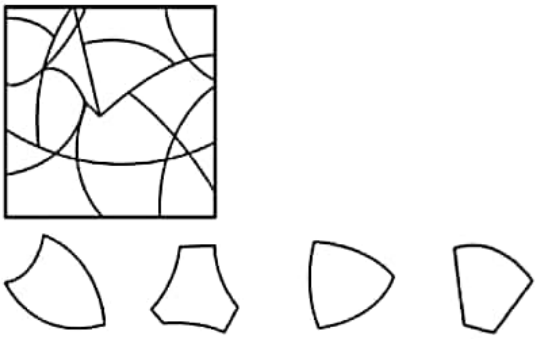
(A) (B) (C) (D)

10.



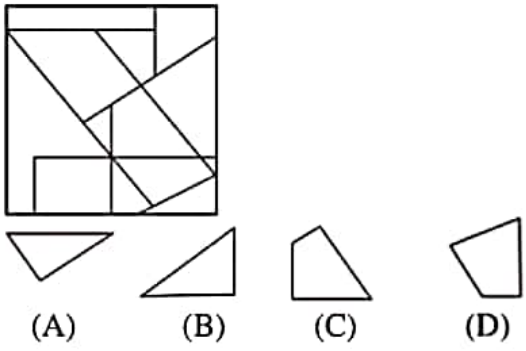
(A) (B) (C) (D)

11.



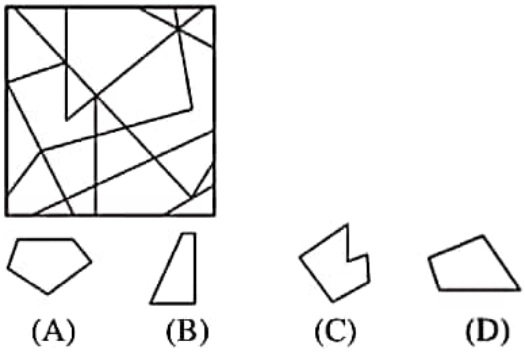
(A) (B) (C) (D)

12.



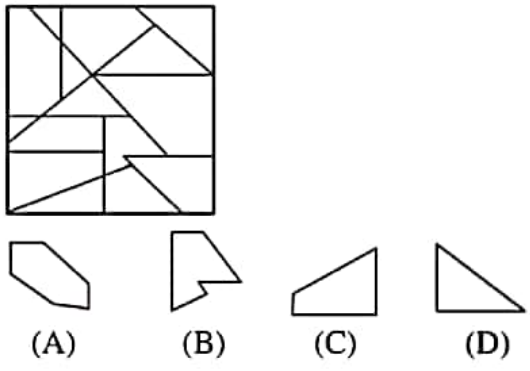
(A) (B) (C) (D)

13.



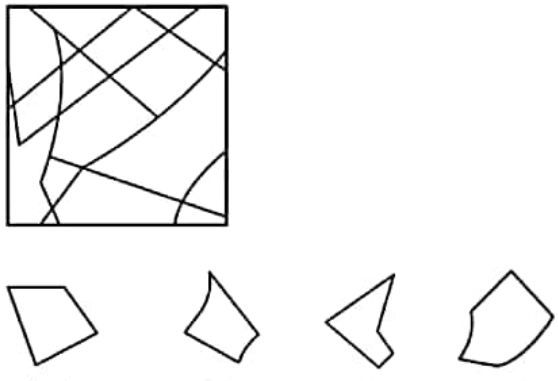
(A) (B) (C) (D)

14.



(A) (B) (C) (D)

15.



(A) (B) (C) (D)

Scanned by CamScanner

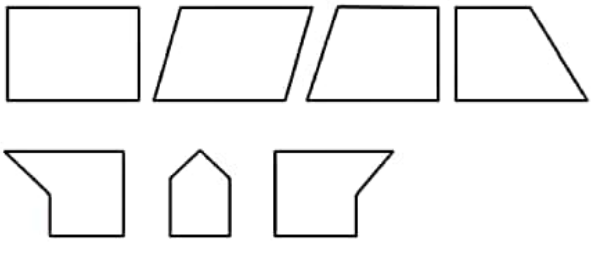
Answers with Explanation

1. (B) First figure from the right in the first row.
2. (A) First figure from the right in the middle.
3. (D) First figure from the right in the lower part.
4. (B) Second figure from the left in the lower part.
5. (B) First figure from the right in the second row.
6. (C) Second figure from the left in the lower part.
7. (B) Middle figure in the central part.
8. (B) Second figure from the right in the middle.
9. (D) First figure from the right in the middle.
10. (B) Second figure from the left in the second row from the bottom.
11. (D) Second figure from the left in the upper part.
12. (C) Second figure from the right in the middle.
13. (C) First figure from the left in the middle.
14. (B) Second figure from the right in second row from the bottom.
15. (D) Second figure from the left in the middle.

Figure and Pieces

In this type of questions four figures (A), (B), (C) and (D) are given and below some pieces figures are given. The candidate has to find out that the given pieces-figures have been cut from which one of the figures (A), (B), (C) and (D).

Example

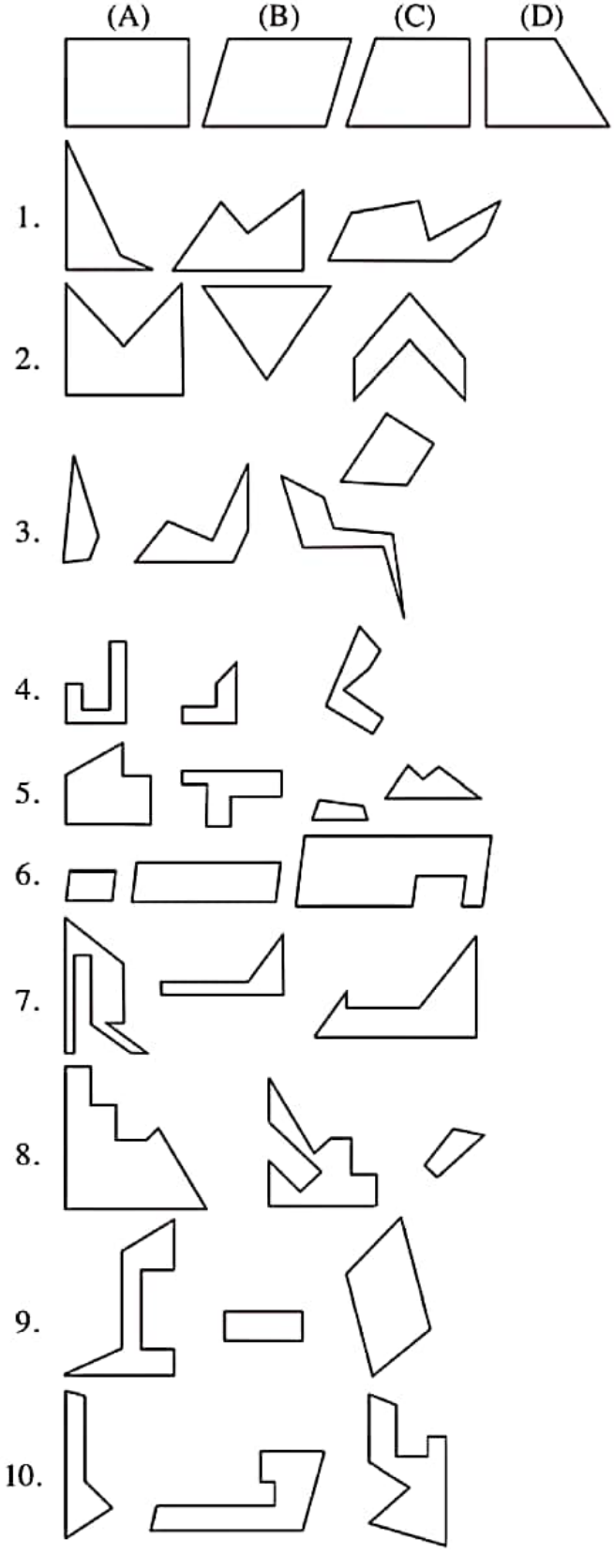


Answer with Explanation—(A) if the given piece-figures are joint in the way shown below,

the figure (A) is obtained, therefore, the correct answer is (A).

Exercise

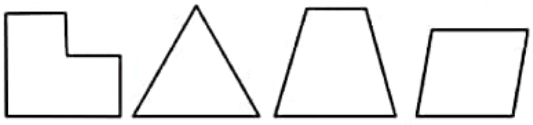
Directions—(Q. 1–10) In each of the questions, there are four answer-figures (A), (B), (C) and (D). Out of these answers one of them is cut into pieces which are shown below in each question. You have to find out one of the answer figures of which the given pieces have been cut.



Scanned by CamScanner

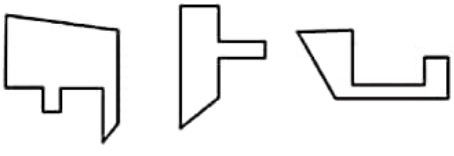
Directions—(Q. 11–20) In each of the questions, there are four answer-figures (A), (B), (C) and (D). Out of these answers one of them is cut into pieces which are shown below in each question. You have to find out one of the answer figures of which the given pieces have been cut.

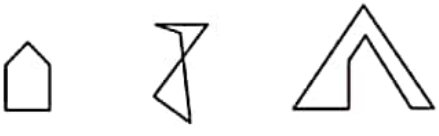
(A) (B) (C) (D)

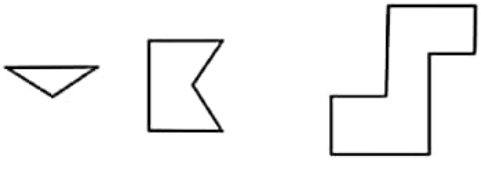


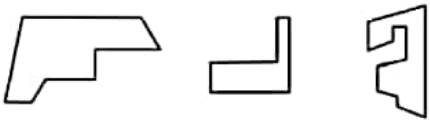
11.

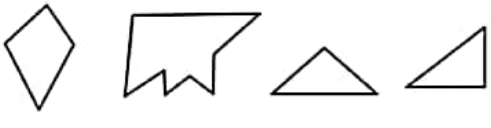
12.

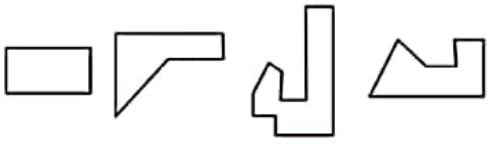
13. 

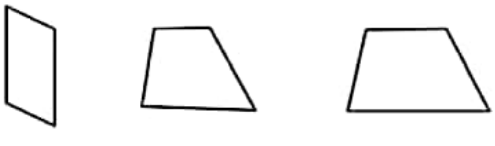
14. 

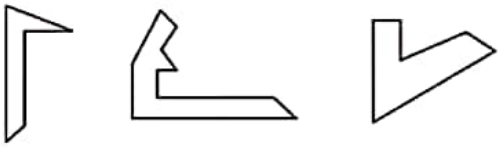
15. 

16. 

17. 

18. 

19. 

20. 

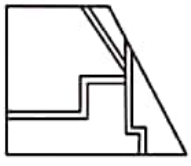
Answers with Explanation

1. (A)

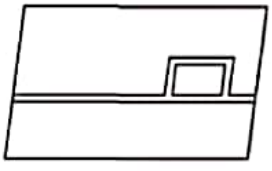
2. (C)

3. (B)

4. (D)



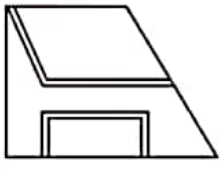
5. (D)



6. (B)

7. (C)

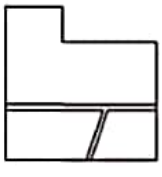
8. (A)



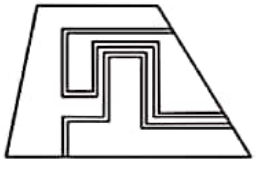
9. (D)

10. (B)

11. (D)

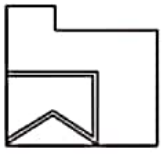


12. (B)

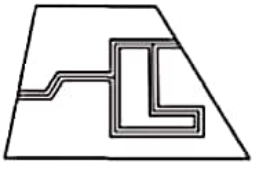


13. (C)

14. (B)

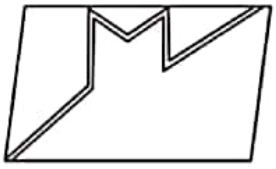


15. (A)

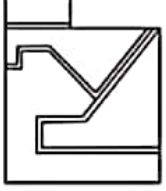


16. (C)

Scanned by CamScanner



17. (D)



18. (A)

19. (D)

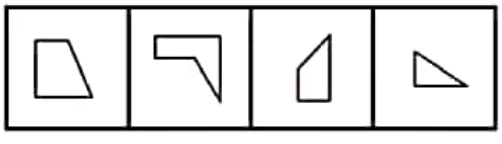
20. (B)

To make the Figure with Pieces given in the Question Part

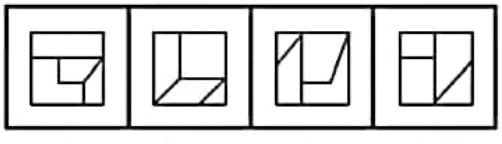
In this type of test all pieces of a figure are given in the question part, joining then you have to make a figure and find out that one such formed figure from the four alternatives given below of each question.

Example 1—Among the four figures which one can be formed from the cut-out pieces given below :

Question Figure



Answer Figures

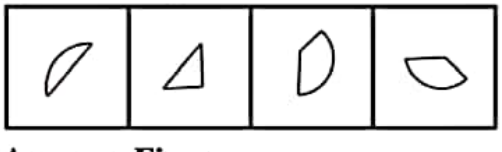


(A) (B) (C) (D)

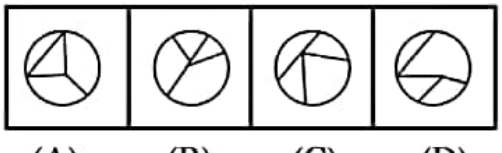
Answer with explanation—The figure in alternative (C) can be formed.

Example 2.

Question Figures



Answers Figures



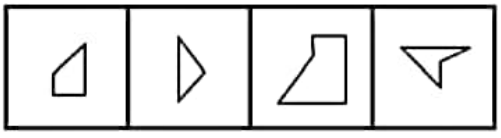
(A) (B) (C) (D)

Answer with explanation—With the help of given pieces the figure in alternative (D) can be formed.

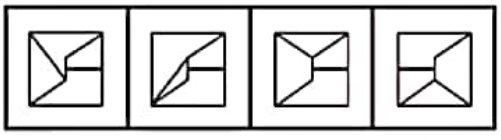
Exercise

Directions—In each of the following questions, among the four figures which one can be formed from the cut-out pices given below :

1. **Question figures**

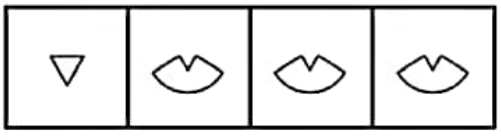


Answer figures

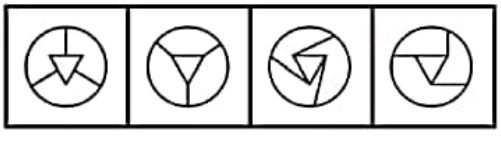


(A) (B) (C) (D)

2. **Question figures**

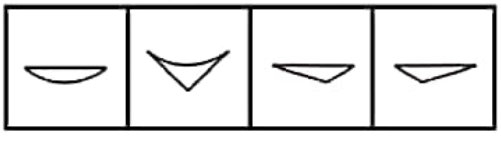


Answer figures

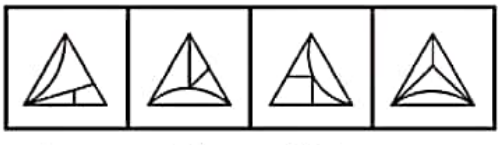


(A) (B) (C) (D)

3. **Question figures**

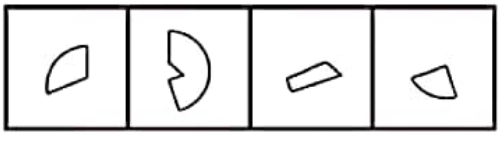


Answer figures

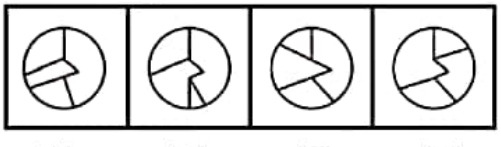


(A) (B) (C) (D)

4. **Question figures**



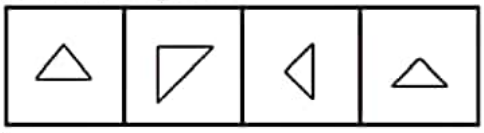
Answer figures



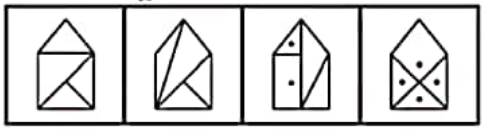
(A) (B) (C) (D)

Scanned by CamScanner

5. **Question figures**

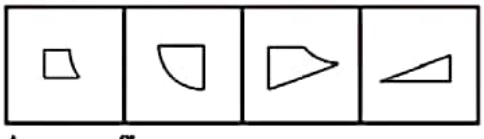


Answer figures

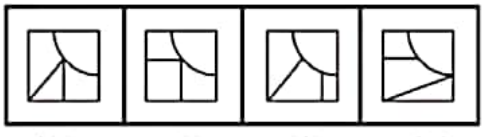


(A) (B) (C) (D)

6. **Question figures**

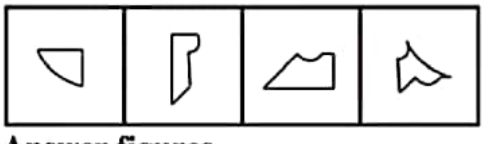


Answer figures

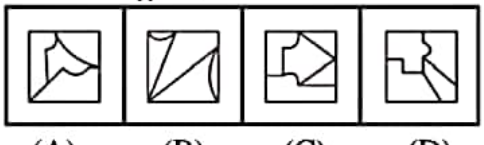


(A) (B) (C) (D)

7. **Question figures**



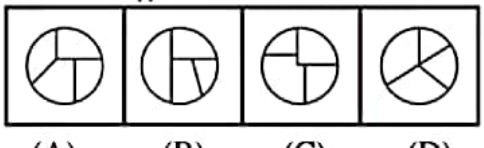
Answer figures



(A) (B) (C) (D)

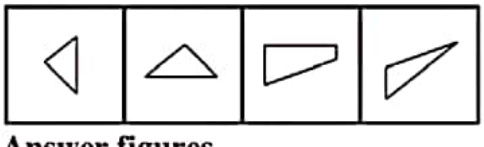
8. **Question figures**

Answer figures

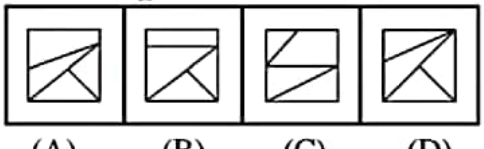


(A) (B) (C) (D)

9. **Question figures**

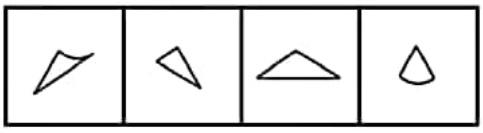


Answer figures

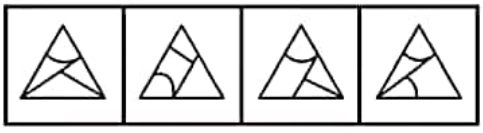


(A) (B) (C) (D)

10. **Question figures**



Answer figures



(A) (B) (C) (D)

Answers

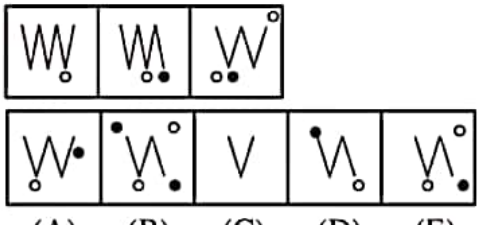
1. (A)	2. (A)	3. (D)	4. (A)	5. (A)
6. (D)	7. (A)	8. (A)	9. (A)	10. (A)

To Find Out the Fourth Figure

In this type of questions there are two sets of figures. One set is called 'Problem Figures' while the other one is 'Answer Figures'. Problem Figures are three in number and the answer figures are five in number. They are indicated by (A), (B), (C), (D) and (E). The three problem figures make a series. This means they change from left to right in a specific order. The question is if they change in the same order what should be the fourth figure. The candidates have to find out which one of the answer figures provides the answer.

The following example will explain the idea clearly.

Example—Which one of the numbered figures comes in the fourth place in the following problem figures ?



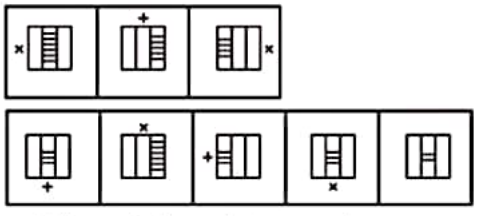
(A) (B) (C) (D) (E)

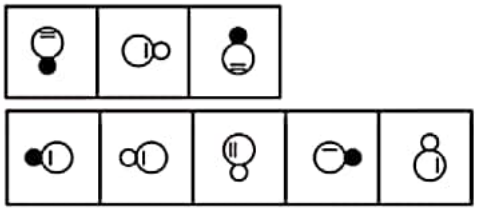
Answer with Explanation—(B) If we see carefully, we find that one line from right of the figures decreases in the subsequent figure. Besides a small black and white circle increases alternately. In the third figure there are four lines and two white and one black small circles. Hence in the fourth figure there should be three lines as well as two white and two black circles. But such figure is shown in fig. (B) of the answer figures. Hence the correct answer is (B).

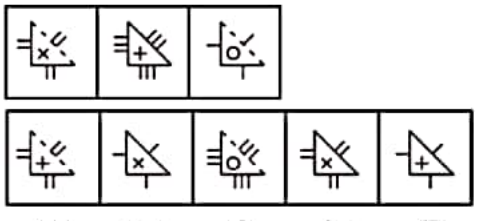
Scanned by CamScanner

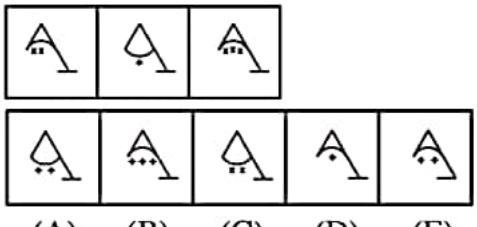
Exercise

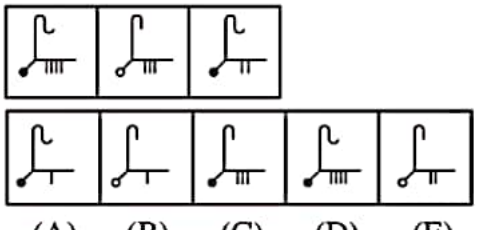
Directions—In each of the following questions there are three problem figures (I), (II) and (III) which are changing in a specific order. Find out which one of the five answer figures (A), (B), (C), (D) and (E) would occupy the next place.

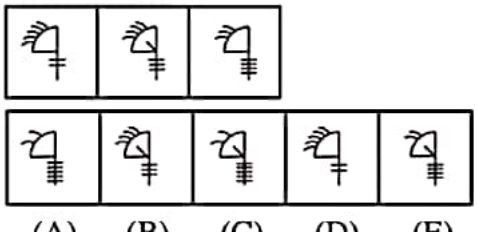
1.

(A) (B) (C) (D) (E)

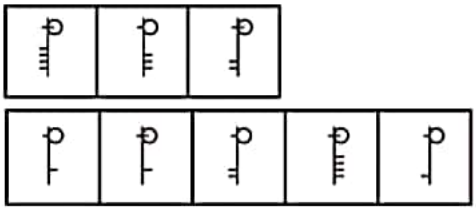
2.

(A) (B) (C) (D) (E)

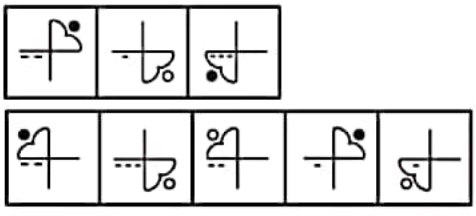
3.

(A) (B) (C) (D) (E)

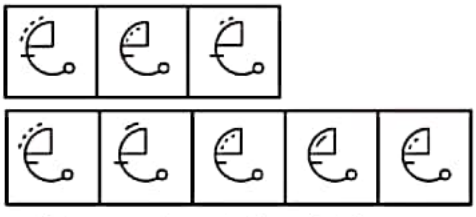
4.

(A) (B) (C) (D) (E)

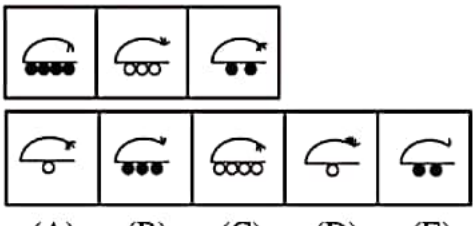
5.

(A) (B) (C) (D) (E)

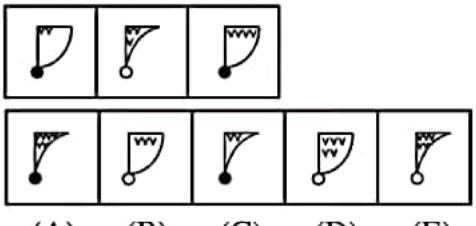
6.

(A) (B) (C) (D) (E)

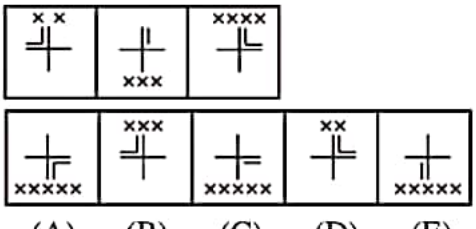
7.

(A) (B) (C) (D) (E)

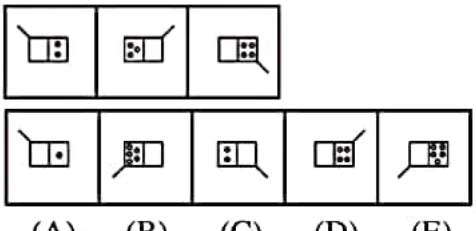
8.

(A) (B) (C) (D) (E)

9.

(A) (B) (C) (D) (E)

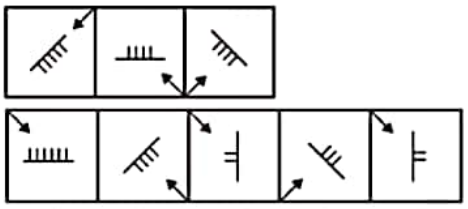
10.

(A) (B) (C) (D) (E)

11.

(A) (B) (C) (D) (E)

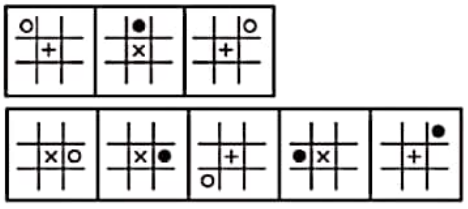
12.

(A) (B) (C) (D) (E)

13.

(A) (B) (C) (D) (E)

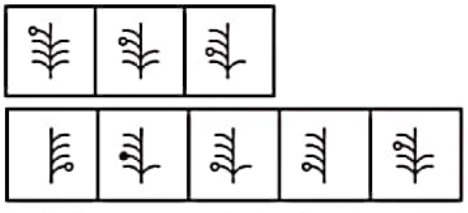
Scanned by CamScanner

14. 

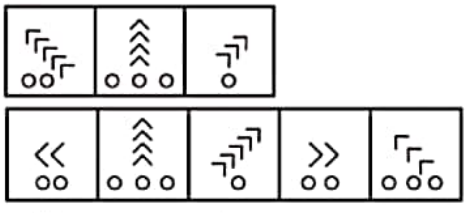
(A) (B) (C) (D) (E)

15. 

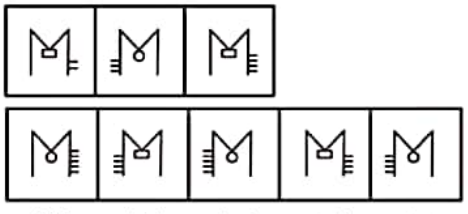
(A) (B) (C) (D) (E)

16. 

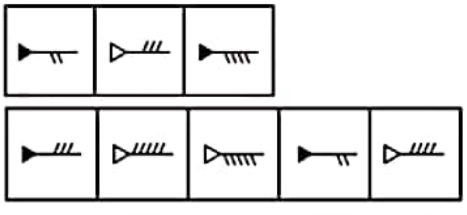
(A) (B) (C) (D) (E)

17. 

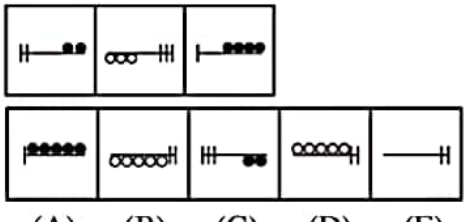
(A) (B) (C) (D) (E)

18. 

(A) (B) (C) (D) (E)

19. 

(A) (B) (C) (D) (E)

20. 

(A) (B) (C) (D) (E)

Answers with Explanation

1. (A) In each figure a square is divided into three parts and small lines within a part are shifting form left to right and from right to left alternately. The small lines are reducing also in number by one. Besides, the cross or plus sign moves one arm ahead in the clockwise direction.

2. (B) A small circle is rotating outside of the large circle in anticlockwise order and is changing from black to white and vice versa in each subseuqent figure. Fig. (I) has two lines while fig. (II) has one line and so on. Besides, the lines are changing their positions from horizontal to vertical and so on.

3. (D) On each side of the triangle there are two dashes in fig. (I) and three dashes in fig. (II), but again one dash in fig. (III) so there should be two dashes in fig. (IV). Since the longest side of the triangle is dotted in fig. (I) and (III) but continuous in fig. (II). Hence in fig. (IV) the longest side should be continuous. In fig. (I) inside is a cross sign in fig. (II) a plus sign and in fig. (III) there is a circle. Hence in fig. (IV) but continuous in fig. (II). Hence in fig. (IV) the longest side should be continuous. In fig. (I) inside is a cross sign in fig. (II) a plus sign and in fig. (III) there is a circle. Hence in fig. (IV) there should be a cross sign.

4. (A) The arc is concave in fig. (I) but convex in fig. (II) and so on. Fig. (I) has cross signs but fig. (II) has plus sign and so on. The signs are two in fig. (I), one in fig. (II) and three in fig. (III). there is a dash in the lower part of each figure, but it is on both sides in fig. (I) and (III) and one side in fig. (II).

5. (B) Vertical dashes are reducing by one in each subsequent figure. In other respects fig. (I) and (III) are same. So, fig. (IV) would be like as fig. (II).

6. (C) There are five lines outside the arc in fig. (I), one line is reduced in each subsequent figure. In fig. (I) there is no line inside the arc but one line in fig. (II) and so on. In the lower part there are two lines and one more line is added in each subsequent figure.

7. (A) There is one dash on the upper part and four dashes on the lower part. The dash on the

Scanned by CamScanner

upper part is crossing the line in fig. (I) while on the left side only in fig. (II) and so on. The dashes are changing their side and reducing by one in subsequent figure.

8. (C) A small circle and arcs are rotating clockwise in each subsequent figure. The circle is black in fig. (I) but white in (II) and so on. The dashes below the line are two in fig. (I) one in (II) but three in (III).

9. (D) The number of small dashes is reducing by one in each subsequent figure. Besides, the dashes are changing their position from outside to inside and vice versa.

10. (D) The circles below the line are reducing by one and changing from black to white and vice versa in each subsequent figure. The small arcs on the upper part are increasing by one and changing from upside to downside and vice versa in each subsequent figure.

11. (E) The small circle is changing from black to white and vice versa. The arc is changing from convex to concave and vice versa. The small signs are increasing by one in each subsequent figure.

12. (C) The crossmarks are increasing by one changing their position from upside to down-side and vice versa. Besides, one right angle change to a vertical line and vice—versa in each subsequent figure. The right angle and vertical line are also rotating in clockwise order in every alternate figure.

13. (B) The number of circles is increasing by one and the circles are shifting from right to left of the rectangle and vice versa in each subsequent figure. Besides, a dash is rotating outside in clockwise order.

14. (E) The teeth in comb-line figure are reducing by one and are rotating clockwise in each figure. An arrow is rotating in clockwise order in the corner of each figure.

15. (B) A small circle is moving in clockwise and changing from white to black and vice versa in each subsequent figure. In the centre plus sign is changing to cross sign and vice versa.

16. (D) On the right side one leaf is reducing in each subsequent figure. Besides, a small circle is going down.

17. (D) The series of signs is rotating at angle of 45° in the clockwise order and one sign is reducing in each subsequent figure. Besides, the number of circle is two in fig. (I) three in fig. (II) and one in fig. (III).

18. (C) The dashes are increasing by one changing their positions from right to left and vice versa. Besides, in the central part a rectangle is changing to a circle and vice versa.

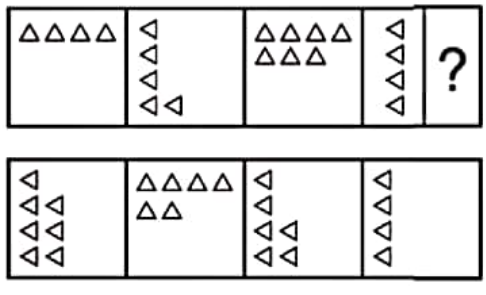
19. (B) The triangular part is changing from black to white and vice versa. The dashes, changing their position from down to above and vice versa, are increasing by one in each subseuqent figure.

20. (B) The small circles are increasing by one changing from black to white and vice versa. The circles are also changing their positon from up to below and vice versa. Besides, the circles are also changing their position from right end to left end and vice versa. The dashes are changing their positions from left corner to right corner and vice versa, and are two in fig. (I), three in fig. (II) and one in fig. (III).

Exercise 2

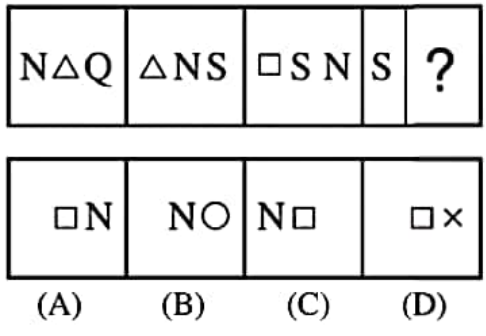
Directions—In each of the following questions, the given figures show some progressive change. Find on figure from amongst the alternatives which will complete the series.

1.



(A) (B) (C) (D)

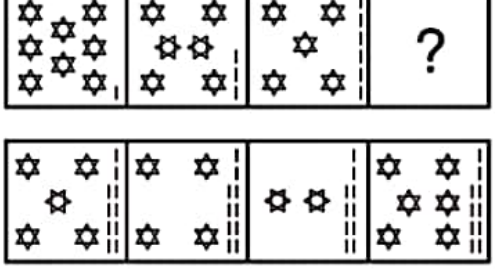
2.



(A) (B) (C) (D)

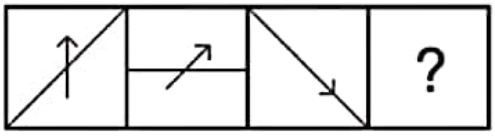
Scanned by CamScanner

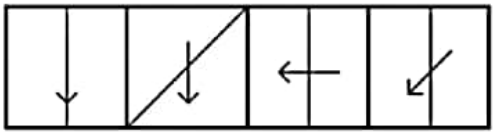
3.



(A) (B) (C) (D)

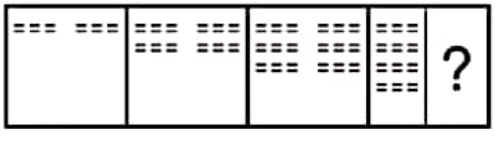
4.

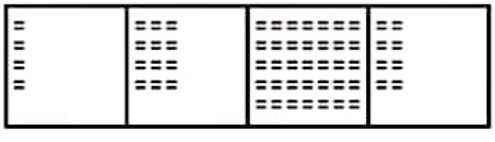




(A) (B) (C) (D)

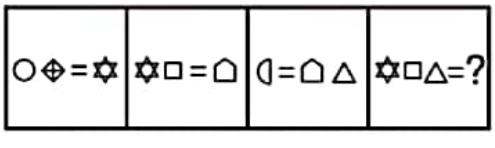
5.





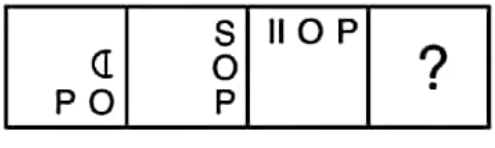
(A) (B) (C) (D)

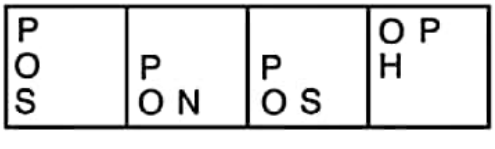
6.



(A) (B) (C) (D)

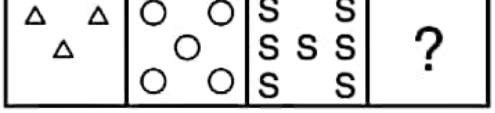
7.

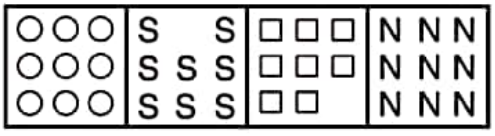




(A) (B) (C) (D)

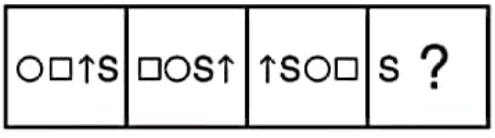
8.

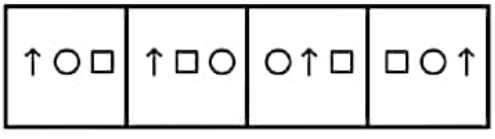




(A) (B) (C) (D)

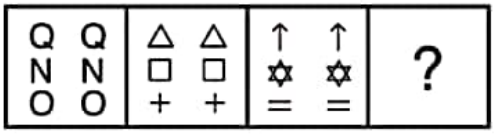
9.

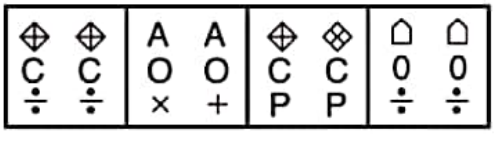




(A) (B) (C) (D)

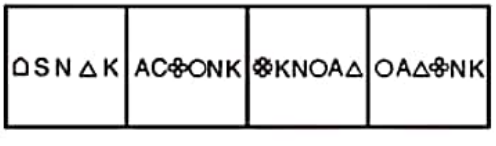
10.





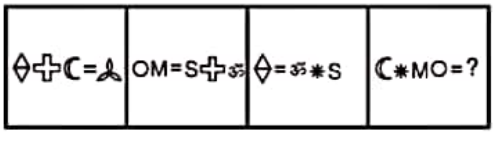
(A) (B) (C) (D)

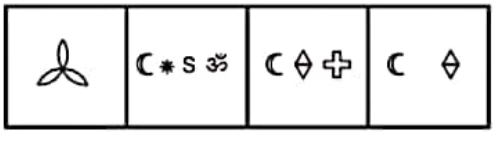
11.



(A) (B) (C) (D)

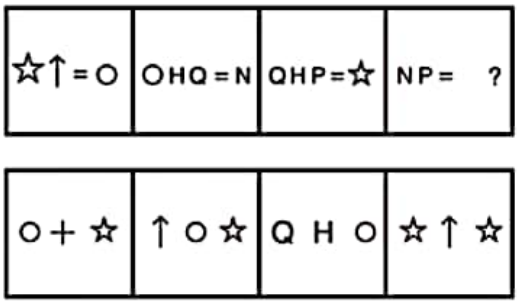
12.



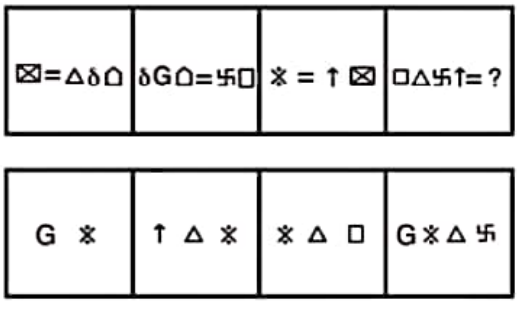


(A) (B) (C) (D)

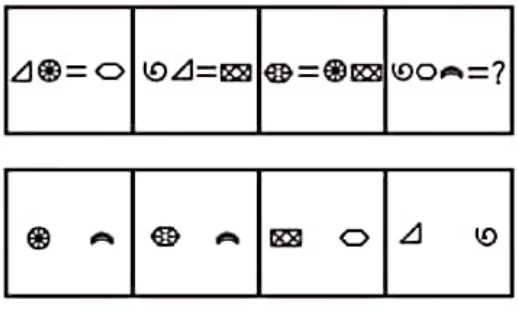
Scanned by CamScanner

13. 

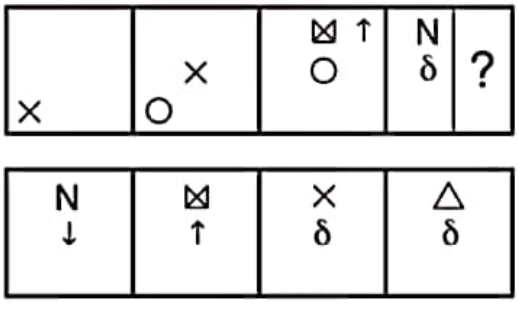
(A) (B) (C) (D)

14. 

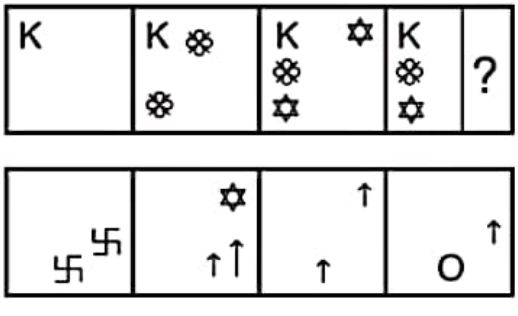
(A) (B) (C) (D)

15. 

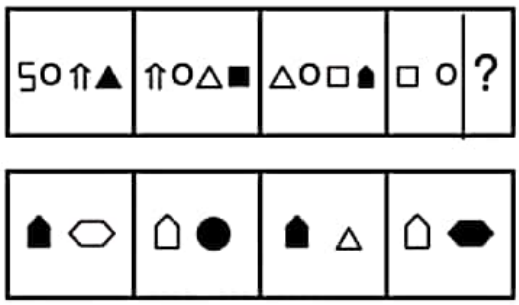
(A) (B) (C) (D)

16. 

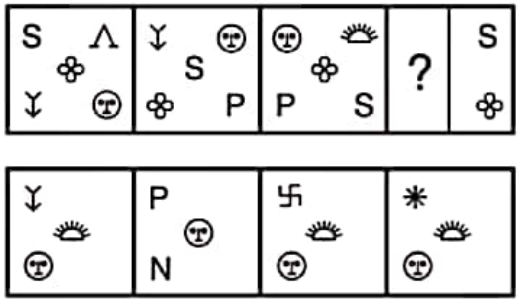
(A) (B) (C) (D)

17. 

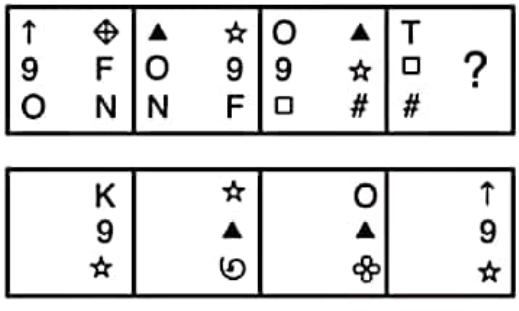
(A) (B) (C) (D)

18. 

(A) (B) (C) (D)

19. 

(A) (B) (C) (D)

20. 

(A) (B) (C) (D)

Answers with Explanation

1. (C) From first problem figure to second all the triangles shift one side anticlockwise after moving through 90° anticlockwise with the increase of one triangle. From second problem figure to third the triangles shift one side clockwise after moving through 90° clockwise with the increase of two triangles. Hence from third problem figure to fourth triangles will shift one side anticlockwise after moving through 90° anticlockwise with the increase of three triangles.

2. (D) From first problem figure to second both the left two designs interchange their positions and the design at the extreme right takes a new shape. From second problem figure to third both the right two designs interchange their positions while the design at the extreme left takes a new shape. Hence from third problem figure to fourth both the left two designs will interchange their positions and the design at the extreme right will take a new shape.

Scanned by CamScanner

3. (A) In each subsequent problem figure the number of stars is decreasing by two, one and zero respectively while the number of lines is increasing by two, three and four respectively.

4. (C) In each subsequent problem figure the line moves through 45° clockwise while the arrow moves through 45°, 90° and 135° clockwise.

5. (B) In each subsequent figure one row of designs increases.

6. (D) From first problem figure O and ⊕ = ✡, From second figure ✡ and □ = ⌂ and from third problem figure ⌂ and Δ = ◖ therefore ✡ + □ and Δ = ◖

7. (B) From problem figure first to second all the designs are shifting halfside anticlockwise and the foremost design takes a new shape. From second problem figure to third they are shifting one side anticlockwise and then the foremost designs takes a new shape. Hence from third problem figure to fourth, they will shift one and half side anticlockwise and then the foremost design will take a new shape.

8. (D) In each subsequent problem figure designs take new shape with the increase of two designs.

9. (B) In each subsequent problem figure the circle interchanges its position with next design right to it while the rest two designs also interchange positions.

10. (A) In each problem figure there are six designs which are in three rows and two columns. Only designs of first column are same as in second column but no where designs are repeated.

11. (C) From figure (3)
P ⌂ Δ C A = P ⌂ □ S
From figure (1)
⌂ S = ⊗ O A
From figure (2)
P □ = N Δ K
Therefore P □ ⌂ S = ⊗ O A N Δ K

12. (A) From figure (2) MO = S ✠ ⚥
Therefore ☾ ✱ M O = ☾ ✱ S ✠ ⚥
From figure (3) ⚥ ✱ S = ⟐
Therefore ☾ ✠ ⚥ ✱ S = ☾ ✠ ⟐ = ⅄

13. (D) From figure 2 N = O H Q
Therefore N P = O H Q P
From figure (3) Q H P = ☆
Therefore O Q H P = O ☆
From figure 1 O = ☆ ↑
Therefore O ☆ = ☆ ↑ ☆

14. (A) From figure 2 卐 □ = δ G ⌂
Therefore Δ ↑ □ 卐 = Δ ↑ δ G ⌂
From figure 1 Δ δ ⌂ = ⊠
From figure 3 ↑ ⊠ = ※
Therefore ↑ G ⊠ = ※ G

15. (B) From figure 1 ⬭ = ◿ ⊛
From figure 2 ⟲ ◿ = ⊠
From figure 3 ⊛ ⊠ = ⊕
Therefore ⟲ ⬭ ⌓ = ⟲ ⌓ ◿ ⊛
Therefore ⟲ ⌓ ◿ ⊛ = ⊠ ⌓ ⊛
Therefore ⌓ ⊛ ⊠ = ⊕ ⌓

16. (B) In each consequent problem figure each design is shifting half side in a certain order and one design is increasing forward and backward respectively but the design which repeats two times, takes a new shape next time.

17. (A) From problem figure first to second, same designs are formed at half side distance to left and right side. From problem figure second to third the design to the right of the main design disappears and two more designs of same appearance appear at one side distance to left and right side. The same order is repeated.

18. (D) In each consequent problem figure all the designs shift one place to left and the design at extreme left shifts to extreme right in new shape in which the number of sides is one more than the number of sides of the design at the extreme right in the previous figure. Then it becomes black. Besides the design at the extreme left in the previous figure becomes white from black after shifting to left while the remaining two designs interchange their positions.

19. (C) In each consequent problem figure the circle shifts one side anticlockwise and the designs which is replaced by circle, shifts to the place of circle and after this it takes a new shape. Each of the remaining three designs takes the place of its next design clockwise.

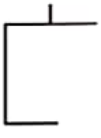
Scanned by CamScanner

20. (A) From problem fig. (1) to (2) each of the lower four designs takes the place of its next design clockwise while each of the upper two designs takes a new shape at its own place. From problem fig. (2) to (3) each of the upper four designs takes place of its next design clockwise while each of the lower two designs takes a new shape at its own place. The same order is repeated.

To Find the Concealed Figure

This test is to asses how quickly can a candidate recognize a figure that is hidden among other lines. In each question there is a model and four pattern given below it from which the candidate has to look for the model. The number of taken pattern will be answer. The model must always be reproduced in the same position, not on its side or upside down.

Illustration—Write the number of the figure in which the top figure is concealed.



(A) (B) (C) (D)

Answer—If from the first answer figure all the three inclined lines are removed, what is left is exactly the top figure.

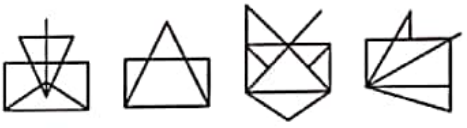
Exercise

Directions—In each of the question there is a top figure followed by four letter figures. Write the letter of figure out of four letter figures in which the top figure is concealed.

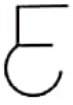
1.

(A) (B) (C) (D)

2.



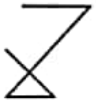
(A) (B) (C) (D)

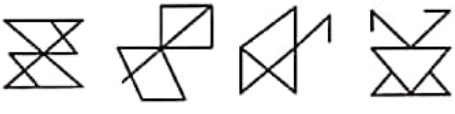
3. 

(A) (B) (C) (D)

4.

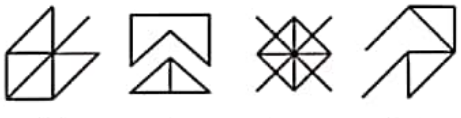
(A) (B) (C) (D)

5. 



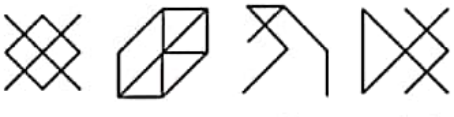
(A) (B) (C) (D)

6.



(A) (B) (C) (D)

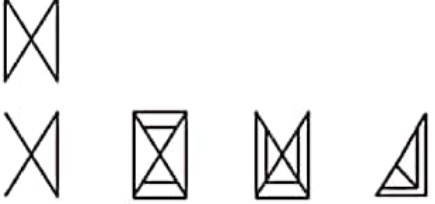
7.



(A) (B) (C) (D)

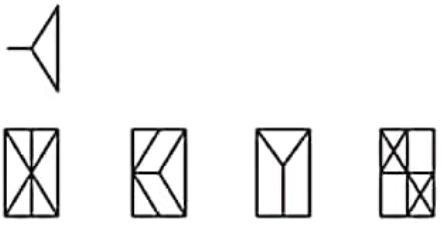
Scanned by CamScanner

8.



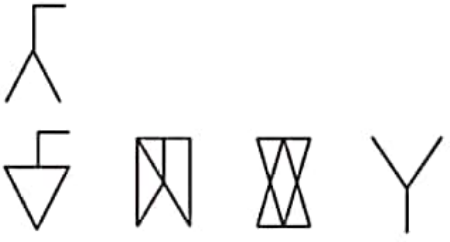
(A) (B) (C) (D)

9.



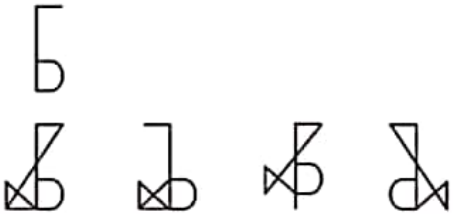
(A) (B) (C) (D)

10.



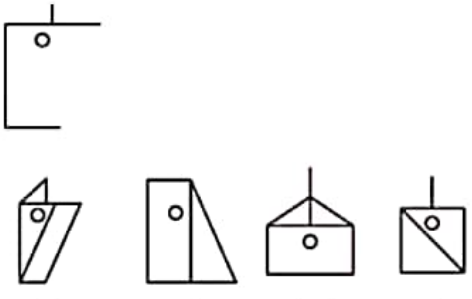
(A) (B) (C) (D)

11.



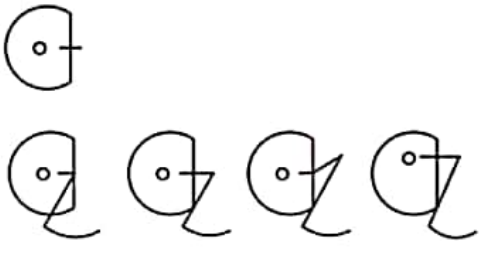
(A) (B) (C) (D)

12.



(A) (B) (C) (D)

13.

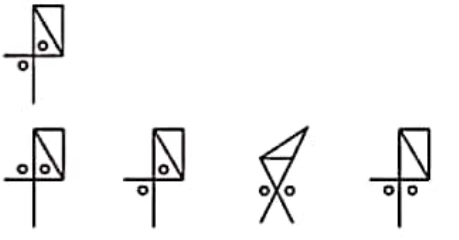


(A) (B) (C) (D)

14.

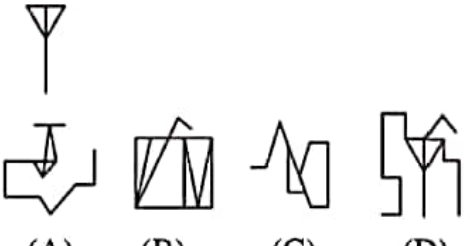
(A) (B) (C) (D)

15.



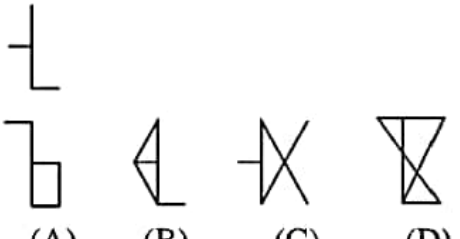
(A) (B) (C) (D)

16.



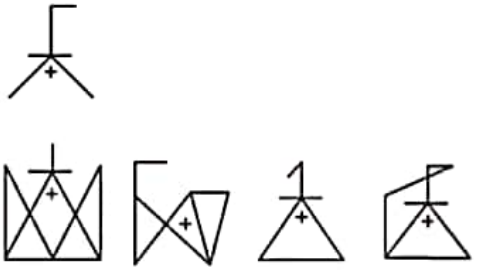
(A) (B) (C) (D)

17.



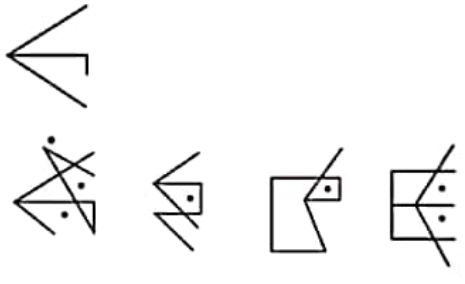
(A) (B) (C) (D)

18.



(A) (B) (C) (D)

19.



(A) (B) (C) (D)

Scanned by CamScanner

20.

(A) (B) (C) (D)

Answers with Explanation

1. (D) If from the fourth answer figure horizontal line from the bottom, vertical line from the left side and upper inclined line are removed, what is left is exactly the top figure.
2. (C) If from the third answer figure, two inclined lines are removed from the central part, what is left, is exactly the top figure.
3. (C) If the sides of the pentagon are removed from the third answer figure what is left, is exactly the top figure.
4. (B) The central portion of the second answer figure with top and base lines is the figure.
5. (A) If from the first answer figure parallelogram portions are removed, the top figure comes out.
6. (C) The top is concealed among the sides and diagonal lines of square in the third answer figure.
7. (A) If from the first answer figure two sides of the square and one perpendicular line are taken off the top figure comes out.
8. (B) If from the answer figure (B), all the horizontal lines from the top and the bottom are removed, what is left, is exactly the top figure.
9. (B) If from the answer fig. (B), three sides of the rectangle and the two inclined line from the left side are removed, the top figure comes out.
10. (B) If from the answer fig. (B), two outer vertical lines, horizontal lines from left and right side and an inclined line from left side are removed, the top figure comes out.
11. (A) The top figure is concealed in right part of the first answer figure.
12. (A) If from the first answer figure, all the inclined lines are removed, the top figure comes out.
13. (B) If lower right part of the answer fig. (A) is removed, we get the top figure.
14. (C) If outer lines of the answer fig. (C) are removed, we get the top figure.
15. (B) The answer fig. (B) is exactly like the top figure.
16. (D) In the central part of the answer fig. (B), top figure is seen.
17. (B) The top figure is obtained by removing the two lines of the left of the answer fig. (B).
18. (D) If two lines of left part and bottom line are removed from the answer fig. (D), we get the top figure.
19. (B) The top figure is obtained by removing the lower part of the answer figure (B).
20. (B) If the triangle from the answer fig. (B) is removed the top figure comes out.

Analogy Test

In this type of test three words followed by four possible answers are given. There is some relationship between the two first objects. The same relationship exists between the third object and one of the answers. The candidate has to find the required word from the given answers.

Illustration—Man is to **walk** as **fish** is to ...

(A) Swim (B) Eat
(C) Live (D) Run

Answer with Explanation—(A) In order to cover a distance Man has to walk in the same way in order to cover a distance a fish has to swim. Hence, the correct answer is (A).

Exercise 1

Directions—In the following questions, which one of the answer will fill the blank space so that the relation between the first two objects may be the same as that between third and fourth ?

1. Train : Bogies : : Forest : ?
   (A) Animal (B) Tree
   (C) Fruit (D) Garden
2. Carpenter : Wood : : Tailor : ?
   (A) Cloth (B) Sewing
   (C) Machine (D) Needle

Scanned by CamScanner

3. Child : Mother : : Mars : ?
(A) Earth (B) Daughter
(C) Sister (D) Sun

4. Light : Heavy : : Glad : ?
(A) Cheerful (B) Joy
(C) Gloomy (D) Anger

5. Drama : Director : : Team : ?
(A) Spectator (B) Captain
(C) Player (D) Playground

6. Fire : Hot : : Ice : ?
(A) Cold (B) Water
(C) Snow (D) Furnace

7. Procession : Route : : Earth : ?
(A) Space (B) Sun
(C) Orbit (D) Highway

8. Flower : Bouquet : : Player : ?
(A) Captain (B) Team
(C) Playground (D) Flock

9. Sapling : Tree : : Girl : ?
(A) Woman (B) Mother
(C) Wife (D) Friend

10. Mountain : Valley : : Light : ?
(A) Shadow (B) Night
(C) Darkness (D) Sun

11. Child : Mother : : Lamb : ?
(A) Milk (B) Sheep
(C) Rat (D) Hen

12. Man : Prison : : Animal : ?
(A) Forest (B) House
(C) Circus (D) Cage

13. Poet : Verse : : Woman : ?
(A) Ornament (B) Husband
(C) Son (D) Garment

14. Beginning : End : : Head : ?
(A) Hand (B) Ear
(C) Nose (D) Feet

15. Postoffice : Envelope : : Bank : ?
(A) Account (B) Money
(C) Cheque (D) Manager

16. Night : Day : : Friend : ?
(A) Boy (B) Brother
(C) Enemy (D) Class-mate

17. Man : Hand : : Elephant : ?
(A) Tail (B) Trunk
(C) Feet (D) Tusk

18. Father : Son : : Mother : ?
(A) Brother (B) Sister
(C) Nephew (D) Daughter

19. She goat : Milk : : Factory : ?
(A) Workers (B) Smoke
(C) Building (D) Production

20. Letter : Telegram : : Train : ?
(A) Horse (B) Car
(C) Aeroplane (D) Bus

21. Palace : Hut : : Elephant : ?
(A) Cow (B) Car
(C) Rat (D) Buffalo

22. Air : Bird : : Sea : ?
(A) Ship (B) Fish
(C) Boat (D) Salt

23. Today : Dayafter tomorrow : : June : ?
(A) July (B) March
(C) August (D) September

24. 108 : 27 : : 32 : ?
(A) 9 (B) 3159
(C) 318 (D) 8

25. Ear : Music : : Nose : ?
(A) Face (B) Breath
(C) Smell (D) Voice

26. ABC : ZYX : : CBA : ?
(A) BCA (B) XYZ
(C) YZX (D) ZXY

27. ACE : HIL : : MOQ : ?
(A) TUX (B) TVX
(C) XVT (D) SUW

28. NUMBER : UNBMRE : : GHOST : ?
(A) HOGST (B) HOGTS
(C) HGSOT (D) HGOST

29. 12 : 35 : : 16 : ?
(A) 32 (B) 63
(C) 49 (D) 45

30. 6 : 35 : : 11 : ?
(A) 120 (B) 121
(C) 115 (D) 124

Scanned by CamScanner

31. ? : bee : : fang : snake
    (A) honey (B) wax
    (C) sting (D) humming

32. ? : graceful : : vulgarity : elegance
    (A) comely (B) awkward
    (C) plain (D) asperity

Directions—For each of the following questions, there are two words and five alternative answers. In each of the alternative answers there are two words. The candidate has to find out the alternative whose two words have the same relation as in the two words given in beginning.

33. Resignation : Office : :
    (A) Competition : Game
    (B) Illness : Hospital
    (C) Abdication : Throne
    (D) Moisture : Rain

34. Bunch : Key : :
    (A) Hound : Pack
    (B) Team : Competition
    (C) Beehive : Bee
    (D) Bouquet : Flower

35. Profit : Loss : :
    (A) Success : Failure
    (B) Rupee : Paisa
    (C) Whole : Part
    (D) Multiplication : Addition

36. Sapling : Tree : :
    (A) Horse : Mare (B) Student : Teacher
    (C) Bud : Flower (D) Tree : Furniture

37. Supervisor : Worker : :
    (A) Junior : Senior (B) Superior : Inferior
    (C) Elder : Younger (D) Officer : Clerk

38. Malaria : Mosquito : :
    (A) Poison : Delhi
    (B) Rat : Plague
    (C) Epidemic : Bacteria
    (D) Cholera : Water

39. Paisa : Rupee : :
    (A) Kilogram : Quintal
    (B) Metre : Centimetre
    (C) Coin : Money
    (D) Weight : Ton

40. Poet : Verse : :
    (A) Prose : Novelist
    (B) Author : Book
    (C) Novel : Prose
    (D) Publication : Editor

Answer with Explanation

1. (B) As there are many bogies in a train, in the same way there are many trees in the forest.
2. (A) As a carpenter makes articles from wood, in the same way a tailor makes garments from cloth.
3. (D) As child is born from mother in the same way Mars was born from the Sun.
4. (C) As Heavy is opposite to Light in the same way Gloomy is opposite to Glad.
5. (B) As drama is directed by the director in the same way team is directed by the captain.
6. (A) As fire is hot in the same way ice is cold.
7. (C) As procession moves on its route, in the same way the earth moves on its orbit.
8. (B) As a bouquet is composed of several flowers in the same way a team is made of several players.
9. (A) As sapling grows as a tree in the same way a girl after grownup become a woman.
10. (C) As valley is opposite to mountain in the same way darkness is the opposite of light.
11. (B) As the mother is for the child so the sheep is for the lamb.
12. (D) As man is kept in prison for punishment so an animal is kept in cage.
13. (C) As verse is formed by the poet so son is born from woman.
14. (D) Beginning is opposite of end so head is opposite of feet.
15. (C) As envelope is obtained form a post office similarly cheque is obtained from bank.
16. (C) As night is opposite of day similrly friend is the opposite of enemy.
17. (B) As a man works with his hand so an elephant works with his trunk.
18. (D) As son is related to father so daughter is related to mother.

Scanned by CamScanner

factory produces production.

20. (C) As telegram is quicker than the letter similarly aeroplane is quicker than train.

21. (C) As hut is the shortest form of a palace similarly rat is the shortest form of an elephant.

22. (B) As bird flies in air similarly a fish swims in sea.

23. (C) As there is a difference of one day between dayafter tomorrow and today similarly there is a difference of one month between June and August.

24. (D) As 27 is one-fourth of 108 similarly 8 is the one-fourth of 32.

25. (C) As ear is used to receive music similarly nose is used to receive smell.

26. (B) CBA is the reverse of ABC, so ZYX is the reverse of XYZ.

27. (A) There is a gap of one letter between each two consecutive letters of ACE and MOQ but the first two letters of HIL are in sequence while two letters is missing between the second and third letters.

28. (C) First two letters of the first term are in reverse order in the second term and so are the next two letters.

29. (B) First term $= 6 \times 2$
Second term $= 6^2 - 1$
Third term $= 8 \times 2$
$\therefore$ Fourth term $= 8^2 - 1$

30. (A) Second term $=$ (First term)$^2 - 1$
$\therefore$ Fourth term $=$ (Third term)$^2 - 1$

31. (C) As 'Snake' attacks by 'Fang' similarly 'Bee' attacks by 'Sting'.

32. (B) As 'Vulgarity' is the opposite of 'Elegance', similarly 'Awkward' is the opposite of 'Graceful'.

33. (C) As for resignation, the office is to be left in the same manner when abdication is done, throne is to be left.

34. (D) As 'Bunch' is the collection of 'Keys', in the same way 'Bouquet' is the collection of 'Flowers'.

35. (A) As profit is antonym of loss, in the same way success is the antonym of failure.

way bud is the young flower.

37. (D) As supervisor supervise the worker in the same way officer supervise the clerk.

38. (D) As malaria is caused due to mosquito in the same way cholera is caused due to water.

39. (A) As 100 paise are equivalent to a rupee in the same way 100 kilograms are equivalent to a quintal.

40. (B) As 'Verse' is written by a 'Poet' in the same way 'Book' is written by an 'Author'.

Exercise 2

Directions—In each of the following questions two pairs are given. In each pair two words have some relation. Find out the word which will replace the question mark so that this pair may have the same relation as the other pairs have.

1. Fabric-Yarn, Paper-Pulp-White cement—
(A) Building (B) Floor
(C) Tile (D) White washing

2. Poet-Verse, Cook-Food, ?-Novel
(A) Editor (B) Author
(C) Novelist (D) Publisher

3. Mosquito-Malaria, Water-Cholera, Rat-?
(A) Plague (B) Snake
(C) Disease (D) Death

4. Team-Player, Bunch-key, ?-Flower
(A) Rose (B) Spring
(C) Bud (D) Bouquet

5. Artist-Art, Player-Game, Singer-?
(A) Guitar (B) Song
(C) Victory (D) Dance

6. Colombo - SriLanka, NewDelhi - India, Amman-?
(A) Kenya (B) Bhutan
(C) Portugal (D) Jordan

7. Head-Cap, Eye-Spectacles, Finger-?
(A) Thumb (B) Nail
(C) Thimble (D) Nail-Polish

8. High-Low, Cold-Hot, Far-?
(A) Distance (B) Near
(C) Fare (D) Next

Scanned by CamScanner

9. Car-Garage, Man-House, Horse-?
   (A) Stable (B) Shelter
   (C) Neigh (D) Forest
10. Sapling-Tree, Girl-Woman, ?-Flower
   (A) Bouquet (B) Tree
   (C) Bud (D) Spring
11. Carpenter-wood, Tailor-Cloth, Cobbler-?
   (A) Iron (B) Foot-wear
   (C) Gold (D) Flour
12. Paisa-Rupee, Cm-Metre, Kilogram-?
   (A) Metric tonne (B) Gram
   (C) Hectrogram (D) Quintal
13. Petrol-Aeroplane, Water-Fish, ?-Man
   (A) Knowledge (B) Cart
   (C) Air (D) Fire
14. Profit-loss, Addition-subtraction, Success-?
   (A) Laziness (B) Failure
   (C) Work (D) Labour
15. Hardwork - Success, Crime - Punishment, Exercise-?
   (A) Gymnasium (B) Wrestler
   (C) Sports (D) Health
16. Patient-Hospital, Criminal-Prison, Fish-?
   (A) Transparent (B) Beautiful
   (C) Aquarium (D) Tasty
17. Elephant-Trumpet, Dog-Bark, Sheep-?
   (A) Chirp (B) Bleat
   (C) Neigh (D) Roar
18. Cow-calf, Hen-chicken, Sheep-?
   (A) Lamb (B) Puppy
   (C) Cub (D) Brat
19. Cold-Chilly, Love-Affection, Botheration-?
   (A) Troublesome (B) Sacrity
   (C) Worry (D) Disease
20. Class-Students, Hour-Minutes, Sentence-?
   (A) Letter (B) Words
   (C) Book (D) Paragraph

Answers with Explanation

1. (C) In each pair of words, second is the raw material for the first.
2. (C) In each pair of words, first is the producer of the second.
3. (A) In each pair of words, first is the cause of the second.
4. (D) In each pair of words, first is the collective form of the second.
5. (B) In each pair of words, second is done by the first.
6. (D) In each pair of words, first is the capital of the second.
7. (C) In each pair of words, second is used on first.
8. (D) In each pair of words, both the words are opposite to each other.
9. (A) In each pair of words, second is the place where first is kept.
10. (C) In each pair of words, first is the young form of the second.
11. (B) In each pair of words second is used by the first.
12. (D) In each pair of words second is hundred times of the first.
13. (C) In each pair of words, first is necessary for the second.
14. (B) In each pair of words, both the words are opposite to each other.
15. (D) In each pair of words, first is the cause and the second is the result.
16. (C) In each pair of words, second is the place for the first.
17. (B) In each pair of words second is the cry of the first.
18. (A) In each pair of words second is the young one of the first.
19. (C) In each pair of words, both the words are similar in meaning.
20. (B) In each pair of words, second is the part of the first.

Number Analogy Test

To select the pair which resembles the given set of numbers—The questions asked from this chapter are based on the numbers which are

Scanned by CamScanner

of numbers in which all the numbers are related to each with certain rule. Four alternatives are given in which a set follows the particular rule as in the question part.

Memorable Points—To solve the questions easily, keep the following points in your mind always.

1. Numbers are based on addition, subtraction, multiplication and division.
2. The numbers are based on addition-subtraction, multiplication-subtraction, multiplication-addition, division-addition, division-subtraction etc.
3. Sometimes the numbers are squares or cubes of a particular number.
4. Sometimes you may find the complex form of above rules.
5. The number are based on the general difference also.

Type-1. The given (or question) set is (1, 8, 15)

(A) 3, 10, 16 (B) 12, 30, 48

(C) 4, 10, 17 (D) 19, 27, 34

Solution—The given set :

$$1 \xrightarrow{+7} 8 \xrightarrow{+7} 15$$

(Here is equal difference between the two succssive number)

Alternative (A)

$$3 \xrightarrow{+7} 10 \xrightarrow{+6} 16$$ not follows the above rule.

Alternative (B)

$$12 \xrightarrow{+18} 30 \xrightarrow{+18} 48$$ Here is equal difference like given set. Hence the alternative (B) is correct.

Type–2. The given set is (5, 12, 26)

(A) 11, 24, 50 (B) 13, 28, 56

(C) 32, 66, 32 (D) 7, 14, 30

Solution : The given set $5 \xrightarrow{\times 2+2} 12 \xrightarrow{\times 2+2} 26$ multiplying by 2, 2 is added to result.

$$11 \xrightarrow{\times 2+2} 24 \xrightarrow{\times 2+2} 50$$ Therefore, the set given in the alternative (A) resembles the given set.

Exercise

1. (5, 10, 25)
   (A) (6, 12, 24) (B) (21, 14, 7)
   (C) (12, 24, 60) (D) (6, 12, 18)
2. (5, 7, 17)
   (A) (6, 7, 16) (B) (20, 22, 47)
   (C) (12, 25, 51) (D) (16, 35, 72)
3. (12, 144, 120)
   (A) (9, 81, 63) (B) (8, 64, 72)
   (C) (7, 49, 56) (D) (5, 25, 50)
4. (11, 24, 50)
   (A) (7, 15, 31) (B) (18, 37, 76)
   (C) (21, 44, 90) (D) (13, 28, 57)
5. (15, 7, 3)
   (A) (17, 8, 4) (B) (4, 2, 1)
   (C) (19, 9, 4) (D) (25, 12, 6)
6. (2, 8, 64)
   (A) (4, 64, 624) (B) (3, 27, 729)
   (C) (5, 125, 1325) (D) (6, 36, 216)
7. 4, 15, 48
   (A) (16, 51, 156) (B) (10, 32, 99)
   (C) (7, 16, 35) (D) (8, 18, 38)
8. (21, 63, 12)
   (A) (15, 60, 30) (B) (16, 64, 8)
   (C) (8, 64, 32) (D) (15, 45, 51)
9. (4, 2, 1)
   (A) (16, 8, 9) (B) (15, 7, 3)
   (C) (9, 4, 2) (D) (24, 12, 6)
10. (3, 4, 10)
    (A) (6, 7, 16) (B) (20, 9, 8)
    (C) (14, 6, 5) (D) (7, 16, 51)

Answers with Explanation

1. (C) From given set (5, 10, 25)

$$5 \times 2 = 10$$

And $$5 \times 5 = 25$$

Alternative (C) follows the same rule.

Scanned by CamScanner

2. (B) In the given set (5, 7, 17)

$$5 \times 1 + 2 = 7$$

And $$7 \times 2 + 3 = 17$$

3. (D) In (12, 149, 120)

$$12 \times 12 = 144$$

And $$12 \times 10 = 120$$

The same rule is applied in alternative (D)

4. (C) In (11, 24, 50),

$$11 \times 2 + 2 = 24$$

And $$24 \times 2 + 2 = 50$$

The same rule is used in (C).

5. (C) In the given set (15, 7, 3)

$$(15 - 1) \div 2 = 7$$

And $$(7 - 1) \div 2 = 3$$

Alternative (C) follows the same rule.

6. (B) In the given set (2, 8, 64)

$$(2)^3 = 8$$

And $$(2)^6 = 64$$

The same rule is applied in alternative (B).

7. (A) In the given set (4, 15, 48)

$$4 \times 3 + 3 = 15$$

And $$15 \times 3 + 3 = 48$$

The same is applied in the alternative (A).

8. (D) In the given set (21, 63, 12)

$$21 \times 3 = 63$$

And writing the given number in reverse order gives 12.

The same rule is applied in the alternative (D).

9. (D) In the given set (4, 2, 1)

$$(4 \div 2) = 2$$

And $$(2 \div 2) = 1$$

The alternative (D) follows the same rule.

10. (A) In the given set (3, 4, 10), the numbers are placed as—

$$3 \times 1 + 1 = 4$$

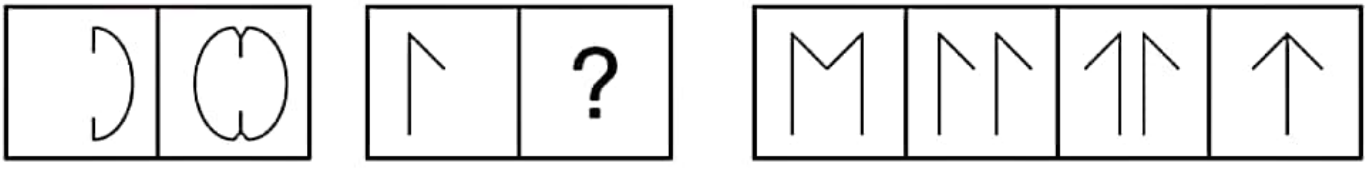
And $$4 \times 2 + 2 = 10$$

The same rule appears in alternative (A). Hence, the alternative (A) is correct.

Exercise 3

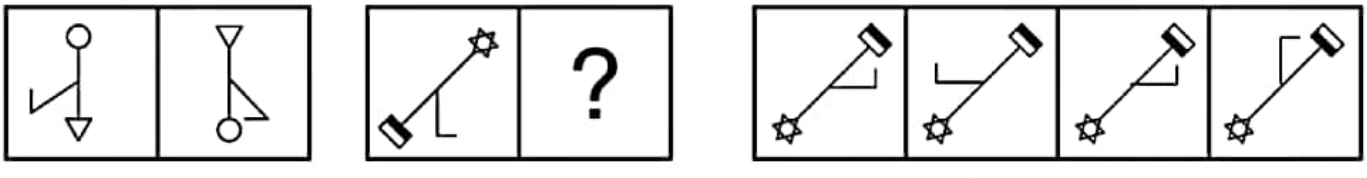
Directions—Each of the following questions is based on figural analogy, there is a definite relationship between the first and second figures on the left. Find the figure which is related in the same way to the third figure.

1.



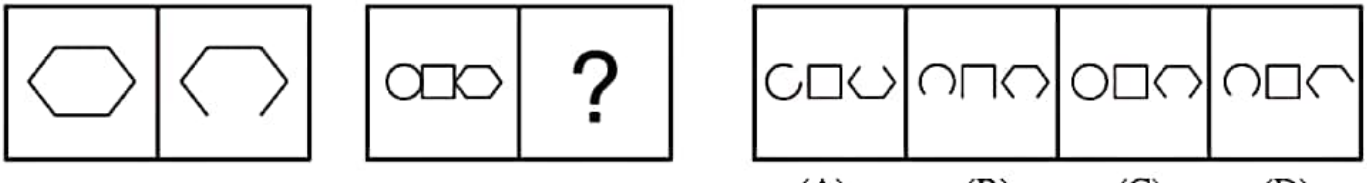
(A) (B) (C) (D)

2.



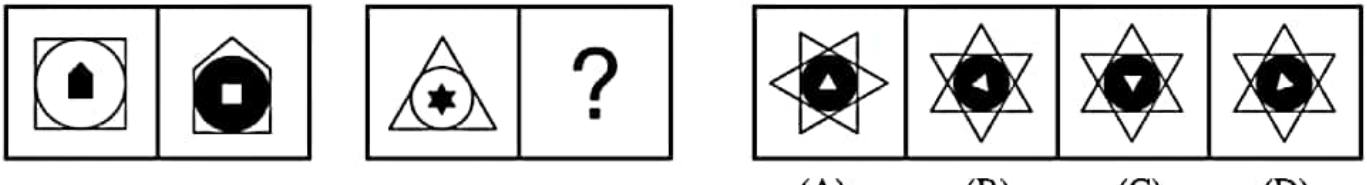
(A) (B) (C) (D)

3.



(A) (B) (C) (D)

4.



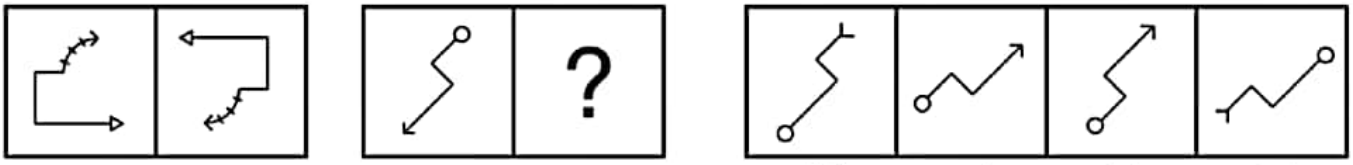
(A) (B) (C) (D)

Scanned by CamScanner

5.

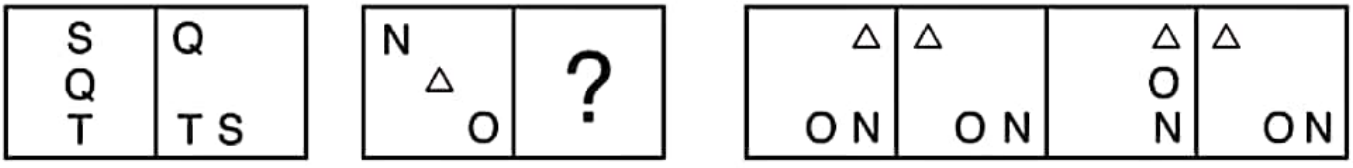
(A) (B) (C) (D)

6.



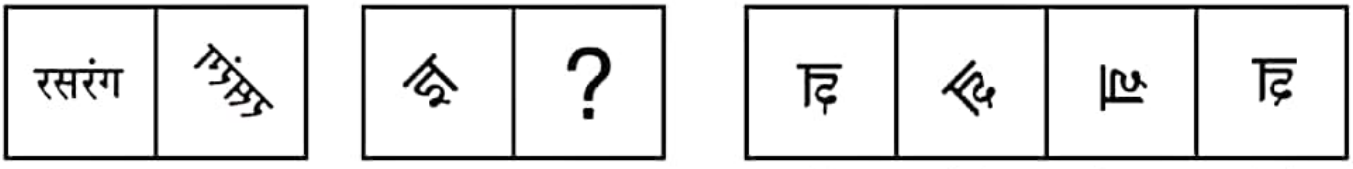
(A) (B) (C) (D)

7.



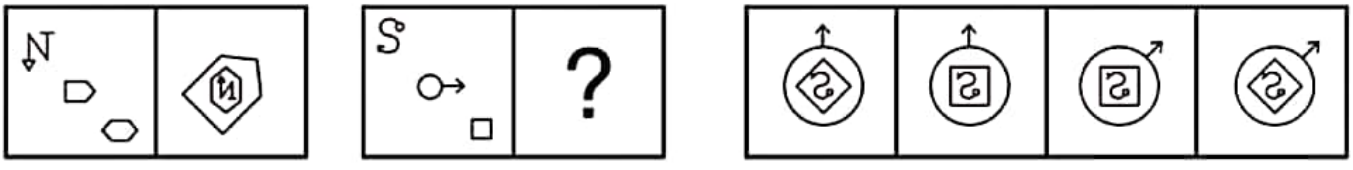
(A) (B) (C) (D)

8.



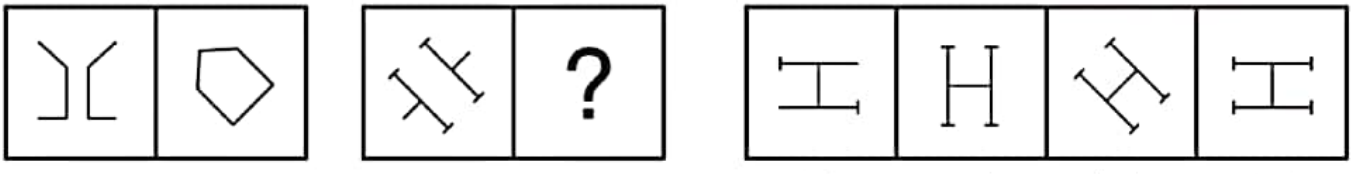
(A) (B) (C) (D)

9.



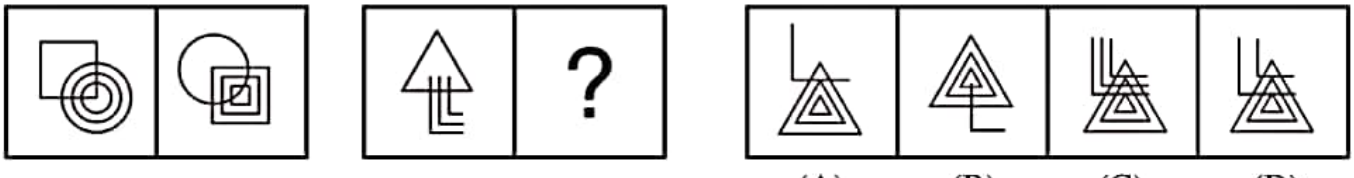
(A) (B) (C) (D)

10.



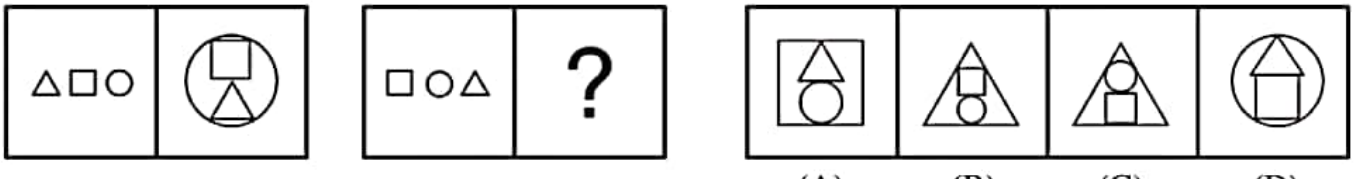
(A) (B) (C) (D)

11.



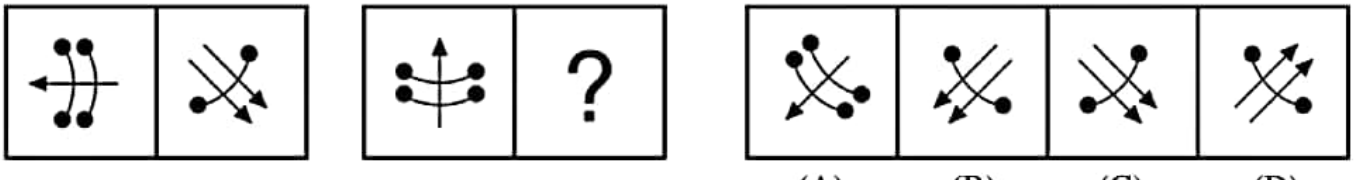
(A) (B) (C) (D)

12.



(A) (B) (C) (D)

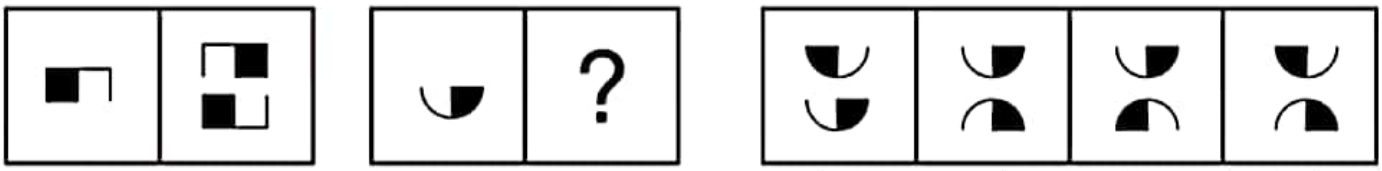
13.



(A) (B) (C) (D)

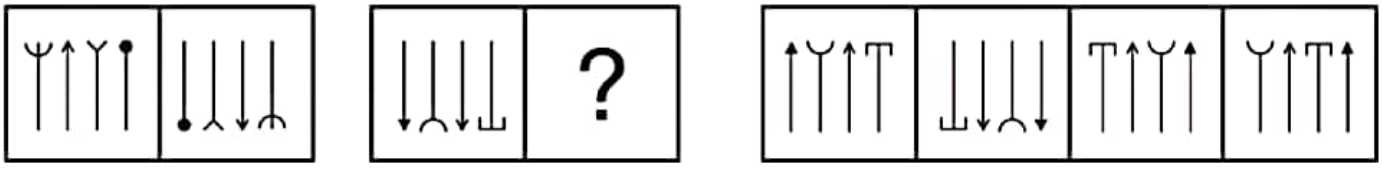
Scanned by CamScanner

14.



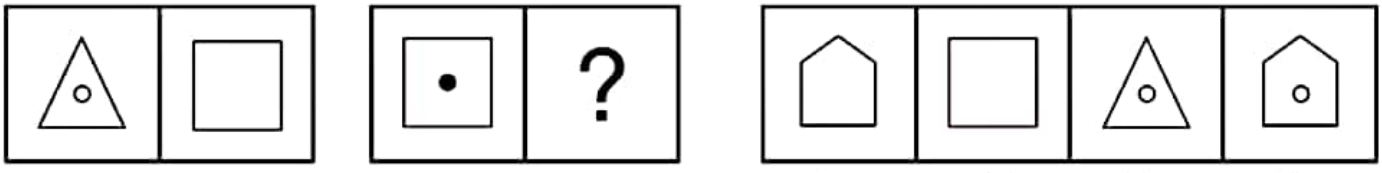
(A) (B) (C) (D)

15.



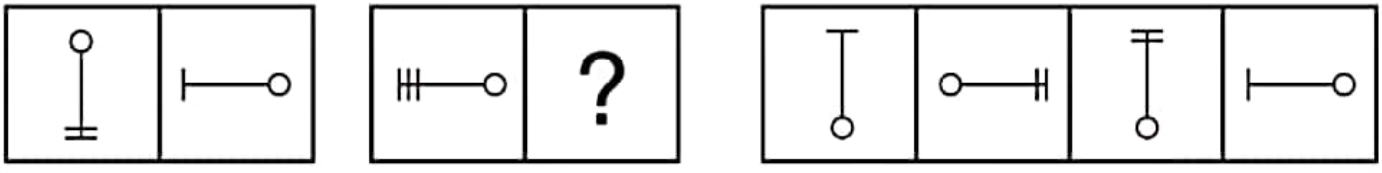
(A) (B) (C) (D)

16.



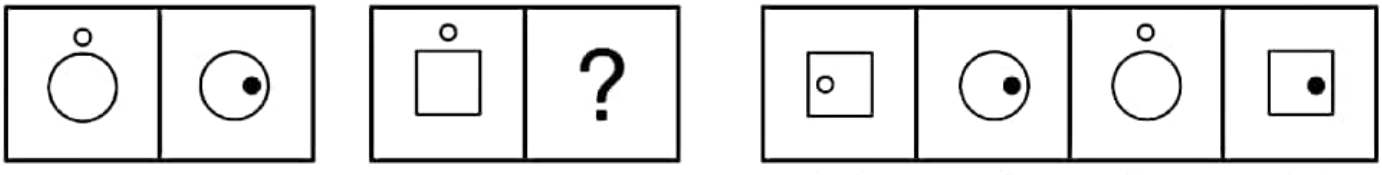
(A) (B) (C) (D)

17.



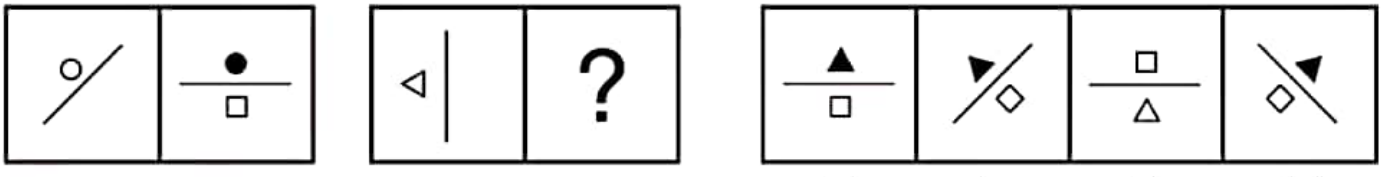
(A) (B) (C) (D)

18.



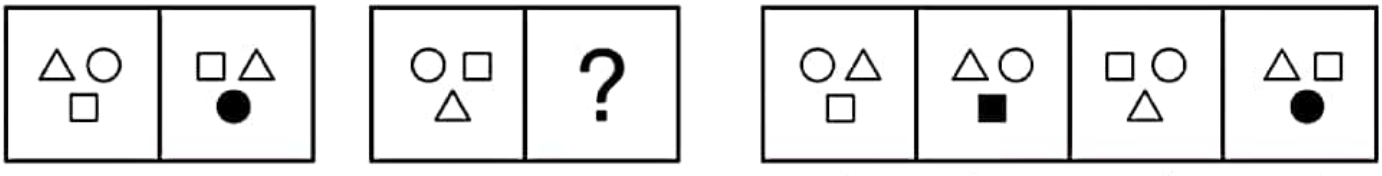
(A) (B) (C) (D)

19.



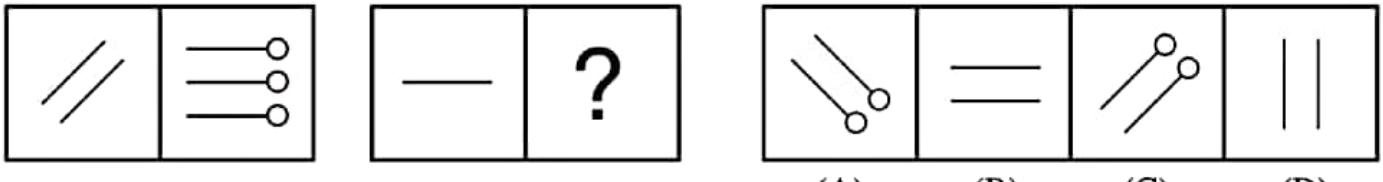
(A) (B) (C) (D)

20.



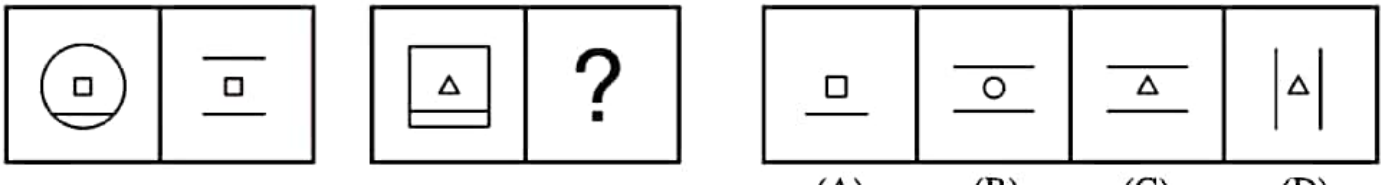
(A) (B) (C) (D)

21.



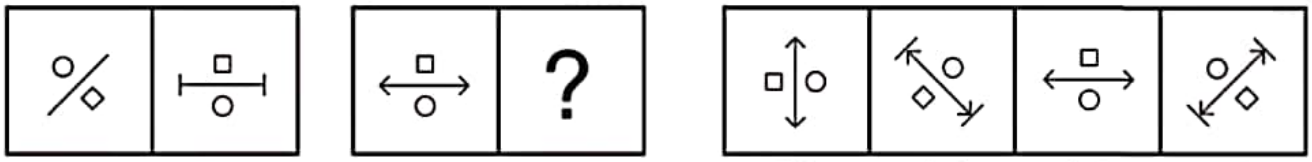
(A) (B) (C) (D)

22.

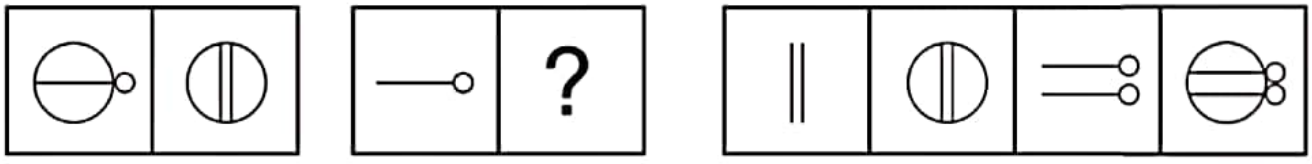


(A) (B) (C) (D)

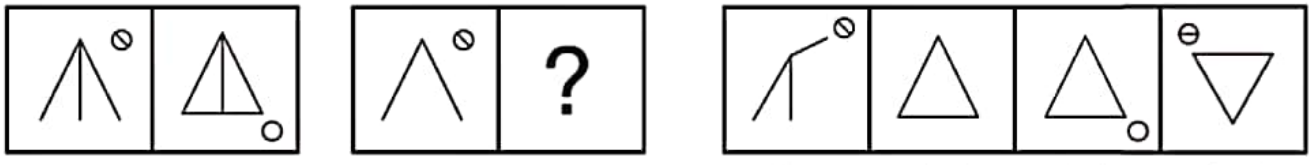
Scanned by CamScanner

23. 

(A) (B) (C) (D)

24. 

(A) (B) (C) (D)

25. 

(A) (B) (C) (D)

Answers with Explanation

1. (D) If in the design of first problem figure, the mirror image of this design is added, the design of second problem figure is obtained.
2. (A) The upper and lower designs of the first problem figure are interchanged in second problem figure. Beside the design attached to the left of the vertical line moves through 90° anticlockwise.
3. (B) From first problem figure to second problem figure the lower part of the design disappears.
4. (D) From first problem figure to second the outer most and inner most designs interchange their positions. Besides, the space between the circle and the inner most design is blackened from white while the space in the innermost design is whitened from black.
5. (C) From first problem figure to second, both the designs separate from each other. The left design shifts to left while the right design shifts to right.
6. (A) From first problem figure to second the designs at the ends of the main design are reversed at their own positions and the rest design moves through 180°.
7. (B) From first problem figure to second the upper design shifts two sides and the middle design shifts to the left upper corner while the lower design shifts half side clockwise.
8. (A) From first problem figue to second the design moves through 45° clockwise and then reverses.
9. (C) From first problem figure to second the middle design becomes outermost design after moving through 45° anticlockwise while the lower design shifts to second position after moving through 90° and the upper design shifts to the innermost position after reversing on horizontal axis but after this the designs at its ends also reverse.
10. (D) From first problem figure to second both the designs are joined after reversing and then the whole design moves through 45° anticlockwise.
11. (A) From problem figure (1) to (2) square and circles interchange their positions.
12. (C) From problem figure (1) to (2) the design at the right is enlarged while the central and the left designs come above and below respectively inside it.
13. (B) From problem fig. (1) to (2) the arrow is doubled after moving through 135° anticlockwise while the other designs are reduced to one after moving through 45° clockwise.
14. (D) From problem fig. (1) to (2) the design reverses about vertical axis and exactly the same but opposite one is more added.
15. (C) From problem fig. (1) to (2) the whole design moves through 180°.

Scanned by CamScanner

16. (A) From problem fig. (1) to (2) one side in the design is increased while the inner circle disappears and light lines of the design are converted into dark lines.

17. (C) From problem fig. (1) to (2) the design moves through 90° clockwise and one dash disappears.

18. (D) From problem fig. (1) to (2) the small circle shifts from outside to inside the large circle after shifing one side clockwise and is blackened from white.

19. (B) From problem fig. (1) to (2) the whole design moves through 45° clockwise and the circle is blackend from white while one square is added on the other side of the circle.

20. (B) From problem fig. (1) to (2) each of the three designs shifts to its next position clockwise and then the lower design is blackened.

21. (A) From problem fig. (1) to (2) the lines rotate through 45° clockwise and one line is increased while the lines have circles at the ends on one side.

22. (C) From problem fig. (1) to (2) the circle disappears but one line is added above the rectangle.

23. (B) From problem fig. (1) to (2) the whole design moves through 135° anticlockwise with the addition of dashes at the ends of line.

24. (A) From problem fig. (1) to (2) the whole design moves through 90° with the addition of one vertical line while the outer design disappears.

25. (C) From problem fig. (1) to (2) one base line is added while the circle shifts one side clockwise and the inner line of the circle disappears.

To Find a Missing Term in a Series

In this type of test some numbers or alphabetical letters are given. They all form a series and change in a certain order. Series has one number or letter missing. The candidates are required to observe that specific order in which the numbers or letters go on changing and find out what number or alphabet from the given probable answers, would sent for the blank space if they continue to change in the same order.

Illustration :

1. Which one of the alternative numbers would correctly fill the blank space in the following series ?

   1, 5, 10, 16, 23, 31, ...

   (A) 38 (B) 40
   (C) 39 (D) 45

Answer with Explanation—(B) The difference between the first two terms is 4 and in subsequent terms it goes on increasing by 1. As the difference between 23 and 31 is 8. So, the difference between 31 and the missing term should be 9. Hence, the missing term should be 40. Therefore, the correct answer is (B).

Illustration :

2. Which one of the four alterntive letters given below would come in the blank space in the series of letters given below ?

   Z A Y B X C .....

   (A) W (B) V
   (C) P (D) F

Answer with Explanation—(A) First, third and fifth letters of the series are in reverse alphabetical order while second, fourth and sixth letters are in alphabetical order. Hence, in the blank space of the series there should be a next letter of the reverse alphabetical order which is W. Therefore, the correct answer is (A).

Illustration :

3. Which one of the set of letters when sequentially placed at the gaps in the given letter series shall complete it ?

   W – U W W – – W – – X U W – X – W

   (A) XUWUWX (B) XWUUXW
   (C) XXUWWU (D) XXWWUU

Answer with Explanation—It is said in the question part, that series has a perfect sequence so to complete the series if we put the letters 'XXUWWU' in the gaps we have,

W **X** U W / W **X** **U** W / **W** X U W / **W** X **U** W.

The obtained series shows the perfect sequence. Hence, XXUWWU are the required letters to complete the series. Therefore the answer (C) is correct.

Scanned by CamScanner

Exercise

Directions—In each of the following questions, there is a series of numbers or alphabetical letters which change in some specific order. Below the series are given four alternative answers. The candidates have to find out which one of these answers would be correct in blank space of series if the numbers or alphabetical letters go on changing in the same order.

1. BD, FH, JL, NP, ...
   (A) SV (B) SU
   (C) QS (D) RT
2. AC, FH, KM, PR,.....
   (A) SU (B) TV
   (C) UW (D) VW
3. KPA, LQB, MRC, NSD,.....
   (A) TOE (B) OTE
   (C) OET (D) ETO
4. GTZ, FSY, ERX, DQW,.....
   (A) CVP (B) VCP
   (C) CPV (D) VPC
5. EPV, FQW, GRX, HSY,.....
   (A) ITZ (B) JIZ
   (C) IUZ (D) IRZ
6. ADG, GJM,.....
   (A) MOR (B) GKO
   (C) MPS (D) WTQ
7. WTQ, QNK,.....
   (A) KNQ (B) KIG
   (C) KHE (D) EHK
8. GR, IP, KN, ML,.....
   (A) OJ, RI (B) QG, SF
   (C) OJ, QH (D) OJ, QS
9. PON, RQP, TSR, VUT,.....
   (A) WUY, YXZ (B) UWV, ZXY
   (C) UVW, ZYX (D) XWV, ZYX
10. (0 + + +), (+ 0 + +), (+ + 0 +)
    (A) + + 0 0 (B) + + + 0
    (C) + + 0 + (D) + 0 + 0
11. ABY, CEY, FIY, JNY, ...
    (A) OR (B) OQ
    (C) OP (D) OT
12. CE, FI, JL, MP, QS, ..., ...
    (A) TV, WY (B) TV, XY
    (C) TW, XZ (D) TV, XZ
13. UV, QR, MN, IJ, ...
    (A) GH (B) CD
    (C) EF (D) AB
14. 1, 4, 9, 16, 25, ...
    (A) 48 (B) 36
    (C) 49 (D) 45
15. 2, 4, 7, 11, 16, 22, ...
    (A) 41 (B) 39
    (C) 25 (D) 29
16. 4, 2, 5, 3, 6, 4, 7, 5, 8, ...
    (A) 4 (B) 7
    (C) 6 (D) 3
17. 2, 5, 10, 17, 26, 37, ...
    (A) 48 (B) 50
    (C) 46 (D) 67
18. 7, 14, 23, 34, 47, 62, ...
    (A) 79 (B) 92
    (C) 82 (D) 94
19. 2, 4, 12, 48, 240, ...
    (A) 480 (B) 1200
    (C) 1440 (D) 720
20. 1, 5, 4, 10, 9, 15, 16, 20, ...
    (A) 27 (B) 25
    (C) 23 (D) 30
21. 114, 225, 336, 447, 558, ...
    (A) 569 (B) 780
    (C) 779 (D) 669
22. 20, 17, 19, 16, 18, 15, ...
    (A) 15 (B) 17
    (C) 21 (D) 22
23. 22, 22, 18, 18, 14, 14, ...
    (A) 9 (B) 10
    (C) 14 (D) 11
24. 89, 71, 29, 41, 53, ...
    (A) 65 (B) 76
    (C) 22 (D) 61
25. 3, 8, 35, 48, ...
    (A) 64 (B) 72
    (C) 99 (D) 96

Scanned by CamScanner

26. What will come in place of question-mark (?) in the following series ?

AB DEF HIJK ? STUVWX

(A) MNOPQ (B) LMNOP
(C) LMNO (D) QRST
(E) None of these

27. Which letter should be in place of the question-mark (?) in the following series ?

G H J M ? V

(A) T (B) S
(C) R (D) Q

28. What will come in place of question-mark (?)

AZ, BY, CX, ?

(A) EF (B) GH
(C) DE (D) DW

29. B, F, K, Q, ?

(A) X (B) R
(C) T (D) Y

30. BG, GC, HN, N . ? .

(A) D (B) J
(C) I (D) H

31. C, e, g, i, K ....

(A) o, K (B) m, O
(C) k, M (D) M, k

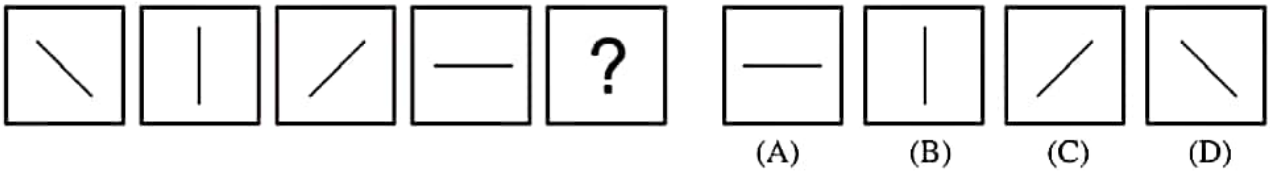
32. A/2, B/4, C/6, D/8, ...

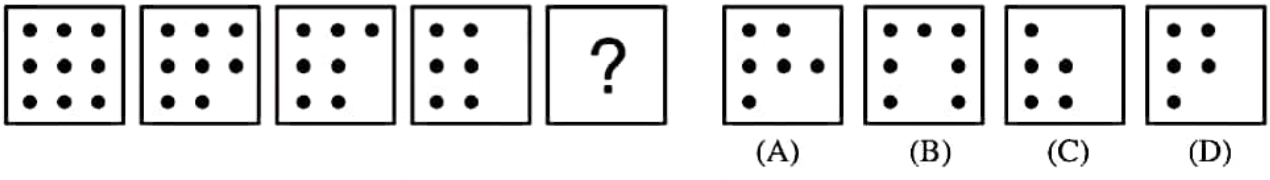
(A) E/16, F/32 (B) F/32, 1/14
(C) F/12, E/16 (D) E/10, F/12

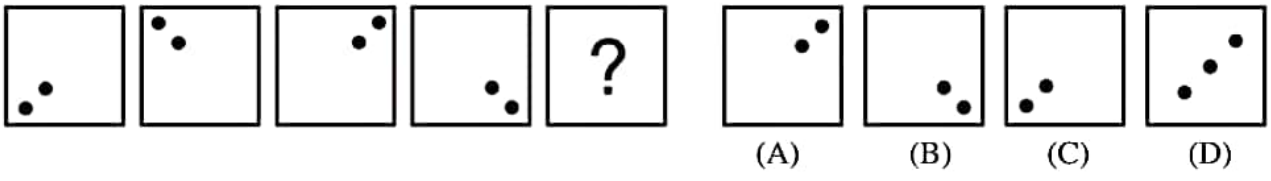
33. C-3, E-5, G-7, 1·9, ...

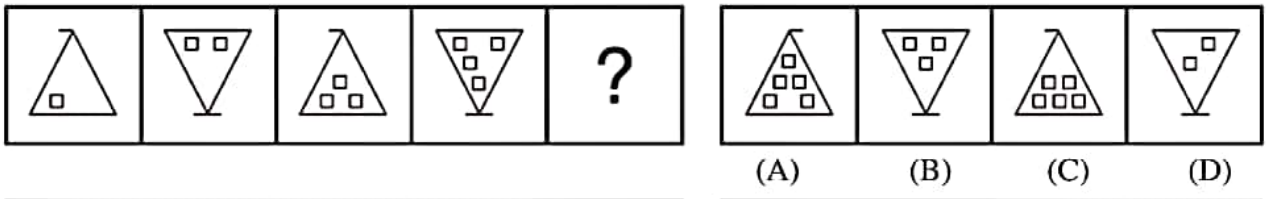
(A) X-24, M-21 (B) K-11, M-13
(C) O-15, X-24 (D) M-18, K-14

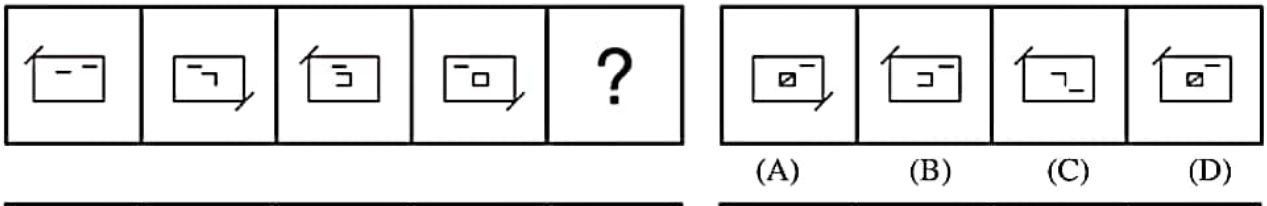
Directions—In each of the questions given below which one of the answer figures on the right should come in place of question-mark on the left, if the sequence were continued.

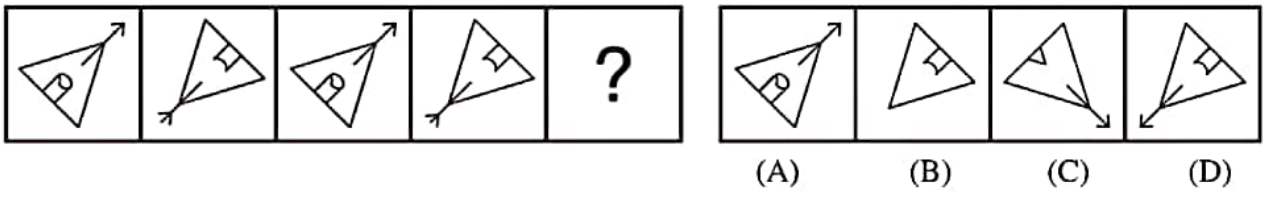
34.


35.


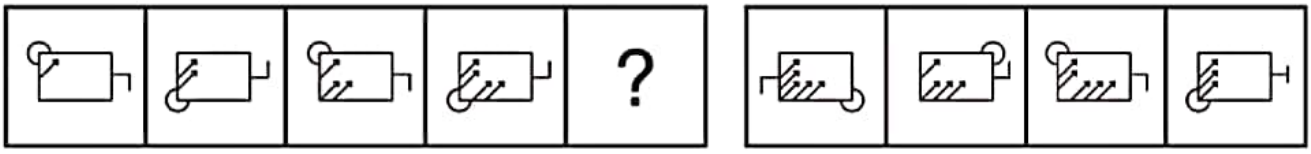
36.


37.


38.


39.


Scanned by CamScanner

40. 

(A) (B) (C) (D)

Directions—(Q. 41–50) Each and every question is based on the letter series. In each series at some places a sign (–) which shows empty place is given. These left letters in the proper order are correct in one of the following five alternatives given below the question. The letter of the correct alternative is four answer.

41. L – D – A L S – PALSD – A
    (A) PPSD (B) SDPP
    (C) SPDP (D) DSPP

42. d – badc – a – cbadcb –
    (A) abcd (B) acdb
    (C) cdba (D) cbda

43. abb – bb – aab – b – bbabb – aab – b
    (A) ababaa (B) aabaab
    (C) aaaabb (D) aa bb aa

44. ab – acc – d – bb –
    (A) cdabc (B) badaa
    (C) dbacd (D) cdbcd

45. b – a – bbb – aa – b – ba –
    (A) aaabba (B) ababaa
    (C) bbaaab (D) babbba

46. – bba – ba – – aa – ab – a
    (A) bbaabb (B) aba baa
    (C) aabbbb (D) babbab

47. – c – ab – ca – cc – bc –
    (A) bacbcb (B) acbbba
    (C) bccbac (D) cbabab

48. y – x – – z x – y – xy – zx
    (A) zyyyzy (B) xyzxyz
    (C) zxyzyz (D) zyyzyx

49. – aba – cc – – abc – ab –
    (A) abcabc (B) cbacba
    (C) bcacbc (D) cbabca

50. – k t – kk – x k – txk – –
    (A) kktkkx (B) xxttvx
    (C) xkttxk (D) kxtkkt

Answers with Explanation

1. (D) One letter of the alphabet is missing between the two letters of each term of the series. One letter is also missing between the last letter of first term and the first letter of the next term.
2. (C) One letter is misisng between two letters of each term and two letters are missing between the last and first letters of two consecutive terms.
3. (B) First letters of each term are in alphabetical order and so are second and third letters.
4. (C) First letters of each term are in reverse alphabetical order and so are second and third letters.
5. (A) First letters of each term are in alphabetical order and so are second and third letters.
6. (C) There are two letters missing between the two consecutive letters of each term and the last letter of the first term is same as the first letter of the next term.
7. (C) Taking from the reverse side two letters are missing between the letters of each term and the last and the first letters of two consecutive terms are the same.
8. (C) There is a gap of one letter between the first letters of each term while a gap of one letter from reverse side between the second letters of each term.
9. (D) Letters in all the terms are in reverse alphabetical order. Besides, the first letters of each term and the last letters of the next term are same.
10. (B) In each term 0 is proceeding to the right side.
11. (D) First two letters are in alphabetical order while there is a gap of one letter between 4th and 5th letter, gap of 2 letters between 7th and 8th letters and so on.

Scanned by CamScanner

12. (C) Between the two letters of each term the gap is alternately of one and two letters.

13. (C) Taking from the reverse side there is a gap of 3 letters between the first letters of each term while each two letters of the term are in alphabetical order.

14. (B) The terms are squares of continuous numbers.

15. (D) The difference between two consecutive terms is increasing by one.

16. (C) Beginning from the first term *i.e.* 4, each alternate term is in numerical order and from second term *i.e.* 2, each alternate term is again in numerical order.

17. (B) The difference between the each two consecutive terms increase by 2.

18. (A) The difference between two consecutive terms goes on increasing by 2.

19. (C) Each term is double, triple, four times etc. of its previous term.

20. (B) First, thrid, fifth terms etc. are 1^2 2^2, 3^3 etc. while second, fourth and sixth terms etc. are multiple of 5.

21. (D) Each term exceeds by 111 over its previous term.

22. (B) Each of the first, third, fifth term etc. goes on increasing by 1. Similarly each of the second, fourth, sixth term etc. also goes on decreasing by 1.

23. (B) The terms are in pairs and each pair goes on decreasing by 4.

24. (D) Each term is a prime number.

25. (C) The terms are $2^2 - 1, 3^2 - 1, 6^2 - 1, 7^2 - 1$. Hence, the number in the blank space should be $10^2 - 1$, *i.e.*, 99.

26. (A) One letter is left between the last letter of each group and the first letter of next group. Besides one letter is added as we proceed further is each group. The letters of each group are in alphabetical order.

27. (D) There is no gap between the first two letters. One letter is left between the second and third letter. While two letters are left between third and fourth letter the same order continuous.

28. (D) The first letters of each group are in alphabetical order while second letters are in reverse alphabetical order.

29. (A) Three letters are missing between B and F, 4 letters are missing between F and K and 5 letters are missing between K and Q.

30. (C) The first letter of first term and the second letter of the second term are in alphabetical order. Hence, the first letter of third term and the second letter of the fourth term should be in alphabetical order.

31. (B) There is a gap of one letter between two consecutive letters. Besides this, the letters are capital and small respectively.

32. (D) The Letters are in alphabetical order while the number 2, 4, 6.....etc.

33. (B) There is a gap of one letter between letters of each term. Besides, the number are 3, 5, 7, 9, 11,..., etc.

34. (D) In each next figure the line moves through an angle of 45° in the clockwise direction.

35. (D) In second fig., one dot is removed from the bottom of the third column. In third fig., one dot is again removed from the bottom of the third column. In fourth fig., one dot is again removed from the third column. Hence, in fifth fig., one dot from the bottom on the second column should be removed.

36. (C) The dots are rotating in clockwise direction from one corner to another in each subsequent figure.

37. (C) In figure (1) the vertex of the triangle is above, while in figure. (2) it is below. Again it is above in figure (3) but is below in figure (4). The small squares within it are increasing by one in each figure. A dash with the vertex is the oneside in figure (1) and (3) but is both sides in figure (2) and (4).

38. (D) Within a rectangle there is only one side of a small rectangle in figure (1) to which one more side is being added in each subsequent figure. In other respects figure (1) is like figure (3) and figure (2) is like figure (4). Hence figure (5) should be like figure (3).

Scanned by CamScanner

39. (A) Figure (1) has been repeated in figure (3) and figure (2) has been repeated in figure (4). Hence, figure (3) should be repeated in figure (5).

40. (C) On the left side of a rectangle there is one arrow in figure (1) to which one more arrow is being added in each subsequent figure. In other respects figure (1) is like figure (3) and figure (2) is like figure (4). Hence figure (5) should be like figure (3).

41. (C) The required letters are 'S PDP' to complete the series in a proper order. The series becomes as LSDPA/LSDPA/LSDPA. Here is the repeatation of 'LSDPA' therefore (C) is the correct one alternatives.

42. (D) The group of order 'cbda' completes the given series.

43. (B) The group of letters 'aab aab' in the same order is necessary to complete the series.

44. (B) The required letter are 'badaa' which give a perfect and proper order to series.

45. (D) The letters in alternative (D) are correct to complete the series.

46. (C) abb aab have been repeated twice and abba are left in the last. Had there been some more letters abb aab would have been formed.

47. (C) bcca have been repeated twice with bcc left in the last. Had there been more letters in the series bcca would have been formed.

48. (D) yzxy have been repeated thrice with yzx left in the last. Had there been more letters in the series yzxy would have been formed.

49. (D) cababc is being repeated twice in it, caba remains in the last. If there were more letters in the series cababc was to the formed.

50. (D) kktx comes thrice and kkt remains in the last. If there were more letters in the series kktx was to be formed.

Scanned by CamScanner

To Find the Odd Number

In this type of questions, four groups of letters or words are given, out of which three are alike in some way while one is odd. Candidates are required to find out which one is odd. Following illustrations are given to clarify the questions.

Illustration 1.

In the following four groups of letters, one is different from the rest. Find out the one which is different.

(A) abC (B) mpR
(C) sTh (D) lmU

Answer with Explanation—(C) In all other groups except (C) the first two letters are small but in the group (C) the second letter T is capital Hence, it is different out of all groups.

Illustration 2.

In the following four words, which one is different from the rest ?

(A) Mango (B) Brinjal
(C) Apple (D) Pear

Answer with Explanation—(B) Except brinjal all the other words are the name of fruits while brinjal is the name of a vagetable. Hence, (B) is odd.

Exercise

Directions—In each of the following questions, there are four groups of letters, three of which are similar in some respects while one is **DIFFERENT** from the rest. Find out the **DIFFERENT** one.

1. (A) Bei (B) Ciy
   (C) Dul (D) DTm
2. (A) ADn (B) jbS
   (C) NFe (D) OSi
3. (A) CRI (B) OfU
   (C) KeL (D) RCD
4. (A) MOQ (B) jLN
   (C) eGI (D) iTQ
5. (A) ALT (B) MKR
   (C) WPQ (D) DHb
6. (A) rrA (B) bbC
   (C) ppT (D) EeS
7. (A) AAI (B) CIT
   (C) NNe (D) SSn
8. (A) EFG (B) HIJ
   (C) KLM (D) PqR
9. (A) XYX (B) WvU
   (C) TSR (D) QPO
10. (A) ABc (B) DEF
    (C) GHI (D) JKL
11. (A) Dog (B) Crow
    (C) Goat (D) Camel
12. (A) Cauliflower (B) Brinjal
    (C) Lady's finger (D) Potato
13. (A) Line (B) Triangle
    (C) Circle (D) Point
14. (A) Delhi (B) Bombay
    (C) London (D) Madras
15. (A) Stone (B) Lime
    (C) Cement (D) Wall
16. (A) Table (B) Mirror
    (C) Stool (D) Chair
17. (A) Car (B) Aeroplane
    (C) Rickshaw (D) Bus
18. (A) Badminton (B) Volley ball
    (C) Tennis (D) Wrestling
19. (A) Sword (B) Shield
    (C) Dragger (D) Spear
20. (A) Rabbit (B) Frog
    (C) Hawk (D) Ass
21. (A) Eye (B) Tongue
    (C) Ear (D) Finger
22. (A) Ramayan (B) Bible
    (C) Kuran (D) Kadambini
23. (A) Iron (B) Gold
    (C) Copper (D) Coal
24. (A) Jupiter (B) Mercury
    (C) Mars (D) Saturn
25. (A) English (B) Hindi
    (C) Latin (D) French
26. (A) Strong and heavy
    (B) Fast and slow
    (C) Light and heavy
    (D) Wet and dry

Scanned by CamScanner

27. (A) Happy and pleased
(B) Trouble and relief
(C) Agony and pain
(D) Right and correct

28. (A) Cow and calf
(B) Lioness and puppy
(C) Queen and prince
(D) Sheep and lamb

29. (A) Lions and roar
(B) Birds and Chatter
(C) Clouds and thunder
(D) Asses and bray

30. (A) Fish and air (B) Bird and nest
(C) Bees and hives (D) Snake and hole

31. (A) FBI (B) QMT
(C) VRY (D) HEK

32. (A) XT (B) JF
(C) RL (D) PL

33. (A) FIL (B) RUX
(C) ILO (D) LOQ

34. (A) DGI (B) MPR
(C) KND (D) FIK

35. (A) CJG (B) HNK
(C) ELI (D) JQN

Directions—In each of the following questions from 36 to 60. There are four groups of numbers. Three of them are similar in some respects while the rest one is **DIFFERENT**. Find out that **DIFFERENT** number.

36. (A) 8791 (B) 1879
(C) 8971 (D) 7619

37. (A) 169 (B) 121
(C) 181 (D) 144

38. (A) 5188 (B) 9238
(C) 8244 (D) 6311

39. (A) 7314 (B) 7029
(C) 2709 (D) 3115

40. (A) 1472 (B) 3848
(C) 2683 (D) 4210

41. (A) 864 (B) 636
(C) 525 (D) 461

42. (A) 1624 (B) 2639
(C) 2840 (D) 3045

43. (A) 1728 (B) 4913
(C) 3375 (D) 6759

44. (A) 2865 (B) 5731
(C) 6792 (D) 6390

45. (A) 6843 (B) 8424
(C) 2412 (D) 8634

46. (A) 8762 (B) 1358
(C) 2764 (D) 5476

47. (A) 3–81 (B) 2–16
(C) 7–343 (D) 5–625

48. (A) 1257 (B) 3567
(C) 5469 (D) 4789

49. (A) 1546 (B) 9250
(C) 2034 (D) 1289

50. (A) 7–43 (B) 2–18
(C) 3–12 (D) 6–51

51. (A) 2547 (B) 2154
(C) 3624 (D) 2524

52. (A) 64 (B) 625
(C) 81 (D) 16

53. (A) 9252 (B) 6403
(C) 7304 (D) 5131

54. (A) 7344 (B) 8266
(C) 5233 (D) 5122

55. (A) 7–63 (B) 4–24
(C) 3–22 (D) 9–45

56. (A) 2572 (B) 3789
(C) 8961 (D) 2754

57. (A) 1357 (B) 2378
(C) 3579 (D) 2468

58. (A) 13–156 (B) 11–110
(C) 9–72 (D) 15–205

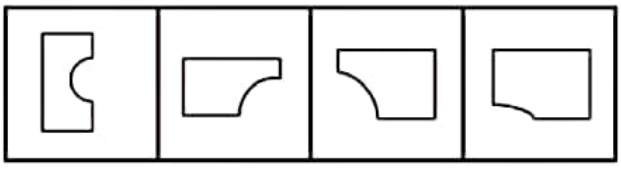
59. (A) 2–10 (B) 3–30
(C) 4–60 (D) 5–130

60. (A) 5748 (B) 2503
(C) 6857 (D) 8355

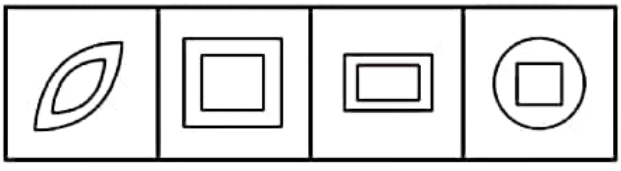
Directions—In each of the questions from 61 to 65, there are four figure given. Of these

Scanned by CamScanner

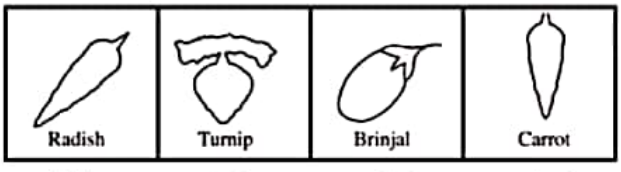
figures three are alike in a certain way and thus form a group. One of them is different. Choose the one which is different from the remaining three.

61. 

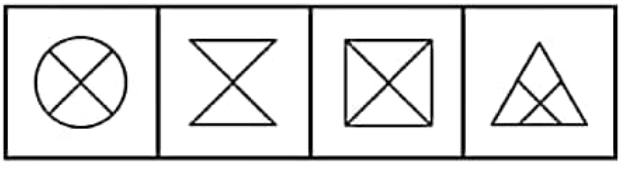
(A) (B) (C) (D)

62. 

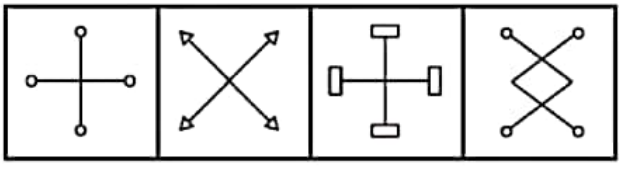
(A) (B) (C) (D)

63. 

(A) (B) (C) (D)

64. 

(A) (B) (C) (D)

65. 

(A) (B) (C) (D)

Answers with Explanation

1. (D) In other groups the second letter is small.
2. (B) In other groups the second letter is capital.
3. (D) In other groups there is any vowel.
4. (A) In other groups first letter is small and the second letter is capital.
5. (D) In other groups third letter is capital.
6. (D) In other groups first letter is small.
7. (B) In other groups first and second letters are alike.
8. (D) In other groups second letter is capital.
9. (B) In other groups second letter is capital.
10. (A) In other groups third letter is capital.
11. (B) All the rest are animals while crow is a bird.
12. (D) All the rest grow above earth while potato grows under the earth.
13. (D) All the rest occupy space while a point indicates a place only it does not occupy any space.
14. (C) All the rest are Indian towns.
15. (D) All the rest are different materials used in building construction.
16. (D) All the rest are furnitures.
17. (B) All the rest are vehicles moving on the road.
18. (D) All the rest are games in which either ball or shuttle cocks are used but in wrestling nothing like ball is used.
19. (B) All the rest are arms used to attack but shield is used to defend.
20. (C) All the rest cannot fly in air.
21. (B) All the rest are external parts of the body.
22. (D) All the rest are religious books.
23. (D) All the rest are metals.
24. (D) Only Saturn has annular rings.
25. (B) All the rest are foreign languages.
26. (A) The words in all other groups are opposite to each other.
27. (B) All the remaining pairs have words of almost the same meaning while words in (B) have opposite meaning.
28. (B) In other pairs the words have relation of mother and youngones but in (B) it is not so because the youngone of lioness is cub.
29. (B) In all other pairs second word is the sound or cry of the first word.
30. (A) In all other pairs first word is the animal or bird and second word is the place where they are found.
31. (D) In each other groups the first letter is four letters ahead the second letter and the third letter is three letters ahead the first letter.
32. (C) In each other groups, there is a gap of 3 letters in first and second letter.
33. (D) In each other groups, there is a gap of 2 letters in first and second letters and also a gap of 2 letters in second and third letters.

Scanned by CamScanner

34. (C) In each other groups, there is a gap of 2 letters in first and second letters and a gap of 1 letter in second and third letters.

35. (B) In each other groups the third letter is four letters ahead the first letter and the second letter is three letters ahead the third letter.

36. (D) All the other numbers are formed with 1, 7, 8 and 9.

37. (C) All the other numbers are perfect squares.

38. (B) In all the other numbers last two digits are same.

39. (A) In all the other numbers the sum of tens hundreds and thousands digits is equal to the unit digit.

40. (C) In all the other numbers, the digit 4 is used.

41. (D) The square of the hundreds digit gives the number which is formed by the last two digits.

42. (C) In all the rest terms the number formed by first two digits is 2/3 of the number formed by last two digits.

43. (D) In all the rest terms the number is a perfect cube. For example $12^3 = 1728$, $17^3 = 4913$, $15^3 = 3375$.

44. (B) In all the rest terms the sum of first and last digit is half of the sum of two middle digits.

45. (C) In all the rest terms last digit is half of the first digit and third digit is half of the second digit.

46. (D) In all the rest terms the sum of all the four digits is a prime number.

47. (C) In all the rest terms second number = (first number)^4.

48. (C) In all the rest terms, the digits are in increasing order.

49. (D) In all the rest terms the sum of all the four digits is a perfect square.

50. (B) In all the rest terms first number is equal to the sum of both digits of the second number.

51. (D) In all the rest terms no digit is repeated in any number.

52. (A) In all the rest terms the number is in the form of x^4.

53. (B) In all the rest terms the first digit is equal to the sum of last three digits.

54. (D) In all the rest terms, third and fourth digit each is equal to the difference of first of two digits.

55. (C) In all the rest terms second number is exactly divisible by the first number.

56. (B) In all the rest terms, two digits are even and two are odd.

57. (B) In all the rest terms either all the four digits are even or all the four digits are odd.

58. (D) In all the rest terms second number = (First number)^2 – First number.

59. (C) In all the rest terms second number = (First number)^3 + First number.

60. (A) All the rest terms are odd while the number in (A) is an even.

61. (A) In all the rest, circular are is cut from one of the corner.

62. (D) All the rest, two figures are identical.

63. (C) All the rest grow underground.

64. (B) All the other figures are divided into four parts.

65. (D) All the other figures contain single plus or into signs.

To Make the Meaningful Words with the Selected Letters of a Given Particular Word

In this test, a word is given following four words in the alternatives, you have to find out which word can be formed from the letters of the given particulars word. One of the following four words can be formed and three cannot formed in others words three words can be formed and one cannot be formed.

For Example. Which one word can't be formed from the letters of the following word. ENTHROGRAPHIC

(A) EARTH (B) HEART
(C) GEAR (D) GARMENT

Answer with Explanation—The word 'GARMENT' can not be formed from the letters of given word, because in the given word letter 'm' is not used while the word 'GARMENT' contains the letters m

Scanned by CamScanner

Exercise

Directions—In the following questions a particular **bold** word is given. Giving after the word in question part four more words are given in the alternatives. The words given in the alternatives one can not be formed from the letters of the given word in the question. Find that one word—

1. **CARPENTER**
   (A) NECTAR (B) CARPET
   (C) PAINTER (D) REPENT
2. **COMMENTATOR**
   (A) TART (B) COMMON
   (C) MOMENT (D) COSMOS
3. **DISSEMINATION**
   (A) INDIA (B) NATIONS
   (C) MENTION (D) ACTION
4. **PHARMECEUTICAL**
   (A) PRACTICE (B) METRIC
   (C) RHEUMATIC (D) CRITICAL
5. **UNCONSCIOUS**
   (A) SON (B) COIN
   (C) SUN (D) NOSE
6. **TRANQUILITY**
   (A) QUILT (B) TRINITY
   (C) TRAIN (D) TRIANGLE
7. **DISAPPOINTMENT**
   (A) POINTER (B) OINTMENT
   (C) TENAMENT (D) POSITION
8. **RECREATION**
   (A) RATION (B) ACTION
   (C) TORN (D) REFER
9. **INTELLIGENCE**
   (A) CANCEL (B) INCITE
   (C) GENTLE (D) NEGLECT
10. **THERMOLYSIS**
    (A) LOITER (B) LORIS
    (C) LOTUS (D) SISTER

Directions—In the following questions, a word is given in **bold** letters. In the following four alternatives, one word among the alternatives can be formed from the letters of the given word. You have to select that word as your answer.

11. **GERMINATION**
    (A) GERMAN (B) NOTION
    (C) NOTATION (D) SMART
12. **TRANSLOCATION**
    (A) STAFF (B) TRANSFER
    (C) LATION (D) LOCATE
13. **TOURNAMENT**
    (A) TAURS (B) TAURN
    (C) TRINT (D) MANAGE
14. **NEWS PAPER**
    (A) SWEET (B) REPEAT
    (C) SOUR (D) WASP
15. **MEASUREMENT**
    (A) MASTER (B) MANTLE
    (C) SUMMIT (D) ASSURE

Answers with Explanation

1. (C) The word 'PAINTER' can not be formed from the letters of the word 'CARPENTAR' because 'I' is not used in the original word.
2. (D) The word 'COSMOS' can not be formed from the letters of the word 'COMMENTATOR', because the letter 's' is not used in the given particular word.
3. (D) The word 'ACTION' can not be formed from the letters of the given word 'DISSEMINATION' because the given particular word does not contain the letter 'C'.
4. (D) The word 'CRITICAL' can not be formed from the letters of the word 'PHARMECEUTICAL', because letter 'I' is not used two times in the original word.
5. (D) The word 'NOSE' can not be formed from the letters of the word 'UNCONSCIOUS', because the original word does not consist the letter 'E'.
6. (D) The word 'TRIANGLE' can not be formed from the letters of the 'TRANQUILLITY', because the letter 'G' is not present in the orginal word.
7. (A) The word 'POINTER' can not be formed from the letters of the word 'DISAPPOINTMENT' because letter 'R' is not used in the original word.
8. (D) The word 'REFER' can not be formed from the letters of the given word

Scanned by CamScanner

"RECREATION", because the letter 'T' is not present in the original word.

9. (A) The word 'CANCEL' can not be formed from the the letters of the given word 'INTELLIGENCE' because the letter (A) is not present in the original word.

10. (C) The words 'LOTUS' can not be formed from the letter of the given word 'THERMOLYSIS' because the letter 'U' is not present in the original word.

11. (A) The word 'GERMAN' can be formed from the letters of the word 'GERMINATION'.

12. (C) The word 'LATION' can be formed from the letters of the given word 'TRANSLOCATION'.

13. (B) The letters of the word 'TAURN' are present in the given word 'TOURNAMENT'.

14. (D) The word 'WASP' can be formed from the letters of the given word "NEWSPAPER", because all the letters of the word 'WASP' are present in the word 'NEWSPAPER'.

15. (A) The word 'MASTER' can be formed from the letters 'MEASUREMENT'.

Coding and Decoding Test

In this type of test letters instead of representing themselves, represent some other letters *i.e.*, they do not understand for themselves but they acquire an artificial value. These artificial values are turned as codes. The codes follow a certain set of principles or patterns. Candidates are required to find out these principles and with their help they have to be code a clear word or decode a coded word.

Example 1.

If the word FIRE is coded as DGPC, how will the word SHOT be coded ?

(A) FQMR (B) QMFR

(C) QFMR (D) QRFM

Answer with Explanation—(C) By comparing the letters of the word FIRE, with the letters of its code word DGPC, we notice that—

F stands for D

I Stands for G

R Stands for P

and E stands for C

Thus it is clear that each letter in the word FIRE stands for the letter which is two letters ahead in the coded word. By applying the same relationship with the word SHOT, coded word comes as QFMR. Hence, the correct answer is (C).

Example 2.

In a certain language,

(a) 'Tik Lak Po' stands for 'Sunil is beautiful'

(b) 'Lak Hip Yup' stands for 'Dog is barking'

(c) 'Hum Qi Po' stands for 'Sunil was absent'

Which of the following words stands for 'beautiful' ?

(A) Lak (B) Tik

(C) Qi (D) PO

Answer with Explanation—(B) By comparing the statements (a) and (b) we see that 'Lak' stands for 'is'. Similarly by comparing (a) and (c) we find that 'PO' stands for 'Sunil'. Therefore, 'Tik' stands for 'beautiful'.

Example 3.

The number is coded in the following code:

Digit	7	2	1	5	3	9	8	6	4
Letter	W	L	M	S	I	N	D	J	B

Find out which one of the answer has the correct coded form of 3 9 6 7 4 ?

(A) I N J B W (B) S N J W D

(C) D N W J B (D) I N J W B

Answer with Explanation—(D) By looking into digit and letter rows we observe that

3 stands for I

9 stands for N

6 stands for J

7 stands for W

and 4 stands for B

Hence, the correct coded form of 3 9 6 7 4 is I N J W B.

Exercise 1

Directions—In the following questions, a word is written according to some code. Using the same code any word may be written as one of the four alternatives given for that question. Find the correct alternative for each question.

Scanned by CamScanner

1. In a certain code POET is coded as PEOS. How is LEAF coded in that code ?
(A) LAAF (B) LAEE
(C) LAFF (D) LEFA

2. In a certain code CERTAIN is coded as ECTRIAN. How is ANALOGY coded in that code ?
(A) NALAGOY (B) NALAGYO
(C) NAAOLYG (D) NALOAGY

3. In a certain code BILL is coded as 2466; DIG as 345 and NUT as 798. How is BUILDING coded in that code ?
(A) 92463475 (B) 29467435
(C) 92643475 (D) 29463475

4. If NUMBER is coded in a certain code as UNBMRE, then how is GHOST coded in that code ?
(A) HOGTS (B) HGOST
(C) HGSOT (D) HGOTS

5. GOLDEN is coded as ODNGLE, how SENIOR will be coded ?
(A) EIRSNO (B) IORSEN
(C) ENSIRO (D) NOSEIR

6. If BEFORE is coded as FEBERO then JUNGLE be coded as—
(A) NUJELG (B) NUEJLG
(C) JELGNU (D) NUEJGL

7. If MATTER is coded as TAMRET then BEYOND be coded as—
(A) EBOYDN (B) DNOYEB
(C) YEBDNO (D) YEDNOB

8. If in a certain code NAUGHT is coded as THGUAN, then in the same code LABOUR will be coded as—
(A) BALRUO (B) ALOBRU
(C) RUOBAL (D) RUOLAB

9. If the word KNIFE is coded as MPKHG, what do the letters DTGCF stand for ?
(A) FVIEG (B) BREAD
(C) FVIEH (D) BRAED

10. If the letters GBOQX stand for the word HAPPY, how would you code the word CROSS ?
(A) BSPTR (B) BSNRT
(C) BSNTR (D) BNSTR

11. If the word GRASP is coded as INOPQ and BROWN is coded as RNSTU, how would code the word SPARROW ?
(A) PQONNST (B) PQONMOT
(C) POQNNSU (D) PQONNSU

12. If HARD is coded as 1357 and SOFT is coded as 2468, what do the figures 21448 stand for ?
(A) SHOP (B) SCHOOL
(C) SHOOT (D) SHOOL

13. If MNPQWXFG stand for the word LOVE, how would you encode the word HATE ?
(A) FGBCVUFG (B) FGBCUVCD
(C) IJBGVUFG (D) IJBCUVFG

14. If SEND-MONEY is coded as QCLB-KM LCW, how would you encode 'MOST-SECRET' ? Write the first and last letters only.
(A) R, K (B) O, V
(C) K, R (D) V, U

15. If TOUR is coded as 1234; CLEAR is coded as 56784 and SPARE is coded as 90847, how you encode the word SCULPTURE ?
(A) 953601347 (B) 935601437
(C) 567903417 (D) None of these

16. If A is coded 2, B is coded 4 and C is coded 6, what does the following number stand for ?
12 10 10 8
(A) DEEP (B) FEED
(C) DOOR (D) DEAF

17. If Sister is coded as 535301, Uncle is coded as 84670 and Boy is coded as 129, how ill you encode the word 'SON' ?
(A) 923 (B) 524
(C) 342 (D) 872

18. If SLEEP is coded as XMKKB, SPEAR is coded as XBKOY and PULL is coded as BEMM then how would you encode the word PLEASURE ?
(A) XYKBMOFK (B) BMKOXEYK
(C) KOXFYKBM (D) BKMOXEKY

19. If the word BOY is coded as ACNPXZ, what does the coded word RTNPMO stand for ?
(A) SON (B) CUT
(C) PEN (D) DOG

Scanned by CamScanner

20. If the word GASP is coded as KMRO and CROW is coded as AXYZ then how would you encode the word SPARROW ?

(A) TRCTTOY (B) ROMXYZY

(C) ROMXXYZ (D) VSDUURZ

21. If 8514 stands for HEAD, 3945 stands for RIDE and 057 stand for BEG then what does stand for GRADE ?

(A) 13754 (B) 41357

(C) 14735 (D) 73145

22. If INDUS is coded as 03865 and TENNIS is coded as 243305 then STUDENT will be coded as—

(A) 5268432 (B) 5642832

(C) 5628342 (D) 5648324

23. If COW is coded as 358, WORD is coded as 8571 and DRAW is coded as 1708 then how would you encode the word COWARD ?

(A) 358017 (B) 358071

(C) 358077 (D) 507381

24. If SON is coded as TUPQOP, what will be the first and last letters of the coded word of FATHER ?

(A) G H (B) G T

(C) D E (D) P Q

25. If LINE CLEAR is coded as OKQGFN HCU, what will be the first and last letters of the word for which the letters ZKUGSCUVXTH stand for ?

(A) W E (B) Z F

(C) Y G (D) Z H

Answers with Explanation

1. (B) First letter of the original word is the same in the code word, next two letters are in reverse position and there is a gap of one letter between the 4th letters of the original and coded word.

2. (A) First two letters of the original word are in reverse position in the code word such is the case for the next letters but last letter is same.

3. (D) By using B/2, U/9, I/4, L/6, D/3, N/7, G/5, we get 29463475 for Building.

4. (C) First two letters of the original word are in the reverse position in the code word, such is the case with other letters also.

5. (A) First, third and fifth letters of the original word are the fourth, fifth and sixth letters of the code word while second, fourth and sixth letters are the first, second and third letters of the code word.

6. (A) First there letters are in reverse order in the code word and next there letters are also the reverse order in the code word.

7. (C) First and third letters of the original word are in reverse position in the code word. Such is the case with fourth and sixth. But second and fifth letters remain at their places.

8. (C) All the letters of the original word are in reverse order in the code word.

9. (B) There is a gap of one letter between the corresponding letters of two words.

10. (C) The first letter of the code word is the last to the first letter of the original word and the second letter of the code word is the next to the second letter of the original word in alphabetical sequence and so on.

11. (A) By studying the letters of original words and their coded words, it is clear that P stands for S, Q stands for P, O stands for A, N stands for R and so on.

12. (C) By studying the original words and their coded words it is clear that 2 stands for S, 1 stands for H, 4 stands for O and 8 stands for T.

13. (D) For one letter of the original word stand next two letters in the code word.

14. (B) There is a gap of one letter between each letter of the two words.

15. (A) By studying the original and their coded word, it is clear that for S stands 9, for C stands 3 and so on.

16. (B) For A which is the first letter, stands 2, for B the second letter, stands 4 and so on. Hence 12 would stand for sixth letter, 10 would stand for 5th letter and so on.

17. (B) By studying the original words and their coded words it is clear that for S stands 5, for O stands 2 and for N stands 4.

18. (B) By studying the original words and their coded words, it is clear that for P stands B, for L stands M and so on.

19. (A) First letter of the original word falls between the first two letters of its coded word and so on.

Scanned by CamScanner

20. (C) By studying the original words and their coded words it is clear that for S stands R, for P stands O and so on.

21. (D) By studying the original words and their coded words it is clear that for G stands 7 and so on.

22. (A) Here S/5, T/2, U/6, D/8, E/4 and N/3.

23. (B) Here C/3, O/5, W/8, A/0, R/7 and D/1.

24. (B) For S stand its next letters in its code word and so on.

25. (A) There is a gap of two letters between each letter of the two words.

Exercise 2

Directions—In each of the following questions, there are four possible answers. Read the question carefully and find the correct answer.

1. If (a) 'Quo Cui Heer' means 'Boy is good', (b) 'Lai Quo Mea' means 'Meena is fair', (c) 'Ruo Lev Mea' means 'All are fair' and (d) 'Si Hai Cui' means 'Dog was good' then which of the following words stands for 'Boy' ?

   (A) Quo (B) Cui
   (C) Heer (D) Lai

2. In a certain language, (a) 'hupa chip fu pa' stands for the statement, 'Ram is very intelligent', (b) 'Chip hupa kupa tik' for 'Hari is very smart', (c) 'Luk fu hupa' for 'Boy is intelligent' and (d) 'fu tik dop' for 'smart and intelligent'. Which of the following words stands for 'Hari' ?

   (A) Chip (B) Kupa
   (C) hupa (D) tik

3. In a certain language, (a) 'chip din chunk' means 'student attends class', (b) 'Din sunk dink' means 'Arjun is student', (c) 'Jump mink sink' means 'schools are good' and (d) 'Dink mup chimp' means 'Teacher is teaching'. Which of the following words stands for 'Arjun' ?

   (A) Sunk (B) Din
   (C) Dink (D) Chunk

4. In question (3) which statement is surplus ?

   (A) a (B) b
   (C) c (D) d

5. In a certain code language :
   'Tom Kun Sud' means 'Dogs are barking' 'Kun jo Mop' means 'Dogs and horses' and 'Mut Tom Ko' means 'Donkies are mad' Which of the following words stands for 'Barking' ?

   (A) Sud (B) Kun
   (C) Jo (D) Tom

6. In a certain languge :
   (a) 'rill ba' means 'Yellow pen'
   (b) 'pic ba sa' means 'flower and pen'
   (c) 'ul tam rill' means 'lovely yellow mango' and
   (d) 'sa ul' means 'lovely flower'
   Which one of the following words stands for 'mango' ?

   (A) ul (B) tam
   (C) ba (D) rill

7. In a certain language :
   (a) 'YOB YERA SE' means 'Child is innocent'
   (b) 'PACE LA YERA' means 'Innocent and long'
   (c) 'NEG LA SE' means 'Man is long'
   Which of the following words stands for 'and' ?

   (A) YERA (B) PACE
   (C) LA (D) NEG

8. In a certain language :
   (a) 'de bom' stands for 'lovely flower'
   (b) 'poe til de' stands for 'flower and fruit'
   (c) 'pere xas bom' stands for 'lovely green pasture' and
   (d) 'poc xas' stands 'green fruit'
   Which of the following words stands for 'pasture' ?

   (A) pere (B) poc
   (C) bom (D) xas

9. In a certain language :
   (a) 'lew nas hsi ploy' stands for 'she is bringing coffee'
   (b) 'wir sut lew ploy' stands for 'he is bringing milk'
   (c) 'sut lim nas' stands for 'milk and coffee'
   Which of the following words stands for 'he' ?

   (A) sut (B) wir
   (C) ploy (D) lew

Scanned by CamScanner

10. In a certain language :
   (a) 'RILL PA' means 'My dog'
   (b) 'PA SEM TA' means 'Dog is black'
   (c) 'RILL HAK KOP' means 'My dear friend' and
   (d) 'TA KOP' means 'Black friend'

   Which of the following words stands for 'Dear' ?

   (A) Rill (B) Kop
   (C) Hak (D) Sem

Answers with Explanation

1. (C) Since 'Quo' stands for 'is' and 'Cui' stands for 'good'. Therefore, 'Heer' stands for 'Boy'.
2. (B) Since 'hupa' stands for 'is', 'fu' stands for intelligent', 'tik' stands for 'smart'. Therefore, 'kupa' stands for 'Hari'.
3. (A) Since 'Din' stands for 'student' and 'Dink' stands for 'is'. Therefore, 'sunk' stands for 'Arjun'.
4. (C)
5. (A) Since the word 'Tom' stands for 'are' and 'Kun' stands for 'Dogs'. Therefore, 'sud' stands for 'barking'.
6. (B) Since the word 'ul' sands for 'lovely' and 'rill' stands for 'yellow'. Therefore, 'tam' stands for 'mango'.
7. (B) Since the word 'YERA' stands for 'innocent' and 'LA' stands for 'long'. Therefore, 'PACE' stands for 'and'.
8. (A) Since the word 'bom' stands for 'lovely' and 'xas' stands for 'green'. Therefore 'pere' stands for 'pasture'.
9. (B) Since the words 'lew ploy' stands for 'is bringing' and 'sut' stands for milk. Therefore, 'wir' stands for 'he'.
10. (C) Since the word 'RILL' stands for 'My' and 'KOP' stands for 'Friend'. Therefore, the word 'HAK' stands for 'Dear'.

Exercise 3

Directions—In each of the following questions, code each of the given number according to the following relation of digits and letters—

Digit :	7	2	1	5	3	9	8	6	4
Letter :	W	L	M	S	I	N	D	J	B

1. 5 2 3 7 9
   (A) SLNWI (B) SLIWN
   (C) SLINJ (D) MLSWI
2. 1 8 4 6 3 2
   (A) MDJBSL (B) MDJBIL
   (C) BSDLMW (D) MDBJIL
3. 6 4 9 2 8
   (A) JBLND (B) BJNLD
   (C) JBNLD (D) JBLSD
4. 8 3 7 3 4 1
   (A) DWNIBM (B) DIWIBM
   (C) IWMIDB (D) DIWSIM
5. 3 5 9 3 1 2
   (A) ISIMNL (B) ISNILM
   (C) SINLMI (D) ISNIML

Directions—In each of the following questions, code each of the given word according to the following relation of digits and letters—

Letter :	D	I	N	E	S	H	K	U	M
Digit :	8	2	5	1	7	4	9	3	6

6. D E S H M U N
   (A) 2174672 (B) 8175346
   (C) 1356984 (D) 8174635
7. S H K N U D I
   (A) 7453398 (B) 7495238
   (C) 7495382 (D) 4595283
8. N I S U D I M
   (A) 3598762 (B) 5278362
   (C) 5273826 (D) 5273628
9. D I N E S H
   (A) 821574 (B) 217485
   (C) 528135 (D) 825174
10. SUNIMKU
   (A) 7352639 (B) 7352369
   (C) 7352693 (D) 7352396

Answers

1. (B)	2. (D)	3. (C)	4. (B)	5. (D)
6. (D)	7. (C)	8. (C)	9. (D)	10. (C)

Direction Sense Test

The object of this type of test is to acertain the sense of direction in the candidates. To solve such questions the candidates are advised to use their sense about the direction and then they should answer the questions correctly.

Scanned by CamScanner

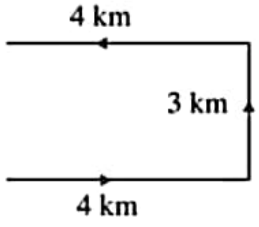
Example :

1. After starting from a point, A walks 4 kms towards East, then turning to left moves 3 kms. Then again he turns to left and moves 4 kms. Which one of answers given below indicates the correct direction in which A is from his starting point ?

   (A) East (B) South

   (C) North (D) West

Answer with Explanation—(C) The diagram given below dipicts the movement of A and



reveals that A is towards North from his starting point.

Exercise

Directions—In each of the following questions four possible answers are given. Read each of the questions carefully and findout the correct answer.

1. Ravi goes 40 km to North, then turns right and walks 50 km then again turns right and walks 30 km, then again turns right and walks 50 km. Now how many km is he from his original position ?

   (A) 0 (B) 20

   (C) 10 (D) 40

2. Subash stood 8th from the left in a row of boys. He changed his position towards right keeping three more boys to his left and obtained 10th position from the right. How many boys were there in the row ?

   (A) 21 (B) 18

   (C) 20 (D) 19

3. Hari goes first in the direction of East, then he turns to South and covers a distance. After this he goes towards West and in the end he turns to his right. Now in which direction is he going ?

   (A) East (B) North

   (C) South (D) West

4. Shashi travels three kilometres to the West and then turns left and goes two kilometres and then turns right and then goes one kilometre. He again turns right and goes five kilometres. How far is he from the starting point ?

   (A) 5 km (B) 2 km

   (C) 3 km (D) $\sqrt{2}$ km

5. Six families A, B, C, D, E and F are living in houses in a row. B has F and D as neighbours, E has A and C as neighbours, A does not live next to D. Who are F's next door neighbours ?

   (A) B and E (B) B and D

   (C) B and C (D) Only B

6. Five boys are sitting in a row. Amar is on the right of Bipin. Ramesh is on the left of Bipin but is on the right of Chandra Shekhar. Amar is on the left of Davendra. Who is sitting first from the left ?

   (A) Amar (B) Chandra Shekhar

   (C) Bipin (D) Davendra

7. Manish faces towards North and walks, 5 km. Then he turns to right and walks 3 km. Now he turns left and walks 2 km. He again turns to his left and walks 3 km. How far is Manish from his starting point ?

   (A) 3 km (B) 7 km

   (C) 4·5 km (D) 8 km

8. Mayank faces towards East and walks 3 km and then he turns to his left and walks 2 km. After this he turns to his right and walks 4·5 km. He again turns to his right and walks 1 km. After this he turns to his right and walks 1·5 km and then turns to his left. Now in which direction is he facing ?

   (A) West (B) East

   (C) North (D) South

9. Four friends are sitting in a row. Rakesh is to the right of Prasun. Vinod is to the right of Rakesh. Shanker is to the left of Vinod and Rakesh but not at the extreme. Who is at the extreme right ?

   (A) Rakesh (B) Shanker

   (C) Vinod (D) Prasun

10. Five boys Rakesh, Anil, Mahesh, Suresh and Manjit are sitting in a circle. Suresh is to the right of Manjit. Anil is sitting in between Rakesh and Suresh. If Manjit is sitting in between Mahesh and Suresh, who is seated to Mahesh's left ?

Scanned by CamScanner

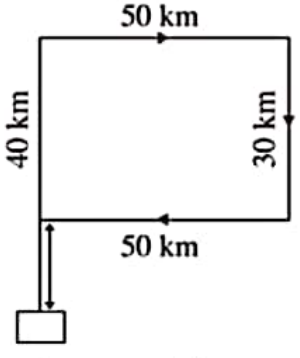
(A) Anil (B) Manjit
(C) Rakesh (D) Suresh

11. Five books are lying in a pile. E is lying on A and C is under B. A is lying above B and D is lying under C. Which book is lying at the bottom ?
(A) B (B) C
(C) D (D) E

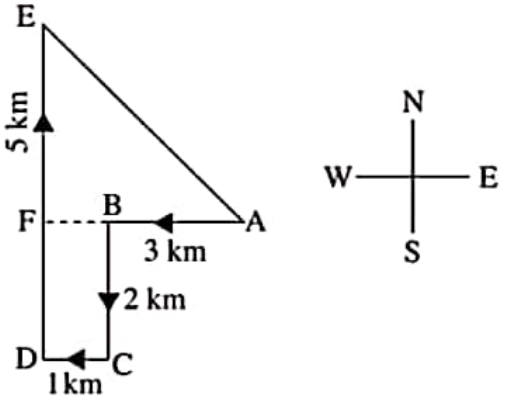
12. Four coloured marbles are lying on a table. The red marble is at a distnace of 10 cm in the East of green marble. The yellow marble is at a distance of 10 cm in the East of blue marble while at a distance of 15 cm in the South of red. If the blue marble is at 15 cm from the green, in which direction is the blue marble of the green marble ?
(A) North (B) South
(C) East (D) West

Answers with Explanation

1. (C) The movements of Ravi are shown below—

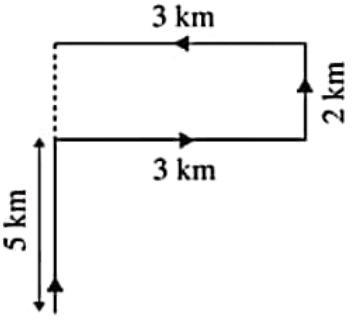


2. (C) Finally there are 10 boys on the left and 9 boys on the right of Suresh.
3. (B) When Hari goes in the direction of West, he turns to his right and right from the West is North. Hence, then he is going in the North direction.
4. (A) The movements of Shashi are as follows :

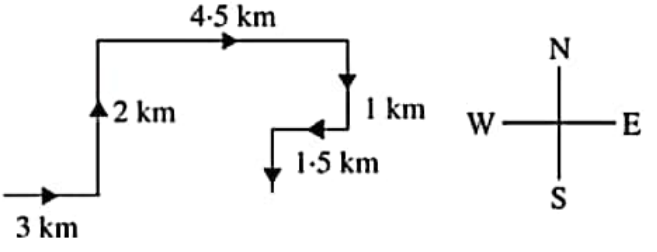


$$AF = 3 + 1 = 4 \text{ km}$$
$$EF = 5 - 2 = 3 \text{ km}$$
$$AE^2 = AF^2 + EF^2$$
$$= (4)^2 + (3)^2 = 25$$
$$\therefore \quad AE = 5 \text{ km}$$

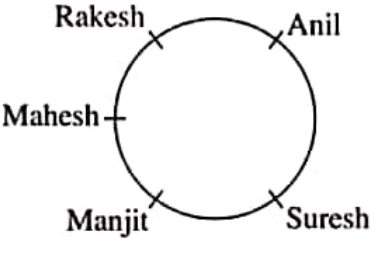
5. (C) The houses of six families are in the following order :
D B F C E A
6. (B) The five boys from left to right are in the following order :
Chandra Shekhar, Ramesh, Bipin, Amar, Davendra.
7. (B) $5 + 2 = 7$ km



8. (D)

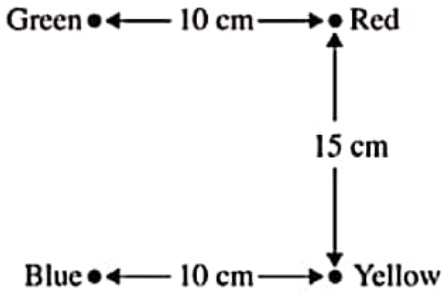


9. (C) From left to right, the order of four friends is as Prasun, Shanker, Rakesh, Vinod.
10. (C) Five boys are seated as below :



11. (C) The books in the pile to downward are in the following order. E, A, B, C, D.
12. (B) The positions of all the four coloured marbles are shown below :

Scanned by CamScanner



Blood Relation

In this type of test, knowledge of the candidate is tested about different kind of relations among the persons. Questions on this test can be done only when a candidate is well-known about the different types of relations.

Example :

1. If A is C's son, C and Q are sisters, Z is Q's mother and P is the son of Z, then which of the following relations is true ?
   (A) Q is A's grandfather
   (B) P is the maternal uncle of A
   (C) P and A are cousins
   (D) C and P are sisters.

Answer with Explanation—Since A is C's son. It means C is the mother of A. As C and Q are sisters, therefore, Q is the maternal aunt of A. Since Z is the mother of Q. Hence Z is the maternal grandmother of A and since P is the son of Z, so P is the maternal uncle of A. Hence, the statement (B) is true.

Exercise

Directions—In each of the following questions four possible answers for each question are given below it. One of the answers is correct. Find out the correct answer.

1. X and Y are children of Z. Z is the father of X but Y is not the son of Z. What is Y to Z ?
   (A) Sister (B) Daughter
   (C) Nephew (D) Cousin

2. A woman walking with a boy meets another woman and on being asked about her relationship with the boy, she says, "My maternal uncle and his maternal uncle's maternal uncle are brothers." What is the relationship between the woman and boy ?
   (A) Mother and son
   (B) Aunt and nephew
   (C) Grandmother and grandson
   (D) None of these

3. A man was going with a girl. Somebody asked his relationship with the girl. He replied, "My paternal uncle is the paternal uncle of her paternal uncle." Find out the relationship between the man and girl.
   (A) Brother-in-law and sister-in-law
   (B) Father and daughter
   (C) Brother and sister
   (D) Maternal uncle and niece

4. If Ajay's son is the uncle of Sunil's son, what is the relationship between Ajay and Sunil ?
   (A) Cousin
   (B) Brother
   (C) Father and son
   (D) Grandfather and grandson

5. If a man's father is the son of the husband of a woman, what is the woman to the man ?
   (A) Sister (B) Grandmother
   (C) Mother-in-law (D) Niece

6. If A's father is B's father's son and B does not have any brother or son, what is the relationship between B and A ?
   (A) Mother-daughter
   (B) Father-son
   (C) Cousins
   (D) Father-daughter

7. Pointing to a photograph my mother said, "This woman's husband is your mother's son." If I have no brother then what is the relationship between I and the woman in the photograph ?
   (A) Brother and sister
   (B) Brother-in-law and sister-in-law
   (C) Husband and wife
   (D) Nephew and aunt

Directions—(Q. 8 to 12) Read the following passage carefully and answer the questions given below.

There are six persons A, B, C, D, E and F in a family. C is the sister of F. A is brother of E's husband. D is the father of A and grandfather of F. There are 2 fathers, 3 brothers and a mother in the group.

Scanned by CamScanner

8. Which of the following is a group of brothers ?
(A) A, B, C (B) A, B, F
(C) A, B, D (D) B, D, F

9. What is the relationship between F and E ?
(A) Son-mother
(B) Husband-wife
(C) Brother-in-law and sister-in-law
(D) Father-in-law and daughter-in-law

10. Who is the mother in the family ?
(A) A (B) C
(C) B (D) E

11. How many male members are there in this family ?
(A) 4 (B) 3
(C) 2 (D) 1

12. Who is E's husband ?
(A) B (B) D
(C) C (D) A

Directions—(Q 13 to 15) Read the following passage carefully and answer the questions given below it.

In a car race, there are six participants A, B, C, D, E and F. Out of which two are ladies. E and his unmarried sister were new entrants this year. Husband of D who is also participating this year was last year's winner of the race. A and C were last year's runners-up. This year's winner was neither last year's winner nor a new entrant. B could not complete the race as his car developed engine-trouble. At the end of the race C was ahead of A but remained behind E.

13. Who is the husband of D ?
(A) A (B) E
(C) B (D) C

14. Who is the winner of this year to B ?
(A) Sister (B) Wife
(C) Brother (D) None of these

15. Who is the sister of E ?
(A) D (B) A
(C) C (D) F

Answers with Explanation

1. (B) 2. (B) 3. (B) 4. (C) 5. (B)
6. (B)
7. (C) Since my mother has only one son, my mother's son means myself. Therefore, the woman in the photograph is my wife.

For Q. 8–12 from the given information it is clear that D has two sons A and B. E is the wife of B, C and F are respectively the daughter and son of B and E.

8. (B) 9. (A) 10. (D) 11. (A) 12. (A)

For Q. 13–15 D and F are two ladies out of these F is unmarried and D is the wife of B. The winner of this year is D.

13. (C) 14. (B) 15. (D)

Arranging in Proper Sequence

In this type of test, candidates are required to arrange the given words in ascending or descending order of natural sequence and then should answer in the accordance of the question.

Example :

1. Ar range the following in their natural sequence of descending order and then find out the last word.

Street, Neighbourhood, Family, Town

(A) Family (B) Street
(C) Neighburhood (D) Town

Answer with Explanation—Natural sequence of the given words in descending order will be in the following way.

Town, Street, Neighbourhood, Family

Since the last word is 'Family'. Hence the correct answer is (A).

Example :

2. Arrange the following words as they occur in the dictionary and then find the word which comes in the third place.

Custom, Costume, Cupboard, Customary

(A) Costume (B) Custom
(C) Cupboard (D) Customary

Answer with Explanation—(B) Following is the order of the given words in which they occur in the dictionary.

Costume, Cupboard, Custom, Customary Since the word in third place is Custom. Hence the correct answer (B).

Scanned by CamScanner

Exercise

Directions—In each of the following questions there are four possible answers. Find out the correct answer.

1. Arrange the following words in their natural sequence and findout the first and last word.
   Go, Look, Stop
   (A) Look, Go (B) Look, Stop
   (C) Stop, Go (D) Stop, Look

2. Arrange the following words in their natural sequence and findout the first and second word.
   Chewing, Cook, Digest
   (A) Cook, Chewing
   (B) Cook, Digest
   (C) Chewing, Digest
   (D) Digest, Cook

3. Arrange the following words in their natural sequence and findout the first word.
   Trust, Action, Think, Listen
   (A) Think (B) Trust
   (C) Action (D) Listen

4. If the following words are arranged according to their date of birth in ascending order, which one of the following words will be in second place ?
   Rabindranath Tagore, Mahatma Gandhi, Jawaharlal Nehru, Dr. Rajendra Prasad.
   (A) Rabindranath Tagore
   (B) Jawaharlal Nehru
   (C) Mahatma Gandhi
   (D) Dr. Rajendra Prasad

5. If the following words are arranged according to their size in descending order, which one of the following word will be in third place ?
   She-goat, Elephant, Cow, Horse
   (A) She-goat (B) Cow
   (C) Elephant (D) Horse

6. If the following words are arranged in their natural sequence which of the words will be in first and third place ?
   Doctor, Fever, Medicine ?
   (A) Fever, Doctor
   (B) Doctor, Medicine
   (C) Medicine, Fever
   (D) Fever, Medicine

7. If the following words are arranged in their natural sequence of ascending order, which of the following words will come in third place ?
   Home, University, College, School
   (A) School (B) University
   (C) College (D) Home

8. If the following words are arranged in their natural sequence in ascending order, findout the word which would occur in fourth place ?
   Matured, Youth, Teens, Childhood, Infancy
   (A) Teens (B) Youth
   (C) Matured (D) Infancy

9. If the following words are arranged in their natural sequence of ascending order which one of the following words would occur in foruth place ?
   Sheep, coat, cloth, yarn, wool
   (A) Cloth (B) Wool
   (C) Coat (D) Yarn

10. If the following words are arranged in their natural sequence of ascending order, which of the following words would be the middle ?
    Squadron Leader, Wing Commander, Pilot Officer, Flying Officer, Flight Lieutenant
    (A) Wing Commander
    (B) Pilot Officer
    (C) Flight Lieutenant
    (D) Squadron Leader

11. If the following words are arranged in their natural sequence of ascending order, which of the following words would occur in second place ?
    Tree, Plant, Furniture, Seed, Wood
    (A) Tree (B) Plant
    (C) Furniture (D) Wood

12. If the following words are arranged in their natural sequence of descending order, which of the following word would occur in fifth place ?
    Eye, Lips, Knee, Waist, Braid
    (A) Waist (B) Braid
    (C) Eye (D) Knee

13. If the following words are arranged in their natural sequence of a ascending order, which one of the following would occur in the middle place ?
    Ring, Nose-ring, Anklet, Necklet, Waistlet

Scanned by CamScanner

(A) Waistlet (B) Nose-ring
(C) Ring (D) Anklet

14. If the following words are arranged as they occur in the dictionary, which of the following words would come in the last ?
Solution, Solvent, Solvency, Solon
(A) Solution (B) Solvent
(C) Solvency (D) Solon

15. If the following words are arranged as they occur in the dictionary, which of the following words would come in the second place ?
Watch, Water, Watching, Watchful
(A) Watch (B) Watching
(C) Water (D) Watchful

Answers with Explanation

1. (C) On arranging the words in natural sequence :
Stop, Look, Go
2. (A) On arranging the words in natural sequence :
Cook, Chewing, Digest
3. (D) On arranging the words in their natural sequence :
Listen, Think, Trust, Action
4. (C) On arranging the words according to their date of birth in ascending order :
Rabindranath Tagore, Mahatma Gandhi, Dr. Rajendra Prasad, Jawaharlal Nehru.
5. (B) On arranging the words according to their size in descending order :
Elephant, Horse, Cow, She-goat
6. (D) On arranging the words in their natural sequence :
Fever, Doctor, Medicine
7. (C) On arranging the words in their natural sequence in ascending order :
Home, School, College, University
8. (B) On arranging the words in their natural sequence in ascending order :
Infancy, Childhood, Teens, Youth, Matured
9. (A) On arranging the words in their natural sequence of ascending order :
Sheep, Wool, Yarn, Cloth, Coat
10. (C) On arranging the words in their natural sequence of ascending order :
Pilot Officer, Flying Officer, Flight Lieutenant, Squadron Leader, Wing Commander.
11. (B) On arranging the words in their natural sequence of ascending order :
Seed, Plant, Tree, Wood, Furniture
12. (D) On arranging the words in their natural sequence of descending order :
Braid, Eye, Lips, Waist, Knee
13. (C) On arranging the words in their natural sequence of ascending order :
Anklet, Waistlet, Ring, Necklet, Nose-ring
14. (B) On arranging the words as they occur in the dictionary :
Solon, Solution, Solvency, Solvent
15. (D) On arranging the words as they occur in the dictionary :
Watch, Watchful, Watching, Water

Assigning Artificial Values and Missing Number

In this type of test some artificial values are assigned to old mathematical symbols. The candidates have to change the artificial symbols into old symbols and then they have to calculate the answer.

Example 1.

If + means × , × means –, – means ÷ and ÷ means +, then which of the following answers is the correct value of—

$8 + 4 \times 9 - 3 \div 1$

(A) 41 (B) 29
(C) 9 (D) 30

Answer with Explanation—(D)

Changing these given symbols into old, we get :

$$8 \times 4 - 9 \div 3 + 1$$
$$= 8 \times 4 - 9 \times \frac{1}{3} + 1$$
$$= 32 - 3 + 1 = 30$$

Hence (D) is the correct answer.

Example 2.

Which of the answers would occupy the missing number ?

50	18	32
72	30	42
29	?	14

Scanned by CamScanner

(A) 7 (B) 15
(C) 26 (D) 16

Answer with Explanation—(B) In the first row 18 is obtained by subtracting 32 from 50. Similarly in the second row 30 is obtained by subtracting 42 from 72. Hence, the number to occupy the missing number will be obtained by subtracting 14 from 29. Hence, the correct answer is (B).

Exercise

Directions—In each of the following questions, there are four possible answers. Find the correct answer in each case.

1. If – means multiplication, × means addition, + means division and ÷ means subtraction, then—

   $14 - 10 \times 4 \div 16 + 8$

   is equal to—

   (A) 45/2 (B) 142
   (C) 168 (D) 194

2. If + means ×, – means +, × means ÷ and ÷ means – then what is the value of—

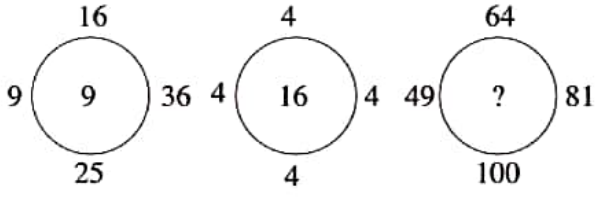
   $9 \times 4 + 2 - 5 \times 10 \div 3$

   (A) 3 (B) 2
   (C) $5\frac{3}{4}$ (D) $-21\frac{1}{3}$

3. If (i) 'A * B' means 'A is the brother of B'
   (ii) 'A • B' means 'A is the daughter of B'
   (iii) 'A Δ B' means 'A is the sister of B.'
   Which of the following shows 'P is the maternal uncle of Q' ?

   (A) P Δ R • Q (B) R * P • Q
   (C) Q • R Δ P (D) Q • R * P

4. In the following question, there are three circles with four numbers outside them. While in the first two circles a number has been filled in the circles according to a rule, in the third circle the mark (?) is given. Which one of the four answers would occupy (?) according to that rule ?



   (A) 44 (B) 54
   (C) 64 (D) 34

5. Find the missing number—

18	7	16
8	3	10
10	4	?

   (A) 9 (B) 11
   (C) 7 (D) 8

6. Which one of the answers would occupy the question mark ?

   If $4 \times 1 = 28$
   $2 \times 3 = 64$
   $1 \times 3 = 62$
   $2 \times 4 = 84$,
   then $4 \times 3 = ?$

   (A) 34 (B) 86
   (C) 48 (D) 68

7. Find out the missing number.

   134 (21) 432
   234 (42) 567
   123 (?) 345

   (A) 24 (B) 22
   (C) 18 (D) 30

8. Which one of the answers would occupy the missing place ?

56	65	74
12	?	30
44	14	44

   (A) 14 (B) 51
   (C) 62 (D) 15

9. Find the missing number—

8	16	8
5	15	10
9	36	?

   (A) 27 (B) 30
   (C) 5 (D) 16

10. If 3 = 6, 4 = 7, 5 = 8, then 6 = ?

   (A) 4 (B) 8
   (C) 9 (D) 6

Scanned by CamScanner

11. If $10 \times 2 = 8$, $14 \times 4 = 10$, then $24 \times 13 = ?$
(A) 10 (B) 11
(C) 8 (D) 7

12. If $8 \times 4 = 42$, $6 \times 6 = 33$, $4 \times 6 = 23$, and $2 \times 4 = 12$ then $2 \times 8 = ?$
(A) 28 (B) 82
(C) 61 (D) 14

13. Insert the correct mathematical signs in the following equation—
13 3 2 1 = 15
(A) $\times \div +$ (B) $\div - \times$
(C) $+ - +$ (D) $\div \times -$

14. If $13 \times 75 = 5731$
$27 \times 34 = 4372$
$15 \times 42 = 2451$
then $16 \times 36 = ?$
(A) 1636 (B) 6361
(C) 576 (D) 3616

15. If $15 \times 71 = 48$,
$92 \times 23 = 55$
$37 \times 44 = 80$
then $54 \times 32 = ?$
(A) 87 (B) 54
(C) 100 (D) 45

16. If + means ×, – means + and × means ÷ find the value of $5 + 4 - 18 \times 3$.
(A) – 34 (B) 6
(C) 26 (D) 15

17. If P denotes ÷, Q dentoes ×, R denotes + and S denotes –, then—
18 Q 12 P 4 R 5 S 6 = ?
(A) 36 (B) 53
(C) 34 (D) 65

Directions—In each of the questions from 3 to 7

> stands for =
< stands for ≠
× stands for >
+ stands for <
= stands for ≯
– stands for ≮

18. If $\alpha \times \beta > \gamma$, it implies that—
(A) $\alpha - \beta = \gamma$ (B) $\alpha > \beta \times \gamma$
(C) $\alpha + \beta \times \gamma$ (D) $\alpha - \beta > \gamma$

19. If $\alpha \times \beta = \gamma$, it does not imply that—
(A) $\alpha > \beta < \gamma$ (B) $\alpha \times \beta > \gamma$
(C) $\alpha + \beta \times \gamma$ (D) $\alpha < \beta \times \gamma$

20. If $\alpha > \beta \times \gamma$, it does not imply that—
(A) $\alpha - \beta > \gamma$ (B) $\alpha < \beta - \gamma$
(C) $\alpha = \beta = \gamma$ (D) $\alpha - \beta - \gamma$

21. If $\alpha \times \beta - \gamma$, it implies that—
(A) $\alpha = \beta \times \gamma$ (B) $\alpha - \beta + \gamma$
(C) $\alpha < \beta + \gamma$ (D) $\alpha < \beta \times \gamma$

22. If $\alpha + \beta - \gamma$, it implies that—
(A) $\alpha = \beta = \gamma$ (B) $\alpha < \beta = \gamma$
(C) $\alpha = \beta - \gamma$ (D) $\alpha \times \beta < \gamma$

Directions—(Q. 23–27) In the following questions, if the given interchanges are made in sings and numbers, which one of the four equations would be correct ?

23. Given interchanges—
Signs + and ÷ and Number 2 and 4.
(A) $2 + 4 \div 3 = 3{\cdot}0$ (B) $4 + 2 \div 6 = 1{\cdot}5$
(C) $4 \div 2 + 3 = 4{\cdot}0$ (D) $2 + 4 \div 6 = 8{\cdot}0$

24. Given interchanges—
Sings – and ÷ and Numbers 4 and 8.
(A) $6 - 8 \div 4 = 1{\cdot}0$ (B) $8 - 6 \div 4 = 1{\cdot}0$
(C) $4 \div 8 - 2 = 6{\cdot}0$ (D) $4 - 8 \div 6 = 2{\cdot}0$

25. Given interchanges—
Signs + and × and Numbers 4 and 5.
(A) $5 \times 4 + 20 = 40$
(B) $5 \times 4 + 20 = 85$
(C) $5 \times 4 + 20 = 104$
(D) $5 \times 4 + 20 = 85$

26. Given interchanges—
Signs + and – and Numbers 4 and 8
(A) $4 \div 8 - 12 = 16$
(B) $4 - 8 + 12 = 0$
(C) $8 \div 4 - 12 = 24$
(D) $8 - 4 \div 12 = 8$

27. Given interchanges—
Signs – and × and Numbers 3 and 6.
(A) $6 - 3 \times 2 = 9$ (B) $3 - 6 \times 8 = 10$
(C) $6 \times 3 - 4 = 15$ (D) $3 \times 6 - 4 = 33$

Directions—(Q. 28–32) In the following questions, which one of the four interchanges in

Scanned by CamScanner

signs and numbers would make the given equation correct—

28. $3 + 5 - 2 = 4$
    (A) + and –, 2 and 3
    (B) + and –, 2 and 5
    (C) + and –, 3 and 5
    (D) None of the above

29. $6 \times 4 + 2 = 16$
    (A) + and ×, 2 and 4
    (B) + and ×, 2 and 6
    (C) + and ×, 4 and 6
    (D) None of the above

30. $(3 \div 4) + 2 = 2$
    (A) + and ÷, 2 and 3
    (B) + and ÷, 2 and 4
    (C) + and ÷, 3 and 4
    (D) No interchange, 3 and 4

31. $4 \times 6 - 2 = 14$
    (A) × to ÷, 2 and 4
    (B) – to ÷, 2 and 6
    (C) – to +, 2 and 6
    (D) × to +, 2 and 6

32. $(6 \div 2) \times 3 = 0$
    (A) ÷ and ×, 2 and 3
    (B) × to –, 2 and 6
    (C) ÷ and ×, 2 and 6
    (D) × to –, 2 and 3

Directions—(Q. 33–37) In the following questions, identify one amongst the four responses which would be a correct inference that can be drawn from given definitions and premises—

Definitions—A means greater than, B means equal to, C means not less than, D means less than, E means not equal to and F means not greater than.

33. **Premises** : (a A 2 b) and (2 b C r)
    (A) a B r (B) a F r
    (C) a A r (D) a D r

34. **Premises** : (x F y) and (x A o)
    (A) y D o (B) y A o
    (C) y F o (D) y B o

35. **Premises** : (2 x E y) and (2 y F 3 z)
    (A) 2 x F 3 y (B) y B 6 x
    (C) y D 3 z (D) 3 z B 3 y

36. **Premises** : (2 a C 3 b) and (3 b B c)
    (A) a C c (B) 2 a D c
    (C) 2 a C c (D) 2 a B 3 c

37. **Premises** : (p F 3 q) and (3 q D 2 r)
    (A) p D 2 r (B) p A 2 r
    (C) p C 2 r (D) p B 2 r

38. If '+' means 'divided by'; '–' means 'multiplied by'; '×' means 'minus' and '÷' means 'plus'; then $8 + 6 - 2 \div 4 \times 4 = ?$
    (A) 12 (B) $\frac{2}{3}$
    (C) $\frac{-52}{9}$ (D) None of these

39. If '–' stands for addition, '+' for multiplication, '÷' for subtraction and '×' for division, which one of the following is wrong ?
    (A) $5 - 2 + 12 \times 6 \div 2 = 27$
    (B) $5 + 2 - 12 \div 6 \times 2 = 13$
    (C) $5 + 2 - 12 \times 6 \div 2 = 10$
    (D) $5 \div 2 + 12 \times 6 - 2 = 3$

40. If ⊓ stands for +
    ⊏ stands for –
    ⊐ stands for ×
    ⊔ stands for ÷
    || stands for =
    → stands for >

    Which one of the following expression is true ?
    (A) (10 ⊓ 2) ⊐ (2 || 2) ← (10 ⊔ 2)
    (B) (20 ⊏ 8) ⊔ (4 ⊏ 1) || (4 ⊓ 1)
    (C) (12 ⊏ 4) ⊐ (5 ⊐ 1) ← (10 ⊓ 20)
    (D) (10 ⊓ 2) ⊔ (2 ⊔ 2) → (10 ⊔ 2)

Answers with Explanation

1. (B) Changing the new symbols into old we get the given expression

$$= 14 \times 10 + 4 - 16 \div 8$$
$$= 14 \times 10 + 4 - \frac{16}{8}$$
$$= 140 + 4 - 2$$
$$= 142$$

Scanned by CamScanner

2. (B) Changing the new symbols into old we get the given expression.

$$= 9 \div 4 \times 2 + 5 \div 10 - 3$$
$$= \frac{9}{4} \times 2 + \frac{5}{10} - 3$$
$$= \frac{9}{2} + \frac{1}{2} - 3$$
$$= 2$$

3. (C) Q • R Δ P means the Q is the daughter of R, and R is the sister of P. Therefore, P is the maternal uncle of Q.

4. (C) The numbers outside and inside are perfect squares.

5. (B) The numbers in the first column are obtain by diminishing 5 from the sum of second and third column.

6. (D) In each group the unit digit is the double of first digit and the tenth digit is the double of the second digit,

As, $8 = 2 \times 4,\ 2 = 2 \times 1$

7. (C) The number in the bracket is equal to sum of the product of figures of left sides and Total of figures of rightside.

As, $21 = (1 \times 3 \times 4) + (4 + 3 + 2)$

8. (B) The numbers of the second row are obtained by subtracting the numbers of third row from the numbers of first row.

9. (A) The numbers in the third column are obtained by subtracting the numbers of first column from the numbers of second column.

10. (C) Second number is more than first number by 3.

11. (B) Here × is used for subtraction.

12. (D) Digits of the number after equal sign are half of the digits of the number before (=) the sign of equal.

13. (C) $13 + 3 - 2 + 1 = 15$

14. (B) The unit and tenth digits in the number of right hand side are the reverse of digits of the first number of the left hand side and the hundredth and thousandth digits are the reverse of second number of the left hand side.

15. (D) $48 = (1 + 5) \times (7 + 1)$

$55 = (9 + 2) \times (2 + 3)$

and $80 = (3 + 7) \times (4 + 4)$

$\therefore\ 54 \times 32 = (5 + 4) \times (3 + 2)$

$= 9 \times 5$

$= 45$

16. (C) $5 + 4 - 18 \times 3 = 5 \times 4 + 18 \div 3$

$= 5 \times 4 + 18 \times \frac{1}{3}$

$= 20 + 6$

$= 26$

17. (B) $18Q12P4R5S6 = 18 \times 12 \div 4 + 5 - 6$

$= 18 \times 12 \times \frac{1}{4} + 5 - 6$

$= 54 + 5 - 6$

$= 53$

18. (D) $\alpha \times \beta > \gamma \Rightarrow \alpha > \beta = \gamma$

$\Rightarrow \alpha > \beta$

and $\alpha > \gamma$

and $\alpha - \beta > \gamma \Rightarrow \alpha \lessdot \beta = \gamma$

19. (C) $\alpha - \beta \times \gamma \Rightarrow \alpha \lessdot \beta > \gamma$

$\Rightarrow \alpha \geq \beta$

and $\beta > \gamma$

But $\alpha + \beta + \gamma \Rightarrow \alpha < \beta > \gamma$

20. (D) $\alpha > \beta \times \gamma \Rightarrow \alpha = \beta > \gamma$

$\Rightarrow \alpha > \gamma$

and $\beta > \gamma$

and $\alpha - \beta - \gamma \Rightarrow \alpha \lessdot \beta \lessdot \gamma$

21. (D) $\alpha \times \beta - \gamma \Rightarrow \alpha > \beta \lessdot \gamma$

and $\alpha < \beta \times \gamma \Rightarrow \alpha + \beta > \gamma$

22. (C) $\alpha + \beta \times \gamma \Rightarrow \alpha < \beta > \gamma$

and $\alpha = \beta - \gamma \Rightarrow \alpha \lessdot \beta < \gamma$

23. (D) $2 + 4 \div 6$

After making the changes, we get

$$4 \div 2 + 6 = 4 \times \frac{1}{2} + 6 = 8$$

24. (C) $4 \div 8 - 2$

After making the changes, we get

$$8 - 2 \div 2 \times 8 - 4 \times \frac{1}{2} = 8 - 2 = 6$$

25. (C) After making the changes in 5 × 4 + 20, we get

$$4 + 5 \times 20 = 4 + 100 = 104$$

26. (B) After making the changes in 4 – 8 + 12, we get

$$8 + 4 - 12 = 0$$

Scanned by CamScanner

27. (B) After making the changes in $3 - 6 \times 8$, we get

$$6 \times 3 - 8 = 18 - 8 = 10$$

28. (C) In $3 + 5 - 2$, if we interchange + and – and 3 and 5,

we get $5 - 3 + 2 = 4$

29. (C) In $6 \times 4 + 2$, if we interchange + and × and 4 and 6

we get $4 + 6 \times 2 = 16$

30. (A) In $(3 \div 4) + 2$, if we interchange + and ÷ and 2 and 3

we get $(2 + 4) \div 3 = 6 \div 3 = 2$

31. (C) In $4 \times 6 - 2$ if we change – to + and interchange 2 and 6

we get $4 \times 2 + 6 = 14$

32. (D) In $(6 \div 2) \times 3$ if we change × to – and interchange 2 and 3

we get $(6 \div 3) - 2 = 6 \times \frac{1}{3} - 2$

$= 2 - 2 = 0$

33. (C) (a A 2 b) and ($2b$ C r)

$\Rightarrow \quad a > 2b$

and $\quad 2b \not< r$

$\Rightarrow \quad a > 2b$

and $\quad 2b \geq r$

$\Rightarrow \quad a > r$

and $\quad a$ A r

$\Rightarrow \quad a > r$

34. (B) (x F y) and (x A o)

$\Rightarrow \quad x \not> y$

and $\quad x > o$

$\Rightarrow \quad x \leq y$

and $\quad x > o$

$\Rightarrow \quad y > o$

and $\quad y$ A $o \Rightarrow y > o$

35. (C) ($2x$ E y) and ($2y$ F $3z$)

$\Rightarrow \quad 2x \neq y$

and $\quad 2y \not> 3z$

$\Rightarrow \quad 2x \neq y$

and $\quad 2y \leq 3z$

$\Rightarrow \quad 2x \neq y$

and $\quad y < 3z$

and $\quad y$ D $3z \Rightarrow y < 3z$

36. (C) ($2a$ C $3b$) and ($3b$ B c)

$\Rightarrow \quad 2a \not< 3b$ and $3b = c$

$\Rightarrow \quad 2a \not< c$

and $\quad 2a$ C $c \Rightarrow 2a \not< c$

37. (A) (p F $3q$) and ($3q$ D $2r$)

$\Rightarrow \quad p \not< 3q$ and $3q < 2r$

$\Rightarrow \quad p \leq 3q$ and $3q < 2r$

$\Rightarrow \quad p < 2r$

and $\quad$ P D $2r \Rightarrow 2 < 2r$

38. (D) After making the proper changes in

$8 + 6 - 2 \div 4 \times 4$

we get $8 \div 6 \times 2 + 4 - 4 = 8 \times \frac{1}{6} \times 2 + 4 - 4$

$= \frac{8}{3} + 4 - 4$

$= \frac{8}{3}$

39. (B) After putting the proper signs,

$5 + 2 - 12 \div 6 \times 2 = 5 \times 2 + 12 - 6 \div 2$

$= 5 \times 2 + 12 - 6 \times \frac{1}{2}$

$= 5 \times 2 + 12 - 3$

$= 10 + 12 - 3$

$= 19$ but not 13

Hence, (B) is wrong.

40. (D) On putting the proper signs in (D), we get

$(10 + 2) \div (2 \div 2) > (10 \div 2)$

Or $(12 \div 1) > 5$

Or $12 > 5$

Matrix Type Test

This is just similar to coding-decoding. In this test coding of the different numbers and letters together is given in two boxes. Either one or two questions is asked from this in the objective exams. The rule of coding-decoding is used to solve it.

The example of the question is as below :

Type - I

Matrix - I

	0	1	2	3	4
0	F	A	N	O	I
1	I	O	F	A	N
2	A	N	O	I	F
3	O	F	I	N	A
4	N	I	A	F	O

Scanned by CamScanner

Matrix - II

	5	6	7	8	9
5	S	E	H	B	T
6	H	S	E	T	B
7	B	T	S	E	H
8	E	H	T	B	S
9	T	S	E	H	B

1. What will be code of NEST ?
   (A) 33, 85, 88, 86 (B) 21, 76, 77, 76
   (C) 14, 67, 66, 67 (D) 02, 56, 55, 59
2. What is the code of FAITH ?
   (A) 43, 42, 41, 98, 89
   (B) 31, 34, 23, 76, 79
   (C) 24, 31, 10, 59, 57
   (D) 12, 20, 40, 68, 65
3. What is the code of FINE ?
   (A) 31, 32, 33, 82 (B) 29, 19, 21, 78
   (C) 12, 10, 13, 67 (D) 00, 04, 02, 56
4. What is the code of HEAT ?
   (A) 79, 53, 20, 87 (B) 65, 56, 13, 57
   (C) 57, 56, 01, 59 (D) 29, 85, 34, 93
5. What is the code of BOTH ?
   (A) 88, 30, 85, 86 (B) 75, 22, 76, 79
   (C) 69, 67, 68, 59 (D) 58, 02, 68, 65

Answers with Explanation—Each letter given in the boxes is coded with the digits kept in the respective row and column. The first digit was taken from the row and secured from the column.

Matrix - I	Matrix - II
F : 00, 12, 24, 31, 43	S : 55, 66, 77, 89, 96
A : 01, 13, 20, 34, 42	E : 56, 67, 78, 85, 97
N : 02, 14, 21, 33, 40	H : 57, 65, 79, 86, 98
O : 09, 11, 22, 30, 44	B : 58, 61, 75, 88, 91
I : 04, 10, 23, 32, 41	T : 59, 68, 76, 87, 95

1. (D) NEST : 02, 56, 55, 59
2. (B) FAITH : 31, 34, 23, 76, 79
3. (D) FINE : 00, 04, 02, 56
4. (C) HEAT : 57, 56, 01, 59
5. (B) BOTH : 75, 22, 76, 79

Type II—Read and study of the following matrix and explain how the word 'HANDS' will be coded ?

(A) 35, 42, 53, 21, 14
(B) 35, 42, 53, 21, 23
(C) 35, 42, 53, 21, 43
(D) 11, 35, 42, 53, 21

	1	2	3	4	5
1	H	N	A	S	D
2	D	R	M	S	A
3	R	M	S	D	H
4	N	A	D	M	H
5	S	A	N	D	H

Answer with Explanation—Very first we find the code of the word 'HANDS'

(A) H = 11, 35, 45, 55
(B) N = 12, 41, 53
(C) D = 15, 21, 34, 43, 54
(D) A = 13, 25, 42, 52
(E) S = 14, 24, 33, 52

Thus the correct code of the word 'HANDS' is 35, 42, 53, 21, 14. Hence, (A) is the correct answer.

Type-3—Study the following marix—

	5	6	7	8	9
5	R	U	A	J	X
6	S	M	B	I	O
7	P	N	C	W	Y
8	L	H	F	T	Q
9	V	K	D	G	E

Now explain, what is the code of 'GENDER' ?

(A) 98, 99, 76, 97, 99, 56.
(B) 98, 99, 76, 97, 98, 55.
(C) 98, 99, 76, 97, 99, 55.
(D) 98, 99, 76, 97, 87, 55.

Answer with explanation—The code of each letter is—

G = 98
E = 99
N = 76
D = 97
R = 55

∴ GENDER = 98, 99, 76, 97, 99, 55

Hence the correct answer is (C).

Scanned by CamScanner

Exercise

Directions—In the following questions a word is made with only a number-groups as it is given in one of following alternatives. The number-groups given in the alternatives are formed by the letters of the two squares, as it is in the following two matrices. The number of row and column is given 0 to 4 and the number for II matrix is given 5 to 9. In these matrices a letter can be coded as giving a digit first from row then from column.

For example, code for A is taken as 13, 20 etc. and for S, 68, 89 etc. Similarly you have to findout a group for a given letter in each question.

Matrix - I

	0	1	2	3	4
0	I	A	C	B	E
1	C	E	I	A	B
2	A	C	I	E	B
3	E	B	A	I	C
4	B	E	C	A	I

Matrix - II

	5	6	7	8	9
5	T	S	H	M	R
6	M	R	T	S	H
7	R	T	M	H	S
8	H	M	S	R	T
9	S	T	R	H	M

1. What is the code for BARE ?
   (A) 12, 41, 67, 41 (B) 03, 20, 75, 41
   (C) 30, 32, 59, 21 (D) 01, 23, 97, 33
2. Give the code for HEAT ?
   (A) 78, 41, 01, 55 (B) 85, 31, 32, 79
   (C) 99, 11, 33, 75 (D) 65, 13, 14, 69
3. What is the code for BEST ?
   (A) 01, 21, 87, 67 (B) 30, 33, 89, 79
   (C) 24, 11, 87, 67 (D) 31, 41, 87, 85

Directions—(Q. 4–8) The questions given below are based on the following matrix. Study the matrix and give answer—

Matix - I

	0	1	2	3	4
0	D	O	B	A	I
1	O	B	A	I	D
2	B	A	I	D	O
3	A	I	D	O	B
4	I	D	O	B	A

Matix - II

	5	6	7	8	9
5	W	N	R	M	L
6	N	R	M	L	W
7	R	M	L	W	N
8	M	L	W	N	R
9	L	W	N	R	M

4. What is the code for 'WARD' ?
   (A) 67, 44, 75, 32 (B) 55, 32, 66, 41
   (C) 68, 30, 57, 25 (D) 78, 12, 89, 14
5. How the word 'NABD' can be written in a code ?
   (A) 97, 21, 43, 33 (B) 66, 44, 34, 14
   (C) 79, 21, 11, 41 (D) 89, 30, 20, 23
6. What is the code for the word 'BLAM' ?
   (A) 34, 68, 21, 58 (B) 35, 77, 44, 76
   (C) 12, 86, 21, 67 (D) 20, 95, 30, 85
7. What is the code for 'WOLB' ?
   (A) 69, 42, 68, 11 (B) 87, 44, 86, 84
   (C) 88, 10, 68, 34 (D) 97, 33, 95, 21
8. How can be written the 'DAWN' in the given code language ?
   (A) 41, 23, 55, 56 (B) 32, 44, 76, 79
   (C) 23, 30, 68, 96 (D) 14, 12, 78, 97

Directions—(Q. 9–10) The following questions are based on the matrices given below. Study the matrices and give the answer—

Matrix - I

	0	1	2	3	4
0	E	A	H	T	S
1	A	T	S	H	E
2	E	S	T	H	A
3	T	H	A	E	S
4	S	T	H	E	A

Scanned by CamScanner

Matrix - II

	5	6	7	8	9
5	I	P	L	K	R
6	K	R	I	L	P
7	I	R	K	L	P
8	K	R	I	P	L
9	R	K	L	P	I

9. What is the code for the word 'RISK' ?
(A) 96, 66, 88, 98 (B) 76, 21, 59, 89
(C) 59, 99, 21, 77 (D) 95, 12, 67, 98

10. Write the code of 'STEP' and choose from the alternatives—
(A) 12, 22, 14, 69 (B) 12, 14, 96, 41
(C) 41, 12, 14, 96 (D) 22, 41, 21, 96

Directions—(Q. 11–15) The numbers are written with a principle in the matrix. Find the such number from four alternatives which is the right code for given words according to the given matrix.

11.

A	6	8	5	4
B	8	7	5	6
C	4	6	8	3
D	5	3	2	4
E	2	4	6	8

What will be the right code of the word 'DAC' ?
(A) 5, 8, 6 (B) 8, 6, 4
(C) 6, 6, 4 (D) 7, 6, 4

12.

A	5	9	8	7
B	8	6	9	7
C	7	4	2	8
D	2	3	8	9

What will be the code of the word 'BAC' ?
(A) 2, 5, 7 (B) 7, 8, 2
(C) 9, 8, 3 (D) 4, 6, 2

13.

K	3	8	9	7
U	6	1	4	8
S	7	6	2	3
N	4	0	8	5

What will be the code of the word 'SUN' ?
(A) 7, 4, 0 (B) 2, 7, 8
(C) 0, 6, 4 (D) 8, 4, 5

14.

A	2	3	4
N	5	6	8
B	4	2	7
D	4	9	8

What will be the code of the word 'BAND' ?
(A) 7, 2, 5, 4 (B) 8, 5, 4, 9
(C) 2, 5, 6, 9 (D) 4, 2, 7, 8

15.

N	9	9	5
U	5	3	9
B	8	6	2
C	1	2	7

What will be the code of 'CUN' ?
(A) 1, 7, 9 (B) 2, 3, 5
(C) 7, 3, 6 (D) 5, 3, 6

Answers with Explanation

For Solution from Question 1–3—

The code of used letters in the word has asked in the question is as following :

B = 03, 14, 24, 31, 40
A = 01, 13, 20, 32, 43
E = 04, 11, 23, 30, 41
H = 57, 69, 78, 85, 98
R = 59, 66, 75, 88, 97
S = 56, 68, 79, 87, 95
T = 55, 67, 76, 89, 96

1. (B) 2. (A) 3. (C)

For Solution form Question 4–8—

The code for used letters in the words has asked in the question is as below—

A = 03, 12, 21, 30, 44
B = 02, 11, 20, 34, 43
D = 00, 14, 23, 32, 41
L = 59, 68, 77, 86, 95
M = 58, 67, 76, 85, 99
N = 56, 65, 79, 88, 97
O = 01, 10, 24, 33, 42
R = 57, 66, 75, 89, 98
W = 55, 69, 78, 87, 96

4. (D) 5. (C) 6. (D) 7. (A) 8. (D)

Scanned by CamScanner

For Solution from Question 9–10—

E = 00, 14, 20, 33, 43

I = 55, 67, 75, 87, 99

K = 58, 65, 77, 85, 96

P = 56, 69, 79, 88, 98

R = 59, 66, 76, 86, 95

S = 04, 12, 21, 34, 40

T = 03, 11, 22, 30, 41

9. (C) 10. (A) 11. (A) 12. (B) 13. (A) 14. (A) 15. (B)

Logic

Logic is the Science of ideas expressed in language. This gives the study of various types of thoughts and helps us to reach to a particular Inference.

First Type

In these type of questions two statements and a conclusion based on statements are given in each question. If the conclusion is correct, the answer is (1) and if incorrect, the answer is (2). If the conclusion is both correct as well as incorrect to some extent, then the answer is (3) and if it has no relation with the given statements the answer is (4).

Example

Statements—(i) No one should have more than three children.

(ii) Dharmendra has more than three children.

Conclusion—Dharmendra is a rich man.

(A) 1 (B) 2

(C) 4 (D) 3

Answer with Explanation—(C) The word 'rich' has got no relation with the given statements.

Exercise 1

Directions—In each of the following questions, two statements are given followed by a conclusion based on them. If the conclusion is correct the answer is (1) and if incorrect, the answer is (2). If the conclusion is both correct as well as incorrect to some extent, then the answer is (3) and if it has no relation with the given statements, the answer is (4).

1. **Statements**—(i) P is standing behind M and N.

   (ii) Q is standing behind P.

   Conclusion—Q is standing behind M.

   (A) 1 (B) 2

   (C) 3 (D) 4

2. **Statements**—(i) All doctors in second world war prepared gun powder from tomatoes.

   (ii) This doctor prepared gun powder from tomato.

   Conclusion—This doctor served in world war II.

   (A) 1 (B) 3

   (C) 4 (D) 2

3. **Statements**—(i) All caves are gold mines.

   (ii) All gold mines are present 200 metres below sea level.

   Conclusion—Any thing which is 200 metres below sea level is a cave.

   (A) 1 (B) 3

   (C) 4 (D) 2

4. **Statements**—(i) As we go upwards, we feel more colder.

   (ii) As we go upwards, the atmospheric pressure decreases.

   Conclusion—Due to the decrease in atmospheric pressure, we feel colder.

   (A) 2 (B) 3

   (C) 1 (D) 4

5. **Statements**—(i) All my classfellows are wearing new shirts today.

   (ii) Ashok is wearing a new shirt today.

   Conclusion—Ashok is my classfellow.

   (A) 1 (B) 2

   (C) 3 (D) 4

6. **Statements**—(i) L is the brother of K.

   (ii) M is the friend of K.

   Conclusion—K is the enemy of M.

   (A) 1 (B) 2

   (C) 3 (D) 4

7. **Statements**—(i) To rise early in the morning is useful for health.

   (ii) Mohan generally rises early in the morning.

Scanned by CamScanner

Conclusion—Mohan is healthy.

(A) 1 (B) 2
(C) 3 (D) 4

8. **Statements**—(i) All horses are trees.
(ii) Some trees are mountains.
Conclusion—All trees are mountains.
(A) 1 (B) 2
(C) 3 (D) 4

9. **Statements**—(i) Economic loss is responsible for the rise of prices.
(ii) Economic loss is essential for the development.
(A) 1 (B) 2
(C) 3 (D) 4

10. **Statements**—(i) Ramesh hates Mohan.
(ii) Mohan hates Rakesh.
Conclusion—Ramesh hates Rakesh.
(A) 1 (B) 2
(C) 3 (D) 4

Second Type

In this type of questions, two statements and four conclusions based on them are given. You have to findout which one of the conclusions is correct.

Example :

Statements—(i) All girls are mothers.
(ii) Some mothers are children.
Conclusions—
(A) All girls are children
(B) All children are mothers
(C) All mothers are girls
(D) None of these

Answer with Explanation—(D) As all girls are mothers and some mothers are children, hence all girls cannot be children. As all girls are mothers but there may be some mothers who are not girls, hence all mothers cannot be girls. As some mothers are children, hence all children cannot be mothers. Thus conclusions (A), (B) and (C) are correct.

Exercise 2

Directions—In each of the following questions two statements followed by four conclusions are given. You have to take these two statements to be true even if they seem to be at variance from commonly fact and decide which one of the given conclusions logically follows from the given statements, disregarding commonly known facts.

1. **Statements**—(i) Bunty is an artist.
(ii) Artists are beautiful.
Conclusion—
(A) All beautiful people are artists.
(B) Bunty is beautiful.
(C) All beautiful people are not artists.
(D) Bunty is not beautiful.

2. **Statements**—(i) Few roots are trees.
(ii) Few roots are fruits.
Conclusions—
(A) All the roots, which are not trees, are fruits.
(B) All the roots, which are not fruits, are trees.
(C) Few roos are such which are neither trees nor fruits.
(D) Few trees are fruits.

3. **Statements**—(i) Few circles are figures.
(ii) Few circles are squares.
Conclusions—
(A) All the circles are either figures or squares.
(B) Few figures are squares.
(C) All the figures are squares.
(D) Few circles are neither figures nor squares.

4. **Statements**—(i) All teachers are fathers.
(ii) All boys are teachers.
Conclusions—
(A) Few teachers are boys.
(B) No boy is father.
(C) All boys are fathers.
(D) Few fathers are boys.

5. **Statements**—(i) All cycles are two wheeled vehicles.
(ii) Few two wheeled vehicles are cars.
Conclusions—
(A) All cycles are cars.
(B) All cars are not cycles.
(C) All two wheeled vehicles are cycles.
(D) Few cars are cycles.

Scanned by CamScanner

6. **Statements**—(i) All logs are ships.
(ii) All ships are boats.
Conclusions—
(A) Few ships are logs.
(B) No log is boat.
(C) Few boats are logs.
(D) All logs are boats.

7. **Statements**—(i) All children are chairs.
(ii) All cats are children.
Conclusions—
(A) Some children are cats.
(B) No cat is chair.
(C) All cats are chairs.
(D) Some chairs are cats.

8. **Statements**—(i) Plants generate a huge amount of oxygen for breathing for the living organisers.
(ii) Oxygen is very essential for human beings.
Conclusions—
(A) Oxygen is generated by plants only.
(B) Plants are helpful for human beings.
(C) Only oxygen is generated by plants.
(D) Only oxygen is essential for human beings.

9. **Statements**—(i) Nobody is safe to live in the air polluted environment.
(ii) Plants check the air pollution.
Conclusion—
(A) Plants are helpful to keep safe the life of a person.
(B) There is no other mean except plants for checking the air pollution.
(C) There are many means other than plants for checking the air pollution.
(D) Air pollution is slightly checked by the plants.

10. **Statements**—(i) Now-a-days people do not like to live in big cities.
(ii) Calcutta is a big city.
Conclusion—
(A) Now-a-days people like to live in small portion of Calcutta.
(B) Calcutta is liked by a few people of the World.
(C) Now-a-days people like to live in small cities.
(D) Now-a-days people like only to trade in Calcutta.

Third Type

In this type of questions two statements followed by an inference are given. The candidates have to examine the inference in the light of the statements and decide upon its degree of truth.

Example :

Statements—
(i) Vitamin A is useful to eye.
(ii) Vitamin A is contained in carrot.

Inference—
Therefore, carrot is useful to eye.
(A) True (B) False
(C) Probably true (D) Probably false
(E) Irrelevant

Answer with Explanation—(A) From carrot, vitamin A is obtained and vitamin A is useful to eye. Hence carrot will be useful to eye. Therefore, the inference is true.

Exercise 3

Directions—In each of the following questions two statements followed by an inference are given. You have to take these statements to be true even if they seem to be at variance from commonly fact and decide the degree of truth of the inference.

1. **Statements**—(i) Wind blows fast.
(ii) The horse runs fast.
Inference—Therefore, wind is horse.
(A) True (B) False
(C) Probably true (D) Probably false
(E) Irrelevant

2. **Statements**—(i) I know a clerk of Agra Nagar Mahapalika.
(ii) He is of bad nature.
Inference—Therefore, all clerks are of bad nature.
(A) True (B) False
(C) Probably true (D) Probably false
(E) Irrelevant

3. **Statements**—(i) Kerosene oil is immiscible with water.

Scanned by CamScanner

(ii) A liquid contained in the bottle is also immiscible with water.

Inference—Therefore, the liquid of this bottle is kerosene oil.

(A) True (B) False
(C) Probably true (D) Probably false
(E) Irrelevant

4. **Statements**—(i) Lucia is seamstress.

(ii) Seamstresses make dresses.

Inference—Therefore, Lucia makes dresses.

(A) True (B) False
(C) Probably true (D) Probably false
(E) Irrelevant

5. **Statements**—(i) Radio singers have sweet voices.

(ii) Kamla does not have sweet voice.

Inference—Therefore, no girls have sweet voices.

(A) True (B) False
(C) Probably true (D) Probably false
(E) Irrelevant

6. **Statements**—(i) Most of the students of our class are wearing uniform of blue colour.

(ii) Santosh is not wearing any uniform.

Inference—Therefore, Santosh belongs to our class.

(A) True (B) False
(C) Probably true (D) Probably false
(E) Irrelevant

7. **Statements**—(i) Acetylene is a gas.

(ii) This cylinder contains gases.

Inference—Therefore, this cylinder contains acetylene.

(A) True (B) False
(C) Probably true (D) Probably false
(E) Irrelevant

8. **Statements**—(i) My hand touches the chair.

(ii) The chair touches the floor.

Inference—Therefore, my hand touches the floor.

(A) True (B) False
(C) Probably true (D) Probably false
(E) Irrelevant

9. **Statements**—(i) All tables are counters.

(ii) All counters are cages.

Inference—Therefore, all tables are cages.

(A) True (B) False
(C) Probably true (D) Probably false
(E) Irrelevant

10. **Statements**—(i) Wine makes Rajesh come out in a rash.

(ii) Bunty does want to come out in a rash.

Inference—Therefore, Bunty must not drink wine.

(A) True (B) False
(C) Probably true (D) Probably false
(E) Irrelevant

Answers with Explanation

Exercise 1

1. (A) Since P is standing behind M and N and Q is behind P. Therefore, it is clear that Q will be behind M.
2. (B) 3. (D) 4. (C) 5. (C)
6. (D) The word enemy has no relation with the given statements.
7. (C)
8. (B) From the statement (ii) some trees are mountains. Therefore, 'All the trees are mountains' is incorrect.
9. (A) 10. (C)

Exercise 2

1. (B) Bunty is an artist and all the artists are beautiful, hence Bunty should be beautiful.
2. (C) Since some roots are trees and some roots are fruits. Therefore, some roots may be such which are neither trees nor fruits.
3. (D) Since some circles are figures and some circles are squares. Therefore, some circles may be such which are neither squares nor figures.
4. (C) Since all the boys are teachers and all the teachers are fathers. Therefore, all the boys are fathers.
5. (B) Since all the cycles are two wheeled vehicles but some two wheeled vehicles are cars. Therefore, all cars can never be cycles.
6. (D) Since all the logs are ships and all the ships are boats. Therefore, all the logs will be boats.
7. (C) Since all the cats are children and all the children are chairs. Therefore, all the cats will definitely be chairs.
8. (B) 9. (A) 10. (C)

Scanned by CamScanner

Exercise 3

1. (E)	2. (B)	3. (C)	4. (A)	5. (E)
6. (D)	7. (C)	8. (E)	9. (A)	10. (C)

Problems on Alphabet

In this type of test, the knowledge of the students about the alphabet is tested. The following examples will illustrate the idea.

Example 1—If on rearranging the jumbled spellings of the word 'SARBS' a metal is obtained. What will be the first letter of the word ?

(A) A (B) R
(C) S (D) B

Answer with Explanation—(D) On rearranging the jumbled spellings, a word 'BRASS' is obtained. This is metal and its first letter is 'B'.

Example 2—If the following alphabet were written in reverse order, which will be third letter to the right of the sixteenth letter from the left ?
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

(A) I (B) H
(C) J (D) E

Answer with Explanation—(B) When the alphabet will be written in reverse order the sixteenth letter from the left will be 'K' and the third letter to the right of 'K' will be 'H'.

Example 3—If in the word 'DOUBLE', there are two such letters which are as many letters apart as they are in alphabet, what is the last letter out of those two ?

(A) O (B) L
(C) E (D) B

Answer with Explanation—(A) There are two letters U and B between O and L and there are also two letters M and N between O and L in the alphabet. Hence, the required letters are O and L out of which O is the last letter.

Exercise

Directions—In each of the following questions there are four possible answers. Find out the correct one.

1. If with the third, fourth and eleventh letters of the word, 'CONTROVERSIAL', one meaningful word may be formed, the answer is its first letter. If more than one word may be formed the answer is M and if no meaningful word is formed the answer is X.
   (A) M (B) I
   (C) T (D) X
2. If on rearranging the jumbled spellings of the word, 'MILTA' an Indian language is obtained, 'What is the last letter of the word ?
   (A) M (B) I
   (C) T (D) L
3. If the following alphabet were written in reverse order, which will be seventh letter from the right of the 12th letter from the left
   A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
   (A) F (B) H
   (C) G (D) S
4. If on rearranging the jumbled spellings of the word. 'NEOGRA' a colour is obtained. What is the last letter of rearranged word ?
   (A) O (B) G
   (C) E (D) R
5. The spellings of the words 'FILE' and 'THEDA' are in disorder. If they are arranged, we get two words which are opposite to each other in meaning. What are the last letters of those two rearranged words ?
   (A) F, E (B) E, H
   (C) L, H (D) L, D
6. Arrange the spellings of the word TACLRAENOCIE to get a meaningful word related to 'Speed' and then what is the first letter of the word so formed ?
   (A) O (B) N
   (C) C (D) A
7. By rearranging the jumbled spellings of the word 'UBEAUTFIL' make a meaningful word and then find its middle letter.
   (A) E (B) I
   (C) T (D) L
8. Which one of the following words will be latest in the telephone directory ?
   (A) Shashidharan (B) Sasidharan
   (C) Shasidhran (D) Shashidaran
9. What letter from the word 'FRIEND' may be removed so that the word so formed may be opposite in meaning to the given word ?

Scanned by CamScanner

(A) R (B) I
(C) E (D) N

10. Two out of the following words have the same meaning which one out of the remaining two will be the latest in the dictionary ?
(A) Approval (B) Assent
(C) Exorbitant (D) Excellent

11. The difference of how many letters is in the positions of Z in the word 'EMPHASIZE' and alphabet ?
(A) 12 (B) 18
(C) 16 (D) 15

12. If the first four letters of the word 'REHABILITATION' are written in reverse order then next four letters are written in reverse order then again next four letters are written in reverse order, what will be the 11th letter of the word so formed from the left ?
(A) K (B) I
(C) N (D) A

13. If the first and third letters of the word 'DISTRIBUTION' are inter-changed, then second and foruth letters are inchanged and then fifth and seventh letters are also interchanged, what will be seventh letter of the word so formed, from the left ?
(A) U (B) I
(C) R (D) T

14. If the words INTIMATION, INFORMATION, INTEREST, INTERROGATION and INSTIGATION are arranged according to dictionary, what will be the fourth letter of the last word ?
(A) O (B) I
(C) R (D) T

15. Which word of the following will be second according to dictionary ?
(A) CROAK (B) CRORE
(C) CROSS (D) CROCK

16. If with the third, fourth, fifth, seventh and tenth letters of the word 'PERSONALITY' any meaningful word is formed, the answer is its first letter otherwise X.
(A) O (B) S
(C) R (D) X

17. If the letters of the word 'NEINODRCE' are so arranged that a meaningful word is formed which is related to a system, what is the last letter of the word so formed ?
(A) R (B) E
(C) D (D) O

18. If the letters of the following words are arranged in proper way a name of an Indian queen is obtained. What is that word ?
(A) UNAHAJNR (B) SNAHAJER
(C) TNAHAJNR (D) BCNETAND

19. The following words are in disorder. If they are arranged in proper way, a correct meaningful sentence is formed. What is last word of the sentence ?
a boy lovely is Bunty ?
(A) lovely (B) Bunty
(C) boy (D) is

20. If 'O' represents 'OFTEN' then which of the following words is represented by 'W' ?
(A) WATER (B) WALK
(C) WISER (D) WOMAN

21. In the word 'PROPORTION' how many such pairs of letters are there that they are as many letters apart as they are in alphabet in reverse order ?
(A) One (B) Two
(C) Three (D) More than three

22. If in the word 'PROSPEROUS' there is one such letter which is not repeated the answer is that letter. If there are more than one such letter, the answer is M and if there is no such letter, the answer is X.
(A) E (B) R
(C) M (D) X

23. The first and third letters of the word 'CONGREGATION' are interchanged. In the same way second and fourth, fifth and seventh and so on are interchanged. What letter will be on the 8th place from the left ?
(A) R (B) E
(C) G (D) T

24. Write the folowing alphabet in reverse order, then from the left starting from the second, remove every second letter. What will be the eighth letter from the left in the remaining series ?
A B C D E F G H I J K L MN O P Q R S T U V W X Y Z

Scanned by CamScanner

(A) L (B) H
(C) J (D) K

25. The letters of the word PSOEMDANH are in disorder and one letter is extra in it. If the extra letter is removed and the remaining letters are arranged properly a word is obtained which is equivalent to beautiful. What is the last letter of the word formed ?
(A) H (B) S
(C) E (D) M

Answers with Explanation

1. (A) The third, fourth and 11th letters of the word 'CONTROVERSIAL' are N, T and I respectively. With these letters two meaningful words 'NIT' and 'TIN' may be formed.
2. (D) By rearranging the jumbled spellings, we get 'TAMIL' which is an Indian language and whose last letter is 'L'.
3. (B) When the alphabet will be written in reverse order, the 12th letter from the left is 'O' and seventh letter from the right of 'O' is 'H'.
4. (C) By rearranging the jumbled spellings, we get 'ORANGE' Which is a colour and whose last letter is 'E'.
5. (B) If the words FILE and THEDA are rearranged to get two opposite words, we get LIFE and DEATH and the last letters of these two words are E and H.
6. (D) By rearranging we get a meaningful word 'ACCELERATION' which is related to speed and its first letter is 'A'.
7. (C) By rearranging we get a meaningful word, 'BEAUTIFUL'. The middle letter is 'T'.
8. (C)
9. (A) If the letter 'R' is removed from the word 'FRIEND' the word so formed is 'FIEND' the meaning of which is 'an extremely wicked person.
10. (C) Approval and Assent have the same meaning. In the remaining two 'Exorbitant' will be the latest in the dictionary.
11. (B) 'Z' in 'emphasize' is at 8th place while in alphabet its place 26th. Hence, difference in two positions is 18.
12. (D) According the conditions the word 'REHABILITATION' will be changed into the word 'AHERILIBITATION'. The 11th letter of this new word is 'A'.
13. (C) When the first and third, second and fourth, fifth and seventh letters of the word 'DISTRIBUTION' are interchanged, the word so formed is STDIBIRUTION and its seventh letter from the left is 'R'.
14. (B) According to dictionary the last word will be 'INTIMATION' whose fourth letter from the left will be 'I'.
15. (D)
16. (C) The third, fourth, fifth, seventh and tenth letters of the word PERSONALITY are R, S, O, A and T. The meaningful word with these letters is 'ROAST' whose first letter is 'R'.
17. (B) The meaningful word is 'ENDOCRINE' whose last letter is 'E'.
18. (A) The name of the Indian queen is NURJAHAN.
19. (C) The correct is like this : Bunty is a lovely boy.
20. (B) As in 'OFTEN' one letter 'T' is silent, in the same way in the word 'WALK' one letter 'L' is silent.
21. (D) There are four such pairs *i.e.* OP, ON, PR and RO.
22. (C) There are two letters which are not repeated in the word 'PROSPEROUS' and those two letters are E and 'U'.
23. (B) If the first and third, second and fourth, fifth and seventh, sixth and 8th, 9th and 11th and 10th and 12th letters of the word 'CONGREGATION' are interchanged, the new word so formed is 'NGCOGAREONTI'. The 8th letter from the left is 'E'.
24. (D) By writing the alphabet in reverse order, the second letter is 'Y'. Now starting from 'Y' and removing the every second letter, we get the remaining series as

    'Y W U S Q O M K I G E C A'

    The 8th letter of this series from the left is 'K'.
25. (C) If the letter 'P' is removed and the remaining letters are arranged properly we get a word 'HANDSOME' the last letter of which is 'E'.

Scanned by CamScanner

Questions on Calendar and Clock

This type of test is meant to test the ability of a candidate about the correct sequence of the days of a week, calendar month etc. and the knowledge of time and the hands of a clock.

Some points to be remembered about calendar and clock.

1. A year divisible by 4 is a leap year.
2. In the case of century, a leap year is that which is divisible by 400. For example 1800 is not divisible by 400. Hence it is not a leap year.
3. The minute hand is also called long hand while hour hand is called as the short hand.
4. In every one hour, the minute hand gains 55 minutes on the hour hand.
5. The minute hand moves through 6° in each minute while the hour hand moves 1/2° in each minute.

Example 1. If 8th of a month falls three days after Sunday, on what day will 17th of the month fall ?

(A) Thursday (B) Wednesday
(C) Friday (D) Saturday

Answer with Explanation—(C) Since 8th of the month falls on the third days after Sunday *i.e.* on Wednesday. Hence the next Wednesday would fall after seven days of 8th *i.e.* on 15th of the month. Therefore, on 17th of the month would fall Friday. So the correct answer is (C).

Example 2. At what angle the hands of a clock are inclined when it is half past 8 ?

(A) 85° (B) 75°
(C) 80° (D) 60°

Answer with Explanation—(B) At half past 8th minute hand points towards 6 and the hour hand points towards $2\frac{1}{2}$ marks between 8 and 9. The angle between 6 and 8 is 60° and the angle of $2\frac{1}{2}$ minute space is $2\frac{1}{2} \times 6$ *i.e.* 15°. So the total angle between the two hands = 60° + 15° = 75°. Therefore, the correct answer is (B).

Exercise

Directions—In each of the following questions there are four possible answers which are given below. One of the answers is correct. Find out the correct answer.

1. Which one of the following years is a leap year ?
   (A) 1982 (B) 1954
   (C) 1704 (D) 1978
2. Which one of the following year is not a leap year ?
   (A) 2000 (B) 1200
   (C) 800 (D) 700
3. At what time between 5 and 6 will the hands of a clock coincide ?
   (A) $32\frac{3}{11}$ min. Past 5
   (B) $23\frac{8}{11}$ min. Past 5
   (C) $17\frac{3}{11}$ min. Past 5
   (D) $27\frac{3}{11}$ min. Past 5
4. If 4th Sept. 1987 falls on Sunday, what day will fall on 31st Dec. 1987 ?
   (A) Monday (B) Tuesday
   (C) Saturday (D) Friday
5. At what time between 9 and 10 will the hands of a watch point in opposite direction ?
   (A) $16\frac{4}{11}$ min. Past 9
   (B) $15\frac{4}{11}$ min. Past 9
   (C) $14\frac{4}{11}$ min. Past 9
   (D) $17\frac{4}{11}$ min. Past 9
6. Mohan was born on February 29th in the year 1960. How many birthdays will be celebrated upto 29 February 1976 ?
   (A) 16 (B) 8
   (C) 10 (D) 4
7. If fifth of the month falls on two days after Monday, what day of the week will be the 19th of the month ?
   (A) Tuesday (B) Thursday
   (C) Wednesday (D) Monday

Scanned by CamScanner

8. A child was born on Friday 1st Oct. in a certain year. His age on Wednesday 1st Oct. 1980 was—

(A) 2 years (B) 4 years
(C) 7 years (D) 6 years

9. The time by my watch is three. If the hour hand points to the East, to which direction does the minute hand point ?

(A) North (B) South
(C) West (D) None of these

10. A watch reads 4·30. If the minute hand points towards East, in what direction would the hour hand point ?

(A) North (B) South-East
(C) North-East (D) South-West

11. Purshottam was born on 3rd March 1960. Rajesh was born 6 days before Purshottam. If the Republic day of that year fell on Sunday, which day was Purshottam's birthday ?

(A) Friday (B) Wednesday
(C) Thursday (D) Monday

12. If after 3 days of tomorrow is Friday, what day was three days before yesterday ?

(A) Friday (B) Monday
(C) Sunday (D) Thursday

13. Day after tomorrow is 'Ahoi-ashtami' The same day next week falls 'Deepawali'. If today is Sunday what will be the day four days after Deepawali ?

(A) Thursday (B) Saturday
(C) Friday (D) None of these

14. Suresh is 314 days elder than Rajendra while Kamla is 70 weeks elder than Suresh. If Kamla was born on Wednesday, on what day was Rajendra born ?

(A) Monday (B) Tuesday
(C) Thursday (D) Friday

15. Arriving at Fatehpur Sikri Anand said that he was three days earlier than the time of appointment. Umesh was 4 days later than the day of appointment. If Anand reached Fatehpur Sikri on Friday, on what day did Umesh reach there ?

(A) Thursday (B) Saturday
(C) Sunday (D) Friday

16. If the day after tomorrow is X-mas day. if today is Sunday what will be the day on the first of the coming New year ?

(A) Monday (B) Sunday
(C) Tuesday (D) Saturday

17. How many times from 4 p.m. to 10 p.m. the hands are at right angles ?

(A) 9 (B) 12
(C) 10 (D) 6

18. How many times from 8 a.m. to 8 p.m. the hands will be in opposite directions ?

(A) 12 (B) 8
(C) 16 (D) None of these

19. Two watches, one of which gained at the rate of 1 min. and the other lost at the rate of 1 min-daily, were set correctly at noon on the first January 1988. When will the watches indicate the same time ?

(A) Dec. 27, 1988 noon
(B) Dec. 27, 1988, midnight
(C) Dec. 26, 1988 noon
(D) Dec. 25, 1988 noon

20. If March 17, 1980 falls on Monday. On what day would July 13th, 1980 fall ?

(A) Thursday (B) Sunday
(C) Saturday (D) Monday

Answers with Explanation

1. (C) As 1704 is only the year which is divisible by 4.

2. (D) As 700 is not divisible by 400, so 700 is not a leap year.

3. (D) At 5 O'clock the hands are 25 min. apart. Therefore, in order to coincide the min. hand must gain 25 minutes.

$\because$ 55 min. are gained in 60 minutes

$\therefore$ 25 min. will be gained in 60 minutes

$$= \frac{60 \times 25}{55} = 27\frac{3}{11}$$

Hence the hands of the clock will coincide at $27\frac{3}{11}$ minutes past 5.

4. (C) No. of days from 4th Sept. 1987 to 31st Dec. 1987.

$$= 26 + 31 + 30 + 31 = 118$$
$$= 118$$

Scanned by CamScanner

If 118 is divided by 7 we get 6 as remainder.

∴ On 31st Dec. 1987, it will be 6 days after Sunday *i.e.* Saturday.

5. (A) At 9 O'clock the hands are 45 min. apart. They will be opposite to each other when there is a space of 30 min. between them. This will happen when the min. hand gains 15 min. But the min. hand gains 15 min. space in $\frac{15 \times 60}{55}$ *i.e.* $16\frac{4}{11}$ minutes. Hence the hands are opposite to each other at $16\frac{4}{11}$ min. past 9.

6. (D) On attaining the age of four years, one birthday is celebrated because 29th Feb. will come once in 4 years. Therefore, on the completion of 16 years, 4 birthdays would have been celebrated.

7. (C) Since 5th of the month is Wednesday, therefore, 12th and 19th of the month will also be Wednesday.

8. (B) The no. of days from Friday to Wednesday is 5. The no. of days of 4 years = 365 + 365 + 365 + 366 *i.e.* 1461. If 1461 is divided by 7, the remainder will be 5. Hence in 4 years, the diffence of 5 days *i.e.* from Friday to Wednesday is observed.

9. (A) At 3 O'clock the angle between the hands is 90°. If the hour hand points towards East then min. hand will point towards North.

10. (C) At 4·30 the angle between the hands is 45°. If the minute hand points East, the hour hand would point at 45° towards the North of East.

11. (B) Rajesh was born 6 days before Purshottam. Hence Rajesh was born on 26th February, 1960. This year the Republic day *i.e.* 26th january fell on Sunday which 5 + 26 *i.e.* 31 days before Rajesh's birthday. Since on dividing 31 by 7, we get 3 as remainder. Hence, the birthday of Rajesh would fall after 3 days of Sunday *i.e.* on Wednesday.

12. (D) As after 3 days of tomorrow is Friday, so today should be Monday. Hence on 3 days before yesterday should be Thursday.

13. (B) Today is Sunday. Hence on day after tomorrow it will be Tuesday. So Deepawali will be on Tuesday and after four days of Deepawali it will be Saturday.

14. (B) Difference in the ages of Kamla and Rajendra

$$= 70 \times 7 + 314$$

$$= 804 \text{ days}$$

Now, on dividing 804 by 7, we get 6 as remainder. So after 6 days of Wednesday it will be Tuesday.

15. (D) As it was Friday on three days before the day of appointment, so the day of appointment would be on Monday. Hence four days after Monday it would be Friday.

16. (C) As X-mas day is always on 25 December, hence today should be 23rd December. It is Sunday on 23rd December. Therefore, on 30th December it should be Sunday and on the first of coming New year *i.e.* on 1st January it should be Tuesday.

17. (B) In every hour the hands are twice at right angles.

18. (A) In every hour the hands are once in opposite directions.

19. (C) The first watch gains on the second watch 1 + 1 *i.e.* 2 minutes in a day.

The watches will indicate the same time. When the one has gained 12 hours on the other.

As 2 min. are gained in 1 day.

∴ 12 hours are gained in

$$1/2 \times 12 \times 60 = 360 \text{ days}$$

Counting, 360 days from 1st January 1988, we get Dec. 26, 1988.

20. (B) No. of days from 17th March, 1980 to July 13th 1980 = 118 = 16 weeks and 6 day

Hence after 6 days of Monday, it will be Sunday.

Venn Diagram Type Test

In this type of test either chart is made, or given and according to the question, figures are inserted in the chart. Then by looking into the charts, the questions asked are easily known. Following illustrations will clarify the idea clearly.

Scanned by CamScanner

Example 1. Mohan and Ramaswami play hockey and football. Edward and Ramaswami play football and cricket. Mohan and Rafiq play tennis and hockey. Rafiq and Edward play cricket and tennis. Name the boy who plays tennis, football and cricket.

(A) Mohan (B) Ramaswami

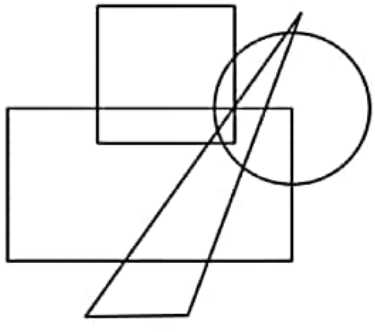
(C) Edward (D) Rafiq

Answer with Explanation—(C) For this first of all prepare the following chart :

	Hockey	Football	Cricket	Tennis
Mohan	√	√		√
Ramaswami	√	√	√	
Edward		√	√	√
Rafiq	√		√	√

It is clear from above chart that only Edward plays tennis, football and cricket.

Example 2. In the following diagram the rectangle stands for illiterate, the square stands for employed, the triangle stands for farmers and the circle stands for the backwards. Study the diagram and find which of the following statements is not true.



(A) Some farmers who are neither backward nor unemployed are literate.

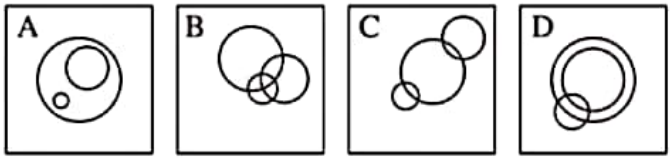
(B) Some farmers who are employed are literate and backward

(C) Some farmers who are unemployed are literate but backward

(D) Some backward persons who are employed, are literate but not farmers.

Answer with Explanation—(A) Since no portion of the triangle is out of the rectangle and the circle but in the square and triangle stands for the farmers, therefore, it is clear that no farmers who are neither backward nor unemployed are literate. Hence (A) is the correct answer.

Example 3. Choose from the four diagrams marked A, B, C and D the one which represents the relationship most similar to Athletes, students and girls.



(A) A (B) B

(C) C (D) D

Answer with Explanation—(B) Some students may be athletes as well as girls. Some girls also may be athletes as well as students and some athletes may be students as well as girls. Hence, the answer (B) is correct.

Dice Type Test (Cube Type Test)

In this type of test a dice or cube (remarking some faces with either the colours or letters / numbers) is given and some of those faces are left blank. In the question it is asked you, which letter/number or what colour will be on the blank face.

(i) Cube, cuboid and dice all have six faces.

(ii) The length, breadth and height of a cube are equal.

(iii) The no of unit cubes in a given cube

$$= (\text{side})^3$$

and the no. of unit cubes in a given cuboid.

$$= (l \times b \times h)$$

It is to be asked you to find the letter/number or colour in the questions related to dice. Three faces of dice are shown in the figure and three faces are kept hidden. According to these three faces you have to find your answer.

Learn the following points always to solve the problem based on the dices.

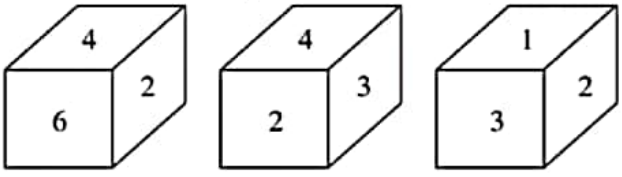
(i) As you know a dice has six faces.

(ii) Opposite faces can never be adjacent or neighbour to each other.

(iii) If three dices are shown together and you are asked to find the letter/number on the opposite face of given face with a letter / number then take help of those three dices.

Scanned by CamScanner

Example 1. Three positions of a dice are shown below. Which number will be on the opposite side of the digit 1 ?



(I) (II) (III)

(A) 4 (B) 5

(C) 6 (D) 3

Answer with Explanation :

(i) Digit 1 is shown in the dice III.

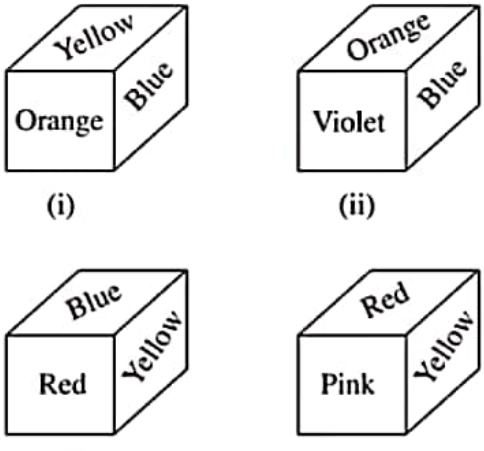
(ii) Digits 2 and 3 will never be on the opposite face of 1. because 2 and 3 are kept on adjacent faces.

(iii) Leaving the digits 2 and 3, 6 has appeared only once, 4 has appeared twice. Other digits are not shown.

(iv) From dice II, it is clear that 4 will never be on the opposite face of either 2 or 3.

∴ Digit 1 and 4 will be on the opposite faces. Therefore, the answer (A) is correct.

Example 2. Which one colour of the following is opposite of yellow ?



(i) (ii)

(iii) (iv)

(A) Violet (B) Red

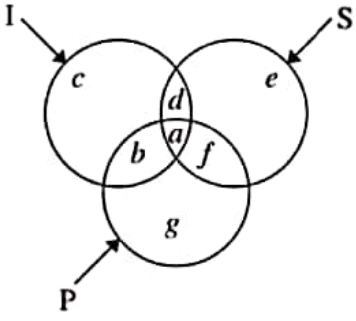
(C) Pink (D) Blue

Answer with Explanation : The faces which are near to yellow will never be its opposite. Yellow is appearing in (i), (iii) and (iv). Thus the colours which are not to opposite of yellow are orange, blue, red pink. Hence, only one colour is left that is violet this will be opposite to yellow colour.

∴ The answer (A) is correct.

Exercise

Directions—In the following diagram there are three interlocking circles, I, S and P where circle I stands for Indians, S for Scientists and P for Politicians. Different regions of the figure are lettered from a to *g*. Read the statement of each question from 1 to 5 and write the letter of the region related to the statement.



1. Region which represents Indians who are Politicians but not Scientists ?

(A) f (B) a

(C) b (D) g

2. Region which represents Scientists who are Indian but not Politicians ?

(A) d (B) c

(C) f (D) f

3. Region which represents Non Indian, Scientists who are Politicians ?

(A) d (B) c

(C) b (D) f

4. Region which represents Indians but are neither Scientists nor Politicians ?

(A) e (B) f

(C) c (D) a

5. Region which represents Indians, Scientists as well as Politicians ?

(A) c (B) a

(C) f (D) b

Directions—Questions from 6 to 9 are based on the following statements. A, B and C are intelligent. A, D and E are hard-workers. D, C and E are honest. A, B and E are ambitious.

6. Which one of the following is intelligent, hard-worker and ambitious but not honest ?

(A) E (B) C

(C) D (D) A

Scanned by CamScanner

7. Which one of the following is neither ambitious nor hard-worker ?
(A) A (B) B
(C) C (D) D

8. Which one of the following is ambitious but neither honest nor hard-worker ?
(A) A (B) B
(C) C (D) E

9. Which one of the following is ambitious but not intelligent ?
(A) E (B) D
(C) B (D) A

Directions—(Q. 10–14) Read the following statements carefully and answer the questions.

Statement—Branches of the five nationalised Banks A, B, C, D and E are given below—

1. A, B, and C are in Indore and Bhopal.
2. A, B, and E are in Indore and Gwalior.
3. B, C, and D are in Raipur and Bhopal.
4. A, E and D are in Gwalior and Jabalpur.
5. C, E and D are in Raipur and Jabalpur.

10. Branch of which Bank is in Indore but not in Raipur ?
(A) E (B) B
(C) A (D) C

11. Branch of which bank is not in Indore ?
(A) C (B) D
(C) E (D) B

12. Branch of which bank is in Raipur and in Indore but not in Bhopal ?
(A) D (B) A
(C) B (D) E

13. Which Bank is that whose branch is in all the towns mentioned above except Gwalior ?
(A) A (B) B
(C) C (D) D

14. In which one of the towns there is no branch of the bank B ?
(A) Indore (B) Jabalpur
(C) Gwalior (D) Bhopal

Directions—(Q. 15–19) Read the following statements carefully and answer the questions.

Statement—In a function A, B, C, D and E are sitting around a circular table. Out of these there is a doctor, a professor and a businessman. The businessman is sitting between D, the wife of the professor and the professor. A is the doctor and E his wife. E is the sister of B. The professor is sitting at the right of C but at the left of the doctor. Both the ladies are not in any profession.

15. In this group who is unmarried ?
(A) Doctor (B) Businessman
(C) Professor (D) None of these

16. Who is the professor ?
(A) C (B) D
(C) B (D) E

17. Who is A to B ?
(A) Father-in-law (B) Brother-in-law
(C) Brother (D) Friend

18. Who is sitting at the right hand side of A ?
(A) Wife of A (B) Wife of B
(C) Wife of C (D) B

19. In this group who is the man whose wife is not sitting with him ?
(A) A (B) E
(C) B (D) D

Directions—(Q. 20–24) Use the following informations to answer the questions.

There is a group of five people A, B, C, D and E. Out of them there is a Badminton player, a Chess player and a Tennis player. A and D are unmarried ladies who do not take part in any game. No ladies play either Chess or Badminton. In this group there is a married couple in which E is the husband. B is the brother of C and he plays neither Chess nor Tennis.

20. Who is the Chess player ?
(A) B (B) E
(C) C (D) None of these

21. Who is the wife of E ?
(A) A (B) B
(C) D (D) C

22. Who is the player of Badminton ?
(A) E (B) C
(C) B (D) None of these

23. In which of the following groups, there are all the three ladies ?

Scanned by CamScanner

(A) A, B, C (B) A, C, D
(C) B, C, D (D) D, E, A

24. What is the relationship between B and E ?
(A) B is the cousin of E.
(B) B is the brother of E.
(C) B is the friend of E.
(D) B is the brother in law of E.

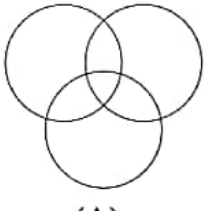
Directions—(Q. 25–27) A, B, C, D and E are 5 towns out of which three are industrial towns, two sea ports and one hill station. There are three universities in these five towns. There is a university in a hill station but no seaport. There are no seaports in the industrial towns which have universities and there are no universities in the industrial towns which have seaports. B is a seaport, D is a hill station and E is a university. There are universities only in two industrial towns. C and D are not industrial towns. The population of any industrial town or seaport is not less than 30 lakh but that of the hill station is less than 30 lakh.

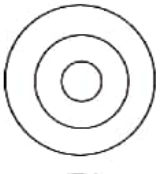
25. Which one of the following is an industrial town as well as a seaport ?
(A) E (B) C
(C) B (D) A

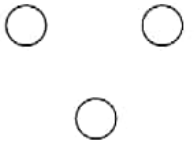
26. Which one of the following is neither a university nor an industrial town nor a hill station ?
(A) D (B) C
(C) B (D) E

27. Which one of the following is such whose population is more than 30 lakh but it is not a seaport ?
(A) E (B) B
(C) A (D) C

Directions—(Q. 28–31) Choose the correct answer from the diagrams marked 1, 2, 3, and 4 which represents the correct relationship most similar to the given three relations in each question.


(A)


(B)


(C)

(D)

28. Table, Chair, Furniture—
(A) 3 (B) 1
(C) 4 (D) 2

29. Snake, Crow, Cow—
(A) 1 (B) 3
(C) 4 (D) 2

30. District, State, Country—
(A) 3 (B) 4
(C) 1 (D) 2

31. Teacher, Writer, Philosopher—
(A) 2 (B) 4
(C) 1 (D) 3

Directions—(Q. 32–35) Read the following statements and find out the correct answer for each question.

Five members A, B, C, D and E are travelling by a car. Out of these there are two ladies. Only three members know car driving out of which one is lady. There is a couple of which the wife knows car driving. A is the younger brother of D and B is the wife of D. B drived the car from the beginning and in the end E drived the car.

32. Which one of the pairs is the pair of sister-in-law and brother-in-law ?
(A) A, D (B) A, B
(C) B, C (D) A, E

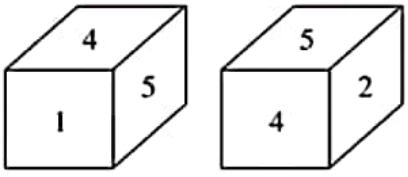
33. In the group which one is the second lady ?
(A) B (B) E
(C) A (D) C

34. In which one of the pairs, it is not possible to tell the relation between the two members ?
(A) A, B (B) A, D
(C) C, E (D) B, D

35. Who is E to A ?
(A) Brother (B) Not possible
(C) Father (D) Friend

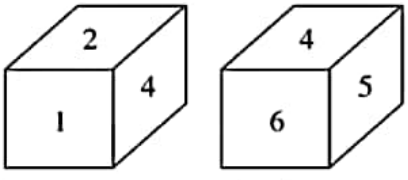
36. Below two positions of a dice are shown. What will be on opposite of the face at which 1 is written ?

Scanned by CamScanner



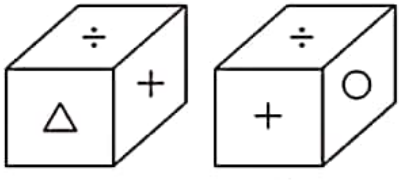
(A) 2 (B) 3
(C) 4 (D) 1

37. Two different positions of a dice are shown below. Which digit is on the opposite face of face at where 3 is written ?



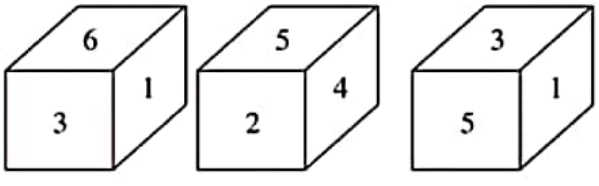
(A) 2 (B) 4
(C) 5 (D) 6

38. The four positions of a cube are shown which symbol will be on the opposite face of Δ.—



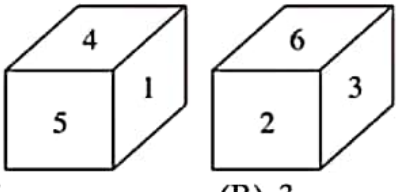
(A) × (B) +
(C) 0 (D) ÷

39. Which digit will be opposite of 3 ?



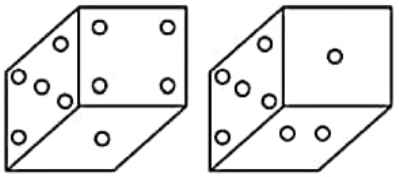
(A) 2 (B) 4
(C) 5 (D) 2 or 4

40. If there is a standard dice, which digit will be opposite of 2 in the given figure of dice shown below—



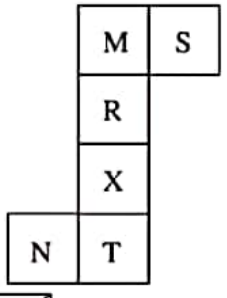
(A) 5 (B) 3
(C) 4 (D) 1

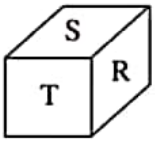
41. Six surfaces of a dice are shown below. Which will be opposite of 4 pointed face ?

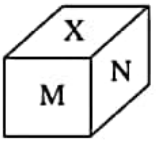


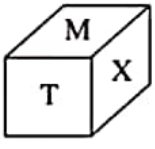
(A) 3 (B) 4
(C) 5 (D) 2

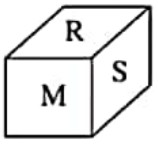
42. Six faces of a box are shown in the given figure below. You have to find out that which box may be made from the given figure ?



(A) 

(B) 

(C) 

(D) 

Answers with Explanation

1. (C) Since the region b is such which comes under I and P but not S.
2. (A) Since the region d is such which comes under I and S but not P.
3. (D) Since the region f is such which comes under S and P but not I.
4. (C) Since the region f is such comes under I only but not others.
5. (B) Since the region a is such which comes under all the three.

Chart for Questions from 6–9—

	Intelligent	Hard-worker	Honest	Ambitions
A	√	√		√
B	√			√
C	√		√	
D		√	√	
E		√	√	√

6.(D) 7. (C) 8. (B) 9.(A)

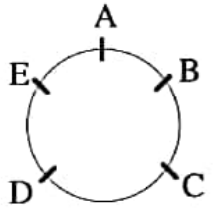
Scanned by CamScanner

Chart for Questions from 10 –14—

Indore	A	B	C	×	E
Bhopal	A	B	C	D	×
Gwalior	A	B	×	D	E
Jabalpur	A	×	X	D	E
Raipur	×	B	X	D	E

10. (C) 11. (B) 12. (D) 13. (C) 14. (D)

Chart for Questions from 15–19—



15. (B) Wife of the doctor is E and the wife of the professor is D. Hence, only the businessman is unmarried.
16. (C) As the professor is at the right hand side of C and at the left hand side of the doctor. Hence C is the businessman and B is the professor.
17. (B) E is the sister of B and A is the husband of E. Hence, A is the brother-in-law of B.
18. (A) It is clear from the Chart that E, the wife of A is at the right hand side of A.
19. (C) It is clear from the Chart that the wife of B is not sitting with B.

Chart for Questions from 20–24—

	A	B	C	D	E
Ladies	√	×	√	√	×
Gents	×	√	×	×	√
Badminton Player	×	√	×	×	×
Tennis Player	×	×	√	×	×
Chess Player	×	×	×	×	√
Wife	×	×	√	×	×
Husband	×	×	×	×	√

20. (B) 21. (D) 22. (C) 23. (B)

24. (D) Since C is the wife of E and B the brother of C. Hence, B is the brother-in-law of E.

Chart for Questions from 25–27—

	Industrial Town	Seaport	Hill station	University	Population more than 30 lakh	Population less than 30 lakh
A	√	×	×	√	√	×
B	√	√	×	×	√	×
C	×	√	×	×	√	×
D	×	×	√	√	×	√
E	√	×	×	√	√	×

25. (C) 26. (C) 27. (A)

28. (C) Table and chair are different articles but both belong to Furniture.
29. (B) Snake, Crow and Cow are all the three different articles.
30. (D) District comes under State and State comes under Country.
31. (C) Some teachers may be writers as well as philosophers. In the same way all the others may be.
32. (B) A is the younger brother of D and B is the wife of D. Hence, A and B are brother-in-law and sister-in-law.
33. (D) Since only one lady knows car driving and she is B. In the end E drived the car so E can not be a lady. A and B are brothers of each other. Hence it is only C who may be a second lady.
34. (C) A and B are brother-in-law and sister-in-law. B and D are married couple. A and D are brothers of each other. Hence, the relation between C and E cannot be established.
35. (B) From the given statements it is not possible to tell the relation between E and A.
36. (A) The digits that can not be opposite to 1 are 4 and 5. The possible numbers opposite to 1 are 2, 3 and 6. Which comes in alternative first will be answer.
37. (B) The number which is seeing in both dices will be your answer. The digit 4 is in book the dices, Hence 4 will be opposite of 3. Since it is a standard dice.

Scanned by CamScanner

38. (C) Leaving the nearer faces of Δ, the design which is looking more times will be on opposite face of Δ. There are ÷ and + on the nearer faces, so leaving these, the design 'X' is looking two times. O is looking for three times, (–) is appearing for one time. Thus O will be on opposite face of Δ, because it is appearing more times.

39. (D) The digits which are not on the opposite face of 3 are 1, 5, 6. Hence, either 2 or 4 will be at the opposite face of 3.

40. (A) It is a standard dice.

Therefore, 7 – 2 = 5.

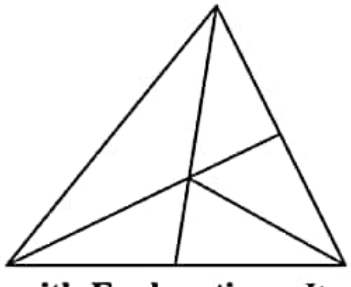
41. (A) Rotating the first dice to as in the form of second dice, 2 is obtained on the opposite face of 4.

42. (D) Opposite faces M, X/R, T and S, N will not appear together, such it is in the alternative (D) .

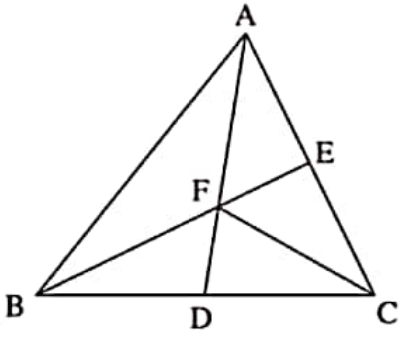
To Find Figures From the Picture

In Such questions a picture is given. This picture is divided into many different figures by various lines. The candidate has to findout the number of particular figures in the picture. Various illustrations have been given below to clearify the idea.

Example 1. How many triangles are possible from the figures given below ?



Answer with Explanation—It will be easier to findout the answer if various points of the given figure are named.

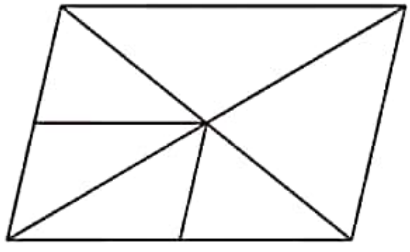


By inspection we see that the following triangles are possible.

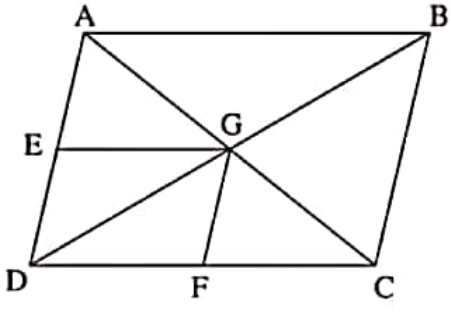
1. ABC	2. ABD	3. ADC
4. ABE	5. BEC	6. ABF
7. BFD	8. CFD	9. CEF
10. AFE	11. AFC	12. BFC

Thus we see that there are 12 triangles in the given figure.

Example 2. How Many triangles are there in the figure given below ?



Answer with Explanation—By naming the various points of the given figure.



We see that the triangles in the figures are as—

1. ABD	2. BCD	3. ADC
4. ABC	5. ABG	6. AEG
7. DEG	8. DFG	9. FGC
10. BCG	11. AGD	12. DCG

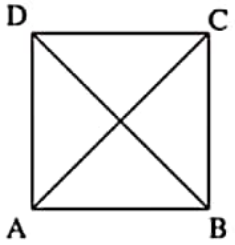
Thus there are 12 triangles in the given figure.

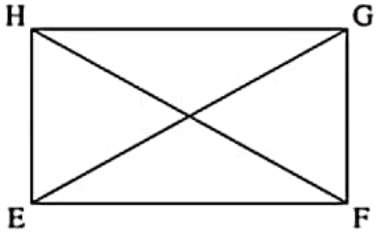
To Find the Number of Diagonals in a Given Figure

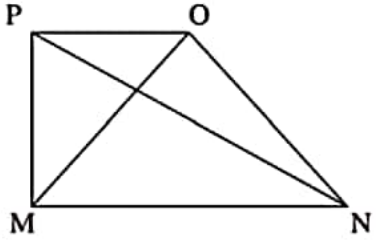
This test contains a figure as square, rectangle hexagonal and octagonal etc. in which some straight lines divide the geometrical figure meeting at two or more points. The line which divide the figure in two or more points is called diagonal. Different figures can have different no. of diagonal, you will have to count those diagonals and the number of those diagonals will be the answer.

Scanned by CamScanner

(i) The number of diagonals in a rectangle or square (Polygonal and Trapezium) is two only as :





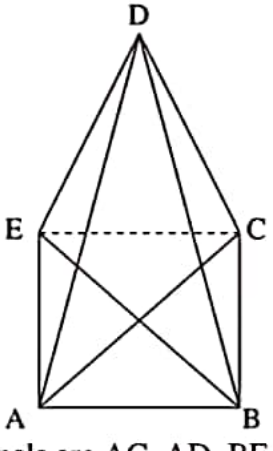


(a) Square has two diagonals as 'AC' and 'BD'

(b) A rectangle has two diagonals also as 'EG' and 'FH'

(c) And a trapezium has two diagonals also as 'MO' and 'NP'.

(ii) The number of diagonals in a pentagon is 5.



The diagonals are AC, AD, BE, BD and EC.

∴ We have a formula to find the no. of diagonals as,

$$\boxed{\frac{n(n-1)}{2} - n}$$

where n is the number of sides of the given figure.

Example 1. How many diagonals are there in a Hexagon ?

(A) 6 (B) 7
(C) 8 (D) 9

Answer with Explanation—A hexagon has 6 sides (arms)

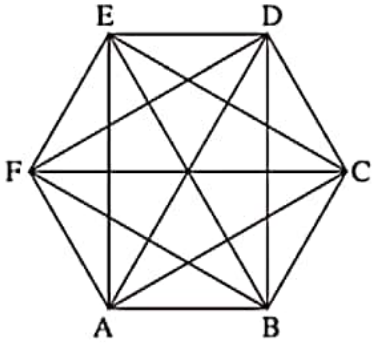
∴ By formula, the number of diagonals are

$$= \frac{6 \times (6-1)}{2} - 6$$

$$= \frac{30}{2} - 6$$

$$= 15 - 6 = 9$$

But by practically, we find



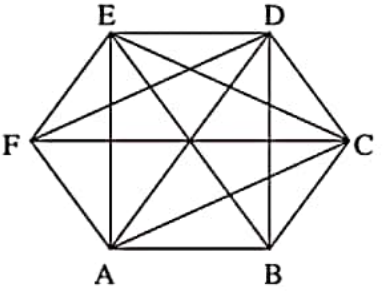
Hence the diagonals are—

AC, AD, AE
BD, BE, BF
CE, CF, DF

Here are 9 diagonals in a hexagon

∴ Therefore, D is correct answer.

Example 2. How many diagonals are there in the given figure ?



(A) 10 (B) 12
(C) 8 (D) 6

Answer with Explanation—The diagonals are—

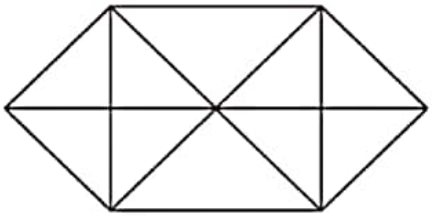
AC, AD, AE, BD, EF, CE, CF and DP

∴ Total number of diagonals is 8.

Scanned by CamScanner

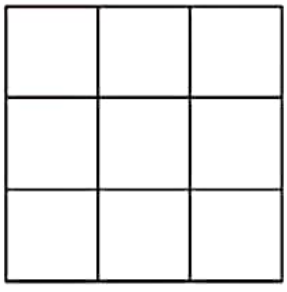
Exercise

1. What is the number of triangles in the figure given below ?



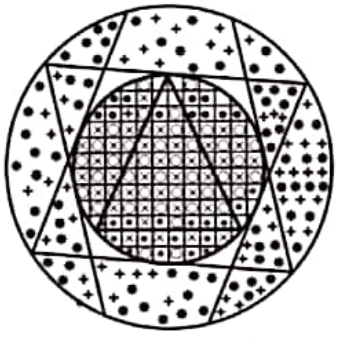
(A) 20 (B) 22
(C) 26 (D) 29

2. How many squares are there in the figure given below ?



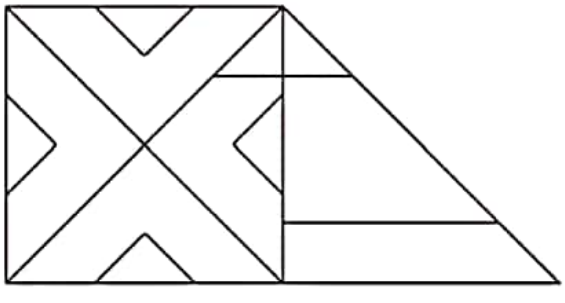
(A) 11 (B) 14
(C) 13 (D) 16

3. What is the number of circles in the figure given below ?



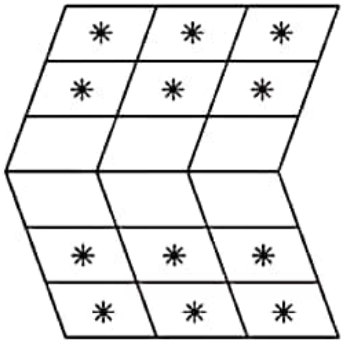
(A) 12 (B) 25
(C) 17 (D) 21

4. What is the number of triangles in the figure given below ?



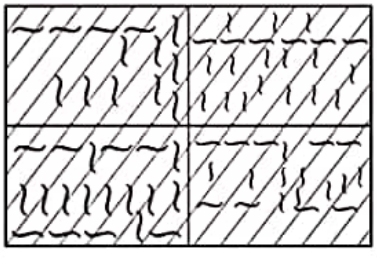
(A) 18 (B) 19
(C) 20 (D) 17

5. What is the number of parallelograms in the figure given below ?



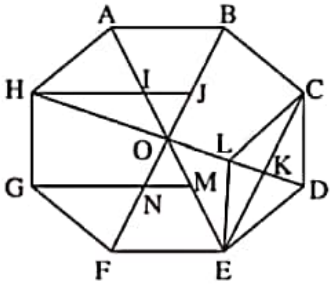
(A) 38 (B) 25
(C) 28 (D) 35

6. Find the number of rectangles hidden in the figure given below ?



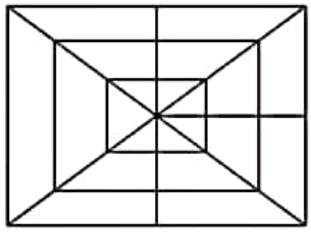
(A) 8 (B) 9
(C) 4 (D) 5

7. How many triangles are hidden in the figure given below ?



(A) 26 (B) 30
(C) 27 (D) 25

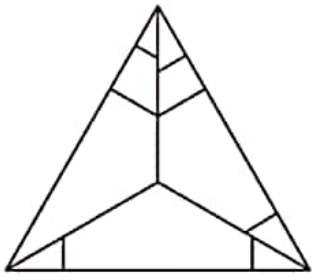
8. What is the number of triangles in the figure given below ?



(A) 26 (B) 40
(C) 42 (D) 30

Scanned by CamScanner

9. What is the number of triangles in the figure given below ?

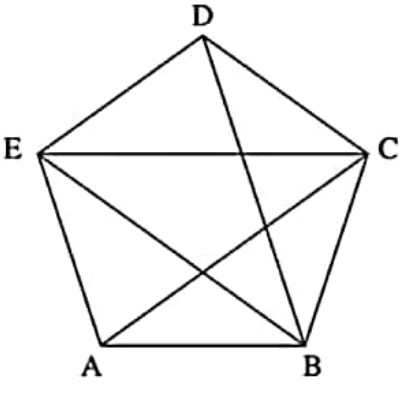


(A) 7 (B) 8
(C) 13 (D) 11

10. Find the number of triangles in the figure given below ?

(A) 7 (B) 3
(C) 10 (D) 6

11. How many diagonals are there in the given figure ?

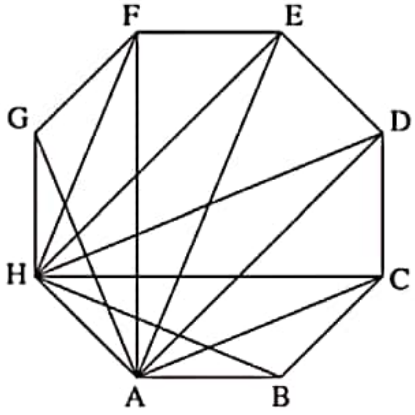


(A) 3 (B) 4
(C) 5 (D) 6

12. How many diagonals are there in a pentagon ?
(A) 3 (B) 4
(C) 5 (D) 6

13. How many diagonals are drawn in an octagon?
(A) 26 (B) 27
(C) 20 (D) 29

14. How many diagonals are there in the figure given below ?

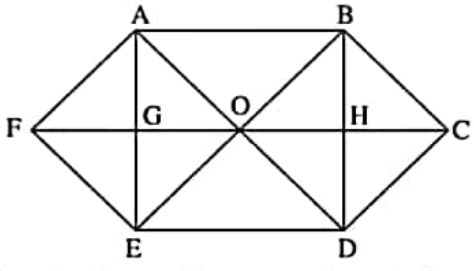


(A) 9 (B) 10
(C) 11 (D) 12

15. How many diagonals can be drawn in a trapezium ?
(A) 2 (B) 3
(C) 4 (D) 5

Answers with Explanation

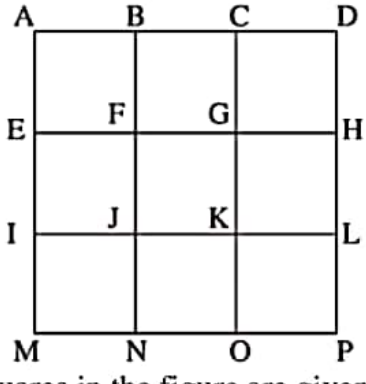
1. (B)



Triangles in the figure are given below :

1. FOE	2. OAB	3. BHC
4. GAF	5. ABE	6. BOD
7. OED	8. OAF	9. DHC
10. GEF	11. AED	12. BCD
13. ODC	14. OBH	15. OAG
16. EDB	17. AEO	18. OBC
19. OHD	20. OGE	21. DBA
22. AFE		

2. (B)



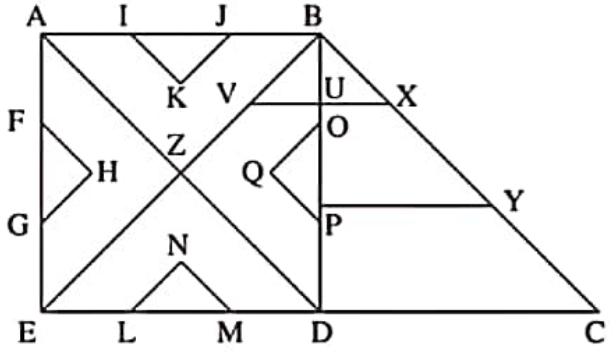
The squares in the figure are given below :

1. ABEF	2. BCGF	3. CDHG
4. EFJI	5. EGKJ	6. GHLK

Scanned by CamScanner

7. IJNM 8. JKON 9. KLPO
10. ADPM 11. ACKI 12. BDLJ
13. MOGE 14. NPHF

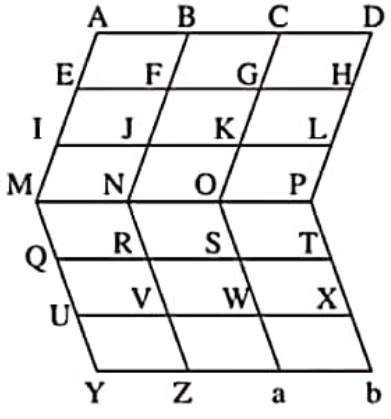
3. (D) 4. (A)



Triangles in the figure are given below :

1. ABE 2. AED 3. BED
4. BAD 5. AZE 6. EZD
7. ZBD 8. ABZ 9. IJK
10. FHG 11. LMN 12. OPQ
13. BDC 14. EBC 15. BVU
16. BUX 17. VBX 18. BPY

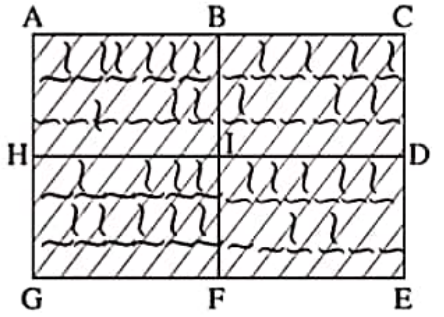
5. (C)



The parallelograms in the figure as given below :

1. ABEF 2. BCGF 3. CDHG
4. EFJI 5. IJNM 6. JKON
7. KLPO 8. ADPM 9. ACKI
10. BDLJ 11. EGOM 12. FHPN
13. MPbY 14. MNRQ 15. NOSR
16. OPTS 17. QRVU 18. RSWV
19. STXW 20. UVZY 21. VWaZ
22. WXba 23. MOWU 24. NPXW
25. YaSa 26. RTbZ 27. FJKG
28. GHLK

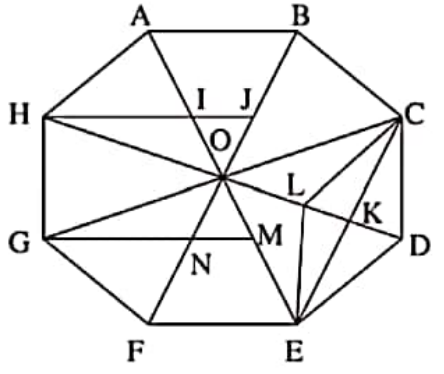
6. (B)



The rectangles in the figure are as given below :

1. ACEG 2. AGDH 3. HDEG
4. ABIH 5. CBID 6. DIFE
7. HIGF 8. ABFG 9. BCEF

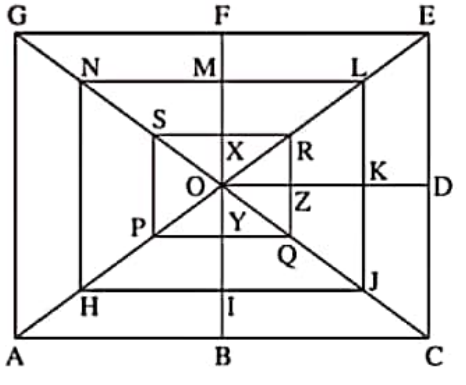
7. (A)



The Triangles in the figure are as given below :

1. AOH 2. AOB 3. BOC
4. COD 5. DOE 6. FOE
7. GOF 8. HOG 9. IAH
10. IHO 11. OLC 12. OIJ
13. HOJ 14. ONM 15. OGN
16. GNE 17. OGM 18. LCD
19. OLE 20. LED 21. KLC
22. KCD 23. KED 24. KEL
25. LCE 26. COE

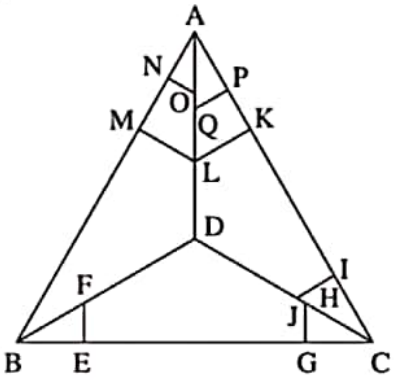
8. (C) The Triangles in the figure are as given below :



Scanned by CamScanner

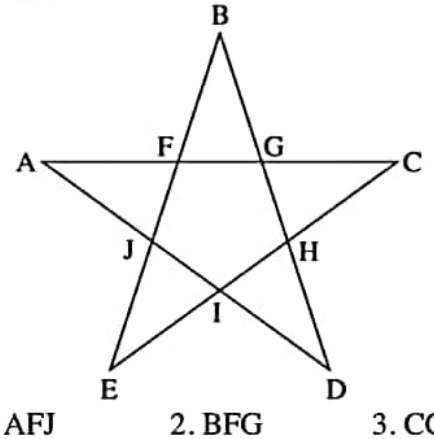
1. OAC	2. OCE	3. OEG
4. OGA	5. AEG	6. ACE
7. AGC	8. EGC	9. ONL
10. OLJ	11. OJH	12. ONH
13. NJH	14. LNJ	15. HNL
16. HJL	17. PSR	18. PQR
19. SPQ	20. SRQ	21. OSR
22. ORQ	23. OPQ	24. OPS
25. OYP	26. OYQ	27. OHJ
28. OIJ	29. ORZ	30. OZQ
31. OLK	32. OKJ	33. OSX
34. OXR	35. OMN	36. OML
37. OBC	38. OAB	39. OCD
40. ODE	41. OEF	42. OFG

9. (D) The triangles in the figure are as given below :



1. ABC	2. ADB	3. ADC
4. DBC	5. BFE	6. CHG
7. CHJ	8. ANO	9. APQ
10. AML	11. ALK	

10. (C) The triangles in the figure are as given below :



1. AFJ	2. BFG	3. CGH
4. DHI	5. EIJ	6. AIC
7. BJD	8. CFE	9. DAG
10. ECF		

11. (B) In the given figure, there are four diagonals as shown below :

AC, BD, BE, CE

12. (C) From formula

$$\text{No. of diagonals} = \frac{n(n-1)}{2} - n$$

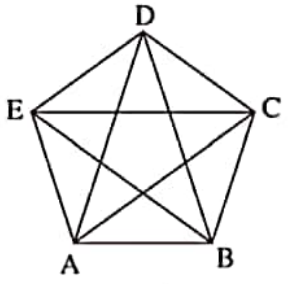
(where n is the number of side)

$$= \frac{5(5-1)}{2} - 5$$

$$= \frac{20}{2} - 5 = 10 - 5$$

$$= 5$$

The no. of diagonals practically are—



AC, AD, BD, BE and CE

∴ There are 5 diagonals in a pentagon.

13. (C) From formula, the no. of diagonals in an octagon

$$= \frac{n(n-1)}{2} - n$$

$$= \frac{8(8-1)}{2} - 8$$

$$= \frac{56}{2} - 8 = 20$$

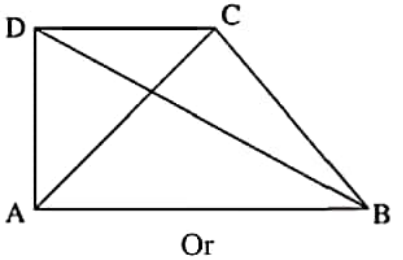
14. (B) The diagonals in the given figure are shown below—

AC, AD, AE, AF, AG

HB, HC, HD, HE, HP

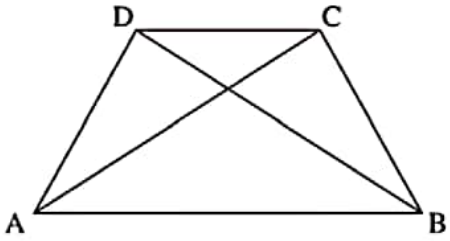
Hence, there are 10 diagonals in the given figure.

15. Only two diagonals can be drawn in a trapezium as—



Or

Scanned by CamScanner



Here, are two diagonals in each figure.

To Find out the Components of the Given Figure

In each of this type of questions one figure is followed by four alternatives. In one of these four alternatives, only all the components of the given figure, are present. The candidates have to findout the correct alternative.

Example 1.

(A) (B) (C) (D)

Answer with Explanation—(D) By studying all the alternatives carefully it is found that in (A) One horizontal line is less than the horizontal lines in the given figure. In (B) there are no dashes on the cross. In (C) there is no triangle which is at the right corner in the given figure. But in (D) all the components of the given figure are present. Hence, the correct answer is (D).

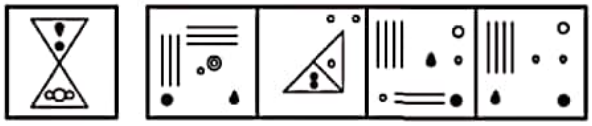
Example 2.

(A) (B) (C) (D)

Answer with Explanation—(A) The vertical line under the circle in the given figure is not present in (B). The semi-circle above the triangle in the given figure is not present in (C). Two dashes in the lower part of the triangle in the given figure are not present in (D). But in (A), all the components of the given figure are present. Hence, the correct answer is (A).

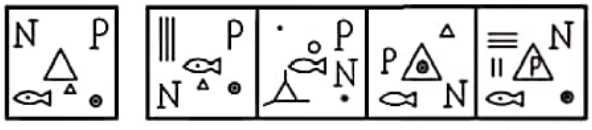
Exercise

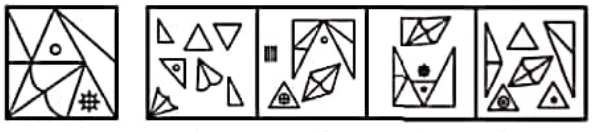
Directions—In each of the following questions, a figure is given. Its components are given in one of the four alternative figures. Find this one.

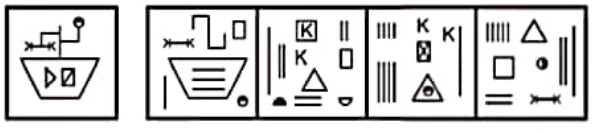
1. 
(A) (B) (C) (D)

2.
(A) (B) (C) (D)

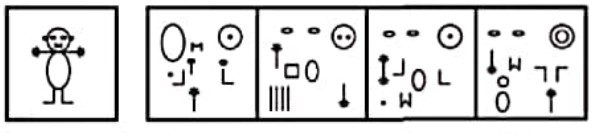
3.
(A) (B) (C) (D)

4. 
(A) (B) (C) (D)

5. 
(A) (B) (C) (D)

6. 
(A) (B) (C) (D)

7.
(A) (B) (C) (D)

8. 
(A) (B) (C) (D)

9.
(A) (B) (C) (D)

10.
(A) (B) (C) (D)

Scanned by CamScanner

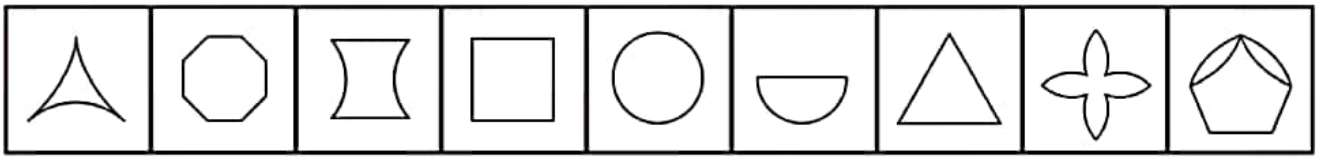
Answers

1. (C) 2. (A) 3. (D) 4. (B) 5. (D) 6. (B) 7. (A) 8. (C) 9. (A) 10. (D)

Grouping of Figures into Classes

In each of the questions of this type, there are nine figures which are to be grouped into classes on the basis of common characteristics. Each question is followed by four alternatives. Each alternative consists of three groups of three numbers each. The candidate has to find out the correct alternative.

Example 1.

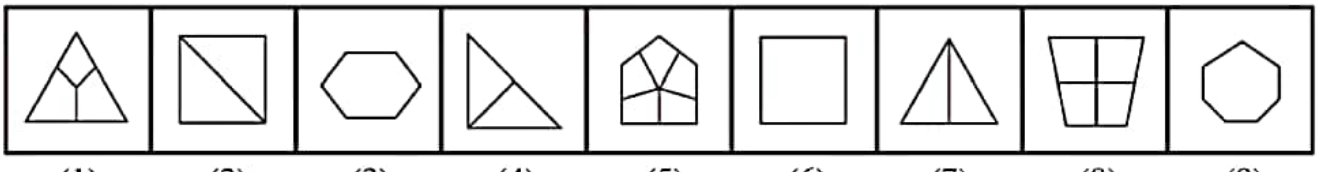


(1) (2) (3) (4) (5) (6) (7) (8) (9)

(A) 1, 7, 9, 2, 5, 4; 3, 6, 8
(B) 6, 3, 9; 1, 7, 4; 2, 5, 8
(C) 7, 2, 4; 8, 1, 5; 3, 9, 6
(D) 8, 5, 9; 1, 7, 6; 2, 3, 4

Answer with Explanation—(C) By studying all the figures carefully it is found that in each of the figures 7, 2 and 4, the design is made of straight lines. In each of the figures 1, 5 and 8 the design is made of curves. In each of the figures 3, 6 and 9 the design is made of straight lines as well as curves, Hence, the alternative (C) is correct.

Example 2.



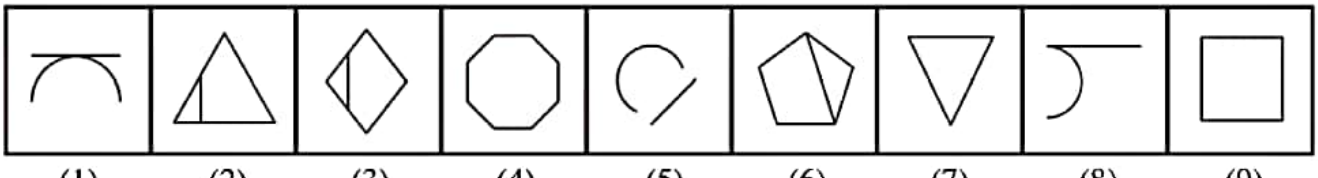
(1) (2) (3) (4) (5) (6) (7) (8) (9)

(A) 5, 1, 8; 2, 4, 7; 3, 9, 6
(B) 1, 8, 4; 6, 9, 3; 5, 2, 7
(C) 1, 4, 7; 2, 6, 8; 3, 9, 5
(D) 7, 4, 8; 9, 3, 6; 2, 5, 1

Answer with Explanation—(A) By studying all the figures carefully it is found that in each of the figures 5, 1 and 8, the number of inner lines is same as the number of outer lines. In each of the figures 2, 4 and 7 the design is divided into two equal halves by a straight line while in each of the figures 3, 9 and 6 there is a complete design. Hence, the alternative (A) is correct.

Exercise

Directions—In each of the following questions, a series of figures are given and these can be grouped into classes. Select from amongst the alternatives one set of groups into which the figures can be classified.

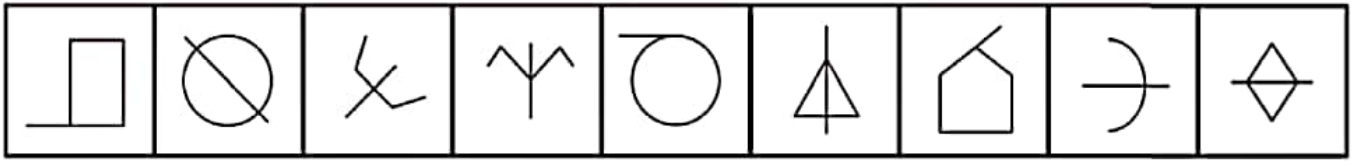
1. 

(1) (2) (3) (4) (5) (6) (7) (8) (9)

(A) 2, 6, 3; 4, 9, 1; 8, 5, 7
(B) 6, 8, 5; 3, 9, 2; 1, 4, 5
(C) 1, 8, 5; 9, 4, 7; 6, 3, 2
(D) 5, 4, 7; 2, 6, 1; 3, 9, 8

Scanned by CamScanner

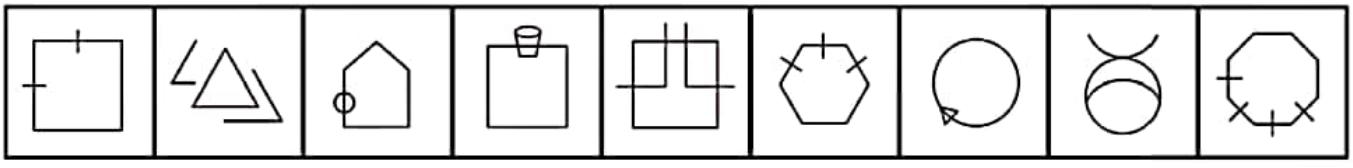
2.



(1) (2) (3) (4) (5) (6) (7) (8) (9)

(A) 3, 8, 4; 9, 2, 6; 7, 1, 5
(B) 4, 7, 3; 9, 6, 2; 5, 1, 8
(C) 4, 9, 2; 5, 1, 7; 3, 8, 6
(D) 5, 1, 7; 3, 2, 4; 9, 6, 8

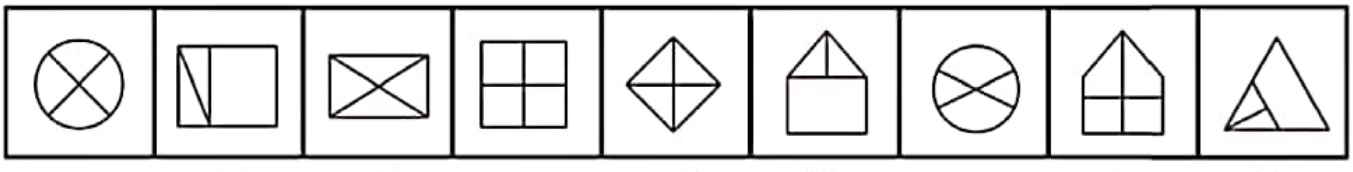
3.



(1) (2) (3) (4) (5) (6) (7) (8) (9)

(A) 5, 4, 9; 1, 6, 7; 2, 8, 3
(B) 8, 2, 5; 7, 4, 3; 9, 1, 6
(C) 6, 1, 4; 2, 9, 3; 5, 7, 8
(D) 6, 5, 4; 9, 3, 7; 2, 1, 8

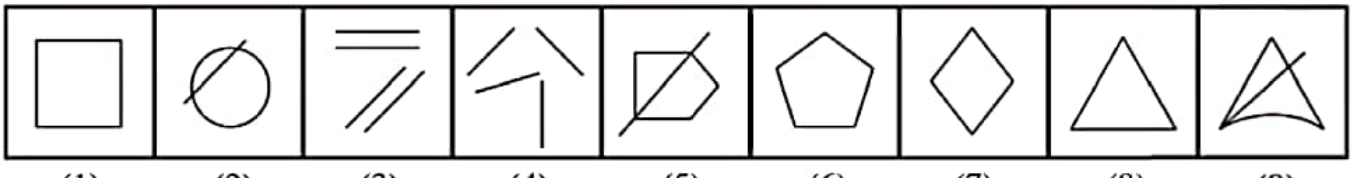
4.



(1) (2) (3) (4) (5) (6) (7) (8) (9)

(A) 5, 2, 1; 8, 3, 7; 6, 4, 9
(B) 9, 7, 3; 2, 6, 8; 4, 1, 5
(C) 9, 7, 5; 2, 3, 1; 6, 8, 4
(D) 9, 2, 6; 8, 3, 7; 4, 1, 5

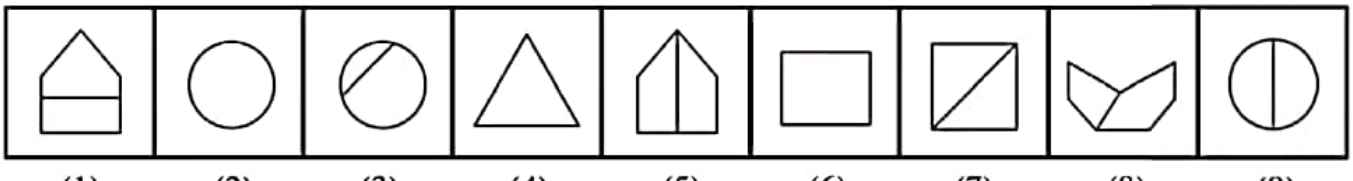
5.



(1) (2) (3) (4) (5) (6) (7) (8) (9)

(A) 7, 1, 3; 8, 4, 6; 5, 9, 2
(B) 3, 7, 8; 2, 5, 9; 6, 4, 1
(C) 8, 9, 3; 4, 6, 1; 2, 5, 7
(D) 1, 4, 9; 8, 3, 5; 2, 7, 6

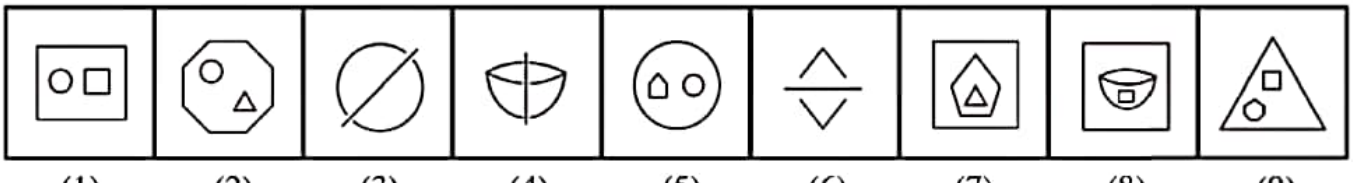
6.



(1) (2) (3) (4) (5) (6) (7) (8) (9)

(A) 6, 7, 8; 1, 3, 5; 2, 9, 4
(B) 1, 6, 4; 7, 5, 9; 2, 8, 3
(C) 7, 5, 9; 8, 1, 3; 6, 2, 4
(D) 7, 8, 4; 2, 5, 6; 9, 3, 1

7.

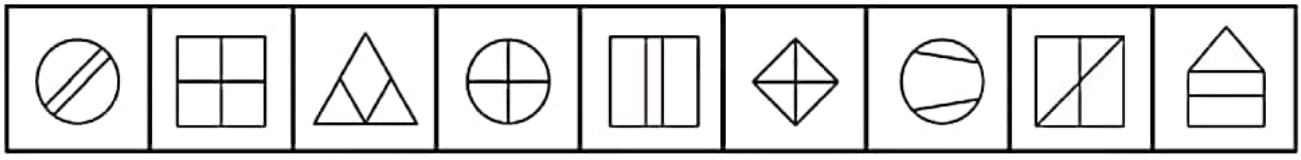


(1) (2) (3) (4) (5) (6) (7) (8) (9)

(A) 7, 2, 9; 5, 1, 3; 6, 4, 8
(B) 2, 9, 7; 1, 3, 4; 6, 5, 8
(C) 5, 9, 4; 3, 1, 2; 6, 7, 8
(D) 2, 9, 7; 1, 8, 5; 6, 4, 3

Scanned by CamScanner

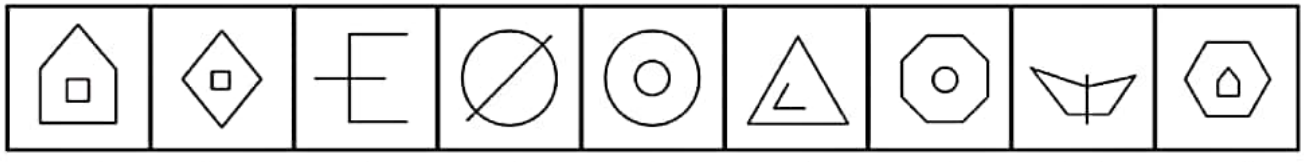
8.



(1) (2) (3) (4) (5) (6) (7) (8) (9)

(A) 7, 8, 3; 6, 2, 4; 9, 1, 5
(B) 2, 6, 4; 1, 9, 7; 3, 5, 8
(C) 8, 3, 1; 2, 9, 5; 7, 4, 6
(D) 7, 6, 1; 8, 2, 9; 5, 3, 4

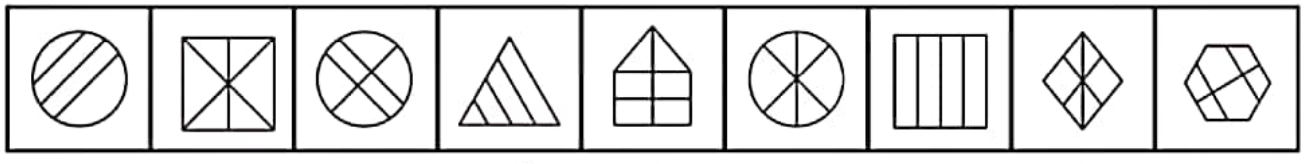
9.



(1) (2) (3) (4) (5) (6) (7) (8) (9)

(A) 8, 3, 4; 5, 2, 1; 9, 7, 6
(B) 7, 2, 5; 8, 3, 4; 9, 1, 6
(C) 7, 4, 3; 6, 1, 9; 8, 5, 2
(D) 7, 4, 6; 2, 1, 3; 8, 9, 5

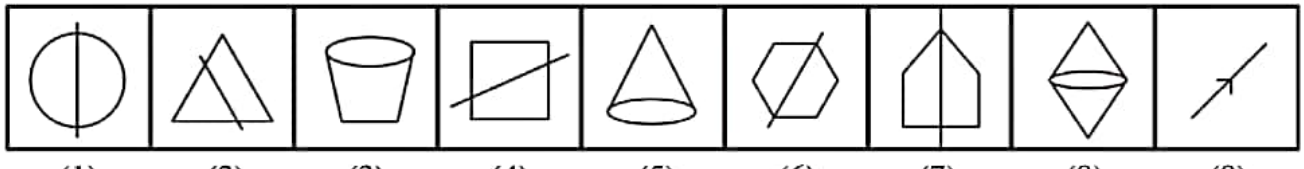
10.



(1) (2) (3) (4) (5) (6) (7) (8) (9)

(A) 4, 1, 7; 3, 5, 6; 9, 2, 8
(B) 1, 8, 5,; 2, 6, 9; 7, 4, 3
(C) 2, 8, 6; 7, 1, 4; 3, 9, 5
(D) 5, 2, 3; 7, 9, 1; 4, 6, 8

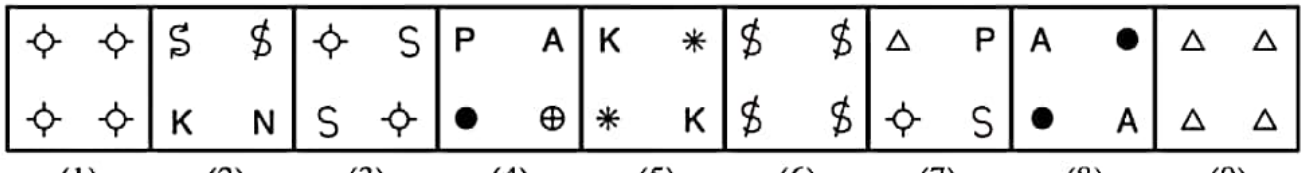
11.



(1) (2) (3) (4) (5) (6) (7) (8) (9)

(A) 9, 7, 1; 4, 8, 2; 6, 3, 5
(B) 5, 8, 3; 9, 7, 6; 4, 1, 2
(C) 1, 9, 5; 6, 2, 4; 3, 7, 8
(D) 4, 2, 6; 3, 8, 5; 1, 9, 7

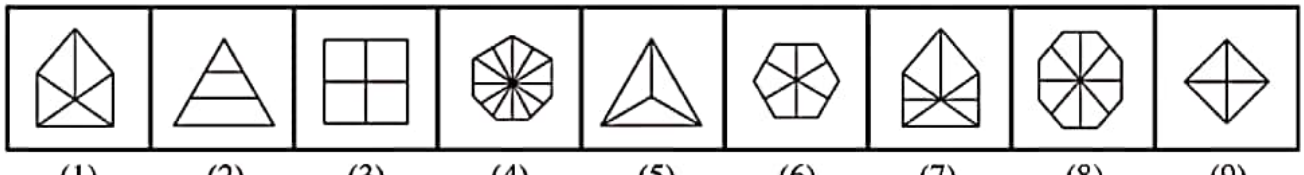
12.



(1) (2) (3) (4) (5) (6) (7) (8) (9)

(A) 7, 4, 2; 9, 1, 6; 8, 5, 3
(B) 5, 2, 7; 6, 1, 9; 8, 3, 4
(C) 9, 7, 5; 8, 1, 2; 6, 3, 4
(D) 8, 5, 3; 4, 7, 9; 6, 1, 2

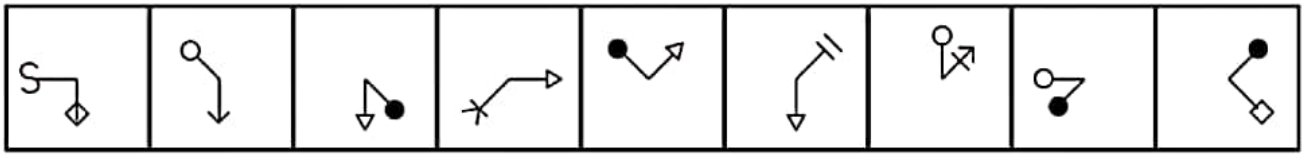
13.



(1) (2) (3) (4) (5) (6) (7) (8) (9)

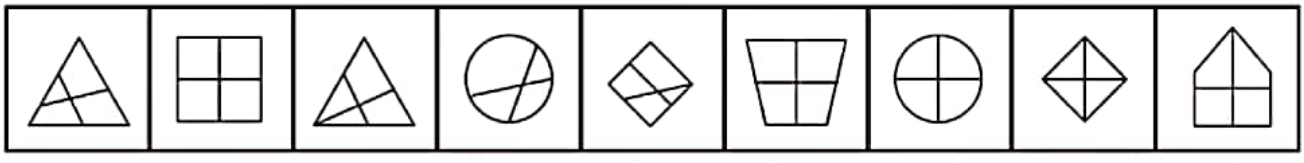
(A) 5, 1, 9; 4, 7, 6; 2, 8, 3
(B) 2, 7, 4; 6, 3, 8; 9, 1, 5
(C) 6, 9, 5; 7, 2, 4; 1, 7, 4
(D) 6, 3, 8; 7, 2, 9; 4, 5, 1

Scanned by CamScanner

14. 

(1) (2) (3) (4) (5) (6) (7) (8) (9)

(A) 9, 1, 5; 8, 7, 2; 4, 6, 3
(B) 7, 3, 8; 9, 2, 5; 6, 1, 4
(C) 9, 1, 5; 8, 3, 7; 6, 2, 4
(D) 9, 7, 4; 1, 2, 3; 6, 5, 8

15. 

(1) (2) (3) (4) (5) (6) (7) (8) (9)

(A) 4, 1, 5; 9, 6, 2; 8, 7, 3
(B) 1, 5, 4; 2, 9, 6; 8, 7, 3
(C) 9, 3, 6; 8, 2, 7; 5, 1, 4
(D) 7, 2, 8; 5, 1, 6; 9, 3, 4

Answers with Explanation

1. (C) In figures 1, 8 and 5 there are a semi-circle and a straight line. In figures 9, 4 and 7 there are closed rectilinear figures while in figures 6, 3 and 2 a closed rectilinear figure is divided by a straight line into a triangle and a quadrilateral.

2. (A) In figures 3, 8 and 4 there are open figures intersected by a straight line. In figures 9, 2 and 6 there are closed figures intersected by a line. In figures 7, 1 and 5 there are closed figures from which a line is emerging outside.

3. (B) In figures 8, 2 and 5, there is one complete design and two half designs of the same design. In figures 7, 4, 3 there is a closed figure which is intersected by another design. In figures 9, 1 and 6 a closed figure is being cut by dashes which are half of total number of sides of the figure.

4. (D) In figures 9, 2 and 6 the design is divided into two triangles and one quadrilateral. In each figures 8, 3 and 7 two parts of designs are equals. In figures 4, 1 and 5 design is divided into four equal parts.

5. (A) In figures 7, 1 and 3 there are two sets of parallel lines. In figures 8, 4 and 6 no line is parallel to other. In figures 5, 9 and 2, the closed figure is divided by straight line into two unequal parts.

6. (C) In figures 7, 5 and 9 a closed figure is divided by a straight line into two equal parts. In figures 8, 1 and 3 a closed figure is divided by a straight line into two unequal parts. Figures 6, 2 and 4 are closed rectilinear figures.

7. (D) In figures 2, 9 and 7 all the designs are different. In figures 1, 8 and 5 two figures are same. In figures 6, 4 and 3 a design is divided into two equal halves.

8. (A) In figures 7, 8 and 3 two inner lines are neither parallel nor perpendicular. In figures 6, 2 and 4 two inner lines are perpendicular to each other. In figures 8, 1, 5 two inner lines are parallel.

9. (B) In figures 7, 2 and 5 inner and outer designs are same. The figures 8, 3 and 4 are divided in two equal halves by a straight line. In figures 9, 1 and 6 the difference of the number of sides of both designs is one.

10. (C) In figures 2, 8 and 6 none of the inner lines are parallel. In figures 7, 1 and 4 all the three inner lines are parallel. In figures 9, 5 and 3 two inner lines are parallel.

11. (D) In figures 4, 2, 6 a rectilinear figure is intersected by a straight line. In figures 3, 8 and 5 the design consists of a straight line and a curve. In figures 1, 9 and 7 the design is divided into two equal halves by a straight line.

12. (A) In figures 7, 4 and 2 all the four designs in each figure are different. In figures 9, 1 and 6 all the four designs in each figure are same. In figures 8, 5 and 3 opposite designs along diagonal are same.

Scanned by CamScanner

13. (B) In figures 2, 7 and 4 the difference of number of inner lines and outer lines is one. In figures 6, 3 and 8 perpendiculars are drawn from the middle points of the sides. In figure 9, 1 and 5 inner lines are drawn from the vertices.

14. (C) In figures 9, 1 and 5 the angle between the two straight lines is 90°. In figures 8, 3 and 7 the angle between the two straight lines is 45°. In figures 6, 2 and 4 the angle between the two straight lines is 135°.

15. (C) In figures 9, 3 and 6 the design is divided in two equal halves by a straight line and this line is again intersected by a perpendicular line. In figures 8, 2 and 7 the design is divided into four equal parts. In figures 5, 1 and 4 the design is divided in four unequal parts.

Miscellaneous Exercise I

Directions—In each of the following questions there are four possible answers for each question. Find the correct answer.

1. Among five villages Wadgaon is smaller than Jategaon, Bhiwani is larger than Mohgaon and Ranjui is larger than Jategaon but not as large as Mohgaon. Which is the largest village ?
   (A) Bhiwani
   (B) Mohgaon
   (C) Jategaon
   (D) Ranjui

2. In a group of five persons A, B, C, D, E; A and C are intelligent in Accountancy and Mathematics, B and C are intelligent in Accountancy and History. E and D are intelligent in Civics and interview. E is intelligent in interview, Math's and Civics. B and D are intelligent in Civics and History. Who is intelligent in Accountancy and Math's but not in History ?
   (A) A (B) B
   (C) C (D) D

3. A three centimetre cube has been painted red on all sides, it is then cut into one centimetre cubes. How many cubes will be there with one side painted red ?
   (A) 6 (B) 4
   (C) 3 (D) 1

4. How many 4 are there in the following immediately after which there is a 7 but there is no 9 before them ?
   947487464746947478864 7
   (A) 8 (B) 4
   (C) 3 (D) 2

5. Six boys A, B, C, D, E and F play a game of Cards. Each has a pack of 10 Cards. F borrows 2 Cards from A, and gives away 5 to C who in his teams gives 3 to B, while B gives 6 to D who passes on 1 to E. How many Cards D has?
   (A) 9 (B) 8
   (C) 11 (D) 15

6. Sunil was born on February 29 in the year 1960. How many birthdays will be celebrated upto 1976 February ?
   (A) 16 (B) 4
   (C) 8 (D) 10

7. If Saturday falls four days after today which is 6th January, on what day did the 1st of December of the previous year fall ?
   (A) Tuesday (B) Wednesday
   (C) Monday (D) Thursday

8. A square sheet of paper is cut along a diagonal into two equal triangles. What is the minimum number of pieces into which one of the triangle shall have to be cut so that these pieces could be arranged as a rectangle ?
   (A) 3 (B) 2
   (C) 4 (D) 5

9. Ram and Shyam are both photographers and artist. Mohan and Shyam are both photographers and dancer; Ram and Vijay are both musician and artist. Vijay and Mohan both are dancer and musician, name the person who is photographer, artist and musician.
   (A) Ram (B) Mohan
   (C) Vijay (D) Shyam

10. Ram is richer than Shyam but not so rich as Sohan but poorer than Ramesh, than Shyam is—
   (A) Richer than Sohan
   (B) As poor as Sohan
   (C) Poorer than Ramesh
   (D) Richer than Ramesh

Scanned by CamScanner

Answers with Explanation

1. (A) The villages may be placed in the following order according to their size in descending order.

   Bhiwani, Mohgaon, Ranjui, Jategaon and Wadgaon.

2. (A) The following Chart indicates the position:

	A	B	C	D	E
Accountancy	√	√	√		
Civics		√		√	√
History		√	√	√	
Math's	√		√		√
Interview				√	√

3. (A) One small cube from each face of the large cube.

4. (C)

5. (D) The number of cards with D is 15.

6. (B) One birthday be celebrated on 29th Feb. 1964. Second on 1968, third on 1972 and fourth on 1976.

7. (C) Since Saturday falls after 4 days of 6th January. It means the date on Saturday is 10th. The number of days from first December to 10th January = 40 days. On dividing 40 by 7, remainder obtained is 5. Therefore, five days before Saturday is Monday.

8. (B)

9. (A) The question can be answered with the help of the following table :

	Photo-grapher	Artist	Dancer	Musician
Ram	√	√		√
Shyam	√	√	√	
Vijay		√	√	√
Mohan	√		√	√

10. (C) Ramesh is the richest of all and Shyam is the poorest of all.

Miscellaneous Exercise II

Directions—In each of the questions from 1 to 5, one word is missing to both the sides of : : . One of these missing words is from the four words written in the row I and one from the four words written in the row II. If the proper words are substituted at the missing places, the relationship between the words to the left of : : is the same as between the words to its right. Find out the correct pair of words.

1. I : India : : Queen : II

   I (p) Democracy (q) Prime Minister
   (r) President (s) Socialism
   II (a) England (b) Japan
   (c) Thailand (d) Nepal
   (A) q. c (B) p. a
   (C) r . a (D) q . b

2. I : Prose : : Stanza : : II

   I (p) Book (q) Paragraph
   (r) Author (s) Story
   II (a) Poetry (b) Tone
   (c) Song (d) Drama
   (A) r . a (B) q. a
   (C) q . c (D) p . b

3. I : Death : : To bloom : II

   I (p) Flower (q) Birth
   (r) Bud (s) Young
   II (a) Old (b) To fade
   (c) Preference (d) Unconscious
   (A) q . b (B) p . a
   (C) s . a (D) r . c

4. I : Old : : Modern : II

   I (p) Ancient (q) Death
   (r) Famous (s) Civilization
   II (a) Industry (b) New
   (c) Fashion (d) Western
   (A) p . a (B) r . c
   (C) p . b (D) s . d

5. I : Cream : : Paddy : II

   I (p) Cow (q) Milk
   (r) Butter (s) Curd
   II (a) Food (b) Husk
   (c) Rice (d) Stew

Scanned by CamScanner

(A) p . c (B) q . c
(C) r . c (D) q . d

6. A, B and C start to walk from the same place in such a way that B goes on the road which is at right angles to the road on which A and C go. They stop to walk after going equal distances. If C is in South-West direction of B, then in what direction is B to A ?
(A) North-East
(B) South-West
(C) South-East
(D) North-West

7. At that time when my mother was twice of my age, my brother was half of my father's age. If my younger sister's age was 15 years, and the difference between my and her age which is equal to the age difference between my father and mother and if my father's age at that time was 54 years, what was my age ?
(A) 23 years (B) 21 years
(C) 27 years (D) 35 years

Directions—In each of the following questions a series of the groups of digits or letters is given. In each series one term is missing which is shown by (?). Find out the missing term out of the given alternatives.

8. 1, 3, 6, 10, 15, ?
(A) 18 (B) 21
(C) 19 (D) 20

9. 2, 7, 12, ?, 22, 27
(A) 17 (B) 18
(C) 19 (D) 6

10. 1, 3, 4, 5, 7, 9, 11, ?
(A) 12 (B) 18
(C) 14 (D) 15

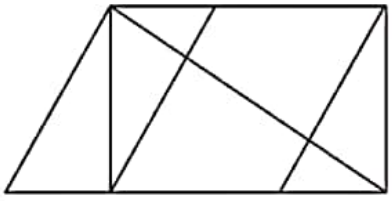
11. 0, 3, 8, 15, 24, 35, ?
(A) 39 (B) 48
(C) 53 (D) 44

12. 3, 7, ?, 13, 17, 19
(A) 12 (B) 8
(C) 9 (D) 11

13. ACE, BDF, CEG, DFH, ?
(A) EFG (B) EHK
(C) EGI (D) FHI

14. Z, W, T, Q, N, ?
(A) L (B) K
(C) J (D) P

15. How many triangles are there in the following figure ?



(A) 9 (B) 8
(C) 7 (D) 12

Directions—(Q. 16–20) Each question is based on the following information.

From amongst six boys a, b, c, d, e and f and five girls p, q, r, s and t, a team of six is to be selected under the following conditions :

a and d have to be together
b cannot be teamed with e
c and q have to be together
d cannot go with p
c cannot go with s
b and r have to be together
s and t have to be together

16. If four members including e have to be boys, the members other than e are—
(A) a b c q r (B) a c d f q
(C) a d f s t (D) b c f q r

17. If including p the team has three girls, the other members are—
(A) a d b s t (B) b c f q r
(C) a d e s t (D) b f r s t

18. If four members have to be girls, the members of the team are—
(A) b f p r s t (B) b c p q r s
(C) b c p q r t (D) b c q r s t

19. If there be five boys in the team the only girl member is—
(A) p (B) s
(C) q (D) r

20. If the team consists of four boys including c, the other members of the team are—

Scanned by CamScanner

(A) b e f r q (B) a b d q r
(C) d e f a q (D) a d e p q

Directions—(Q. 21–25) In column I are listed certain groups of individuals while in column II are listed some of the characteristics against each group of individuals which are common to each member of that group.

Column I	Column II
F H I J	T W
I J K	P T
I J L M	S U M
G H I K M	R V
G H I	Q R V
F G I	P R
H I J	Q T W
I J L	Q S U W
G I J	P Q S

21. Which individual has all the above characteristics ?
(A) H (B) J
(C) M (D) I

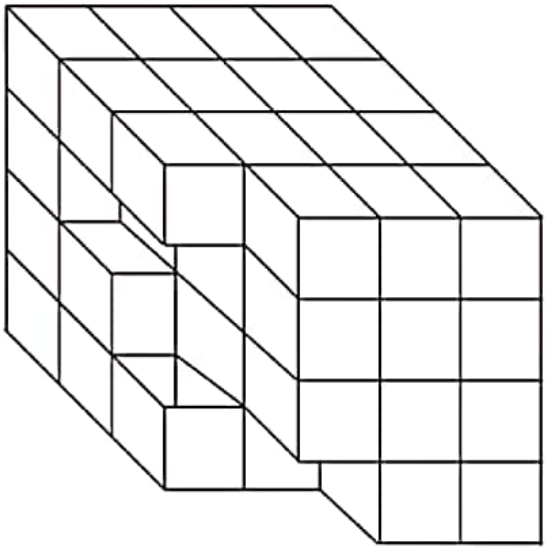
22. Which characteristics are found either in J or in K or in both but not in M ?
(A) P, Q R, S (B) Q, R, S, T
(C) P, Q, T (D) U, V, T

23. Which characteristic is common to G and H but not in M ?
(A) R (B) Q
(C) S (D) B

24. Which characteristics are common to H and J but are not in K ?
(A) P, Q (B) Q, R
(C) R, W (D) Q, W

25. Which characteristic is not found either in F or in L or in both ?
(A) Q (B) S
(C) V (D) U

Directions—Some cubes equal in size have been arranged in the form of a solid block as shown in the given figure below. All the faces of this solid block except the bottom one have been coloured yellow. Now answer the questions given below :



26. How many cubes are not coloured on any face?
(A) 5 (B) 9
(C) 7 (D) 11

27. How many cubes are coloured on one face only ?
(A) 24 (B) 26
(C) 25 (D) 27

28. How many cubes are coloured on two faces only ?
(A) 16 (B) 14
(C) 13 (D) 15

29. How many cubes are coloured on three faces?
(A) 9 (B) 8
(C) 7 (D) 10

30. How many cubes are coloured on four faces ?
(A) 3 (B) 0
(C) 1 (D) 2

Directions—(Q. 31–35) In each question, two statements P and Q are given. They may look factually absured. You have to ignore this absurdity and concentrate only upon the logic involved in each statement. Mark your answer—

(A) If both P and Q are true,
(B) If both P and Q are false or doubtful
(C) If P is true and Q is false
(D) If P is false and Q is true.

31. P : Cups play chess. Chess is a difficult game. Therefore, Cups play a difficult game.

Scanned by CamScanner

Q : Rita is a girl. All girls are timid. Therefore, Rita is timid.

32. P : Some mangoes are apples. All grapes are mangoes. Therefore, all apples are grapes.

Q : Some mangoes are apples. All apples are grapes. Therefore, some Mangoes are grapes.

33. P : Some tables are grass. All stools are grass. Therefore, all tables are stools.

Q : Jackals live in the forests. Cities are in the forest. Therefore, jackals live in the cities.

34. P : All fish can fly. Some fish are birds. All birds are naughty. Therefore, some naughty can fly.

Q : Some fish are birds. All birds are naughty. Therefore, all fish are naughty.

35. P : Some musicians are not rich. All musicians are polite. Therefore, not all polite persons are rich.

Q : All musicians are rich. No rich person is polite. Therefore, musicians are not polite.

Answers with Explanation

1. (C) As in England the chief is Queen so in India the Chief is President.

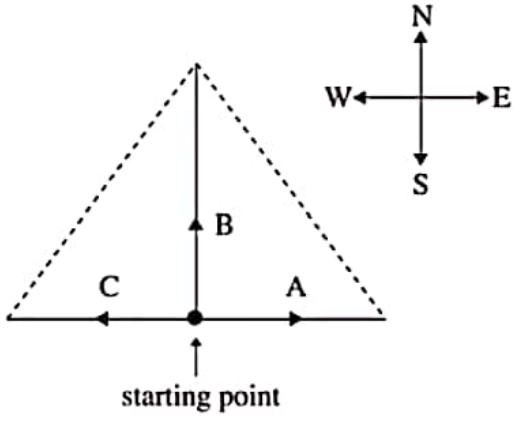
2. (B) As there is Paragraph in Prose so there is stanza in Poetry.

3. (A) As Death is opposite to Birth so 'To bloom is' opposite to 'To fade'.

4. (C) As 'Ancient' and 'Old' are same in meaning so 'Modern' and 'New' are the same.

5. (B) 'Cream' is obtained from 'Milk' so 'Rice' is obtained from 'Paddy'.

6. (D) The routes of A, B and C are as shown in the figure. Therefore, A is in North-West of A.



7. (A) Let the difference between my age and my sister's age be x years.

$\therefore$ My age $= 15 + x$ years

$\therefore$ My mother's age $= 54 - x$ years

$\therefore$ $2(15 + x) = 54 - x$

Or, $x = 8$

My age $= 15 + 8 = 23$ years

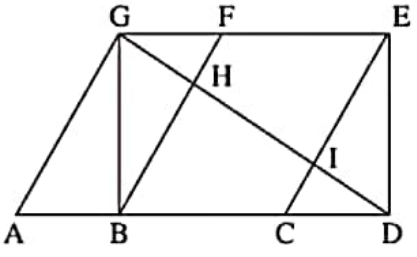
8. (B) The difference of two consecutive terms is increasing by one.

9. (A) The difference of two consecutive terms is 5.

10. (C) The sum of first and second terms is 2^2, the sum of third and fourth terms is 3^2 and so on.

11. (B) 12. (D) 13. (C) 14. (B)

15. (D) In the given figure there are 12 triangles—



1. A G B	2. A G D	3. B G D
4. B H D	5. B G F	6. B G H
7. C E D	8. D I E	9. C I D
10. D G E	11. E I G	12. F G H

16. (C) As a and d have to be together, (A) is not correct. (B) is not correct because it contains 5 boys including e. (D) is not correct because b cannot be teamed with e.

17. (B) As p cannot go with d, therefore (A) and (C) are not correct. (D) is not correct because it contains 4 girls including p.

18. (A) As c cannot go with s, (B) and (D) are not correct and (B) is not correct because s and t have to be together.

19. (C) As b and e cannot be together, the boys members may be either a b c d f or a c d e f. Since c and q have to be together the answer must be (C).

20. (B) As b cannot be teamed with e, (A) is not correct. As there are 5 boys, (C) is not correct. As p cannot go with d, (D) is not correct.

Scanned by CamScanner

For 21 to 25, by comparing the both columns we get the individuals having the different characteristics as given below :

F	T, W, P, R
G	P, Q, R, S, V
H	Q, R, T, V, W
I	P, Q, R, S, T, U, V, W
J	P, Q, S, T, U, W, M
K	P, R, T, V
L	Q, S, U, W, M
M	R, S, U, V, M

21. (D) 22. (C) 23. (B) 24. (D) 25. (C)

26. (B) 4 central cubes from I and II row each from the bottom and one central cube from second column in the third row from the bottom.

27. (A) 8 cubes each from first, second and third row from the bottom.

28. (C) From the bottom in first row 4 corner cubes, in second row 3 corner cubes, from third row 2 corner cubes, one cube in third column, 1 cube in the first column from left and 2 cubes from fourth row.

29. (B) From the bottom one cube in second row, two cubes in third row and 5 cubes in fourth row.

30. (D) From the bottom 2 cubes in fourth row only.

31. (A) 32. (D) 33. (B) 34. (C) 35. (A)

Scanned by CamScanner