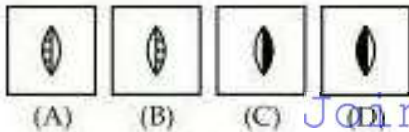# Practice Set-7

Directions—(Q. 1–9) Select the related word/letters/number/figure from the given alternatives.

1. **Question figures**

Answer figures
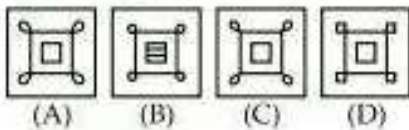

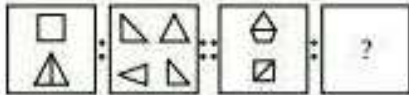
(A)   (B)   (C)   (D)

2. **Question figures**

Answer figures

(A)   (B)   (C)   (D)

3. **Question figures**

Answer figures

(A)   (B)   (C)   (D)
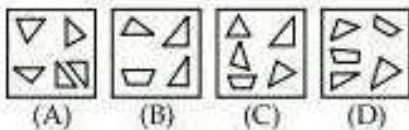
4. ? : JHKI : : TRUS : OMPN

  (A) LOMP   (B) QMPN

  (C) GEHF   (D) GEFH

5. AEJO : ZVQL : : DINS : ?

  (A) WRNJ   (B) WSNI

  (C) WRMH   (D) WSOJ

6. IRTH : HQSG : : ? : RQPO

  (A) OPQR   (B) SRQP

  (C) QPON   (D) PQRO

7. 16 : 64 : : 25 ?

  (A) 55   (B) 110

  (C) 83   (D) 125

8. 5 : 15 : : 40 : ?

  (A) 120   (B) 55

  (C) 60   (D) 45

9.

  (A) 169   (B) 324

  (C) 81   (D) 196

Directions—(Q. 10–18) Select the one which is different from the other three response.

10. (A) Copper   (B) Diamond

    (C) Aluminium   (D) Tungsten

11. (A) Broker   (B) Salesman

    (C) Customer   (D) Hawker

12. (A) Engineer   (B) Potter

    (C) Weaver   (D) Spinner

13. (A) Rose   (B) Jasmine

    (C) Champaka   (D) Hibiscus

14. (A) AIDS   (B) Typhoid

    (C) Cholera   (D) Jaundice

15. (A) SRBH   (B) RHSN

    (C) RQFJ   (D) ODHR

16. (A) 144 72 36   (B) 124 62 31

    (C) 114 57 28   (D) 120 60 30

17. (A) 7832   (B) 2398
    (C) 8987   (D) 6354

18. (A) 64 – 8   (B) 80 – 9
    (C) 49 – 7   (D) 36 – 6

19. Arrange the given words in the order in which they occur in the dictionary and find the last but one word—

    (A) Fauxbourdon   (B) Favonian

    (C) Faubourg   (D) Fatiscent

20. Arrange the following words in the order in which they occur in the dictionary. Which will appear fourth in the dictionary ?

    (A) Nucleonic   (B) Nuclearize

    (C) Nucleosynthesis   (D) Nucleoprotein

21. Arrange the following words in the order in which they occur in the Dictionary :

    (1) Interview   (2) Inventory

    (3) Invention   (4) Interval

    (5) Investment

    (A) 2, 5, 3, 1, 4   (B) 4, 1, 3, 2, 5

    (C) 3, 5, 4, 1, 2   (D) 2, 3, 5, 4, 1

Directions—(Q. 22–26) Choose the correct alternative from the given responses that will complete the series :

22. xy, wv, xy, ut, xy, ?

    (A) yx   (B) sr

    (C) xy   (D) rs

23. PQR, HIJ, DEF, ?

    (A) DEF   (B) CDE

    (C) ABC   (D) BCD

24. NDB, LED, JGG, ?

    (A) HJK   (B) HJI

    (C) LNP   (D) HED

25. 18, 54, 162, 486, 1458, ?

    (A) 2187   (B) 13122

    (C) 39366   (D) 4374

26. 20, 30, 42, 56, 72, ?

    (A) 85   (B) 90

    (C) 87   (D) 95

27. Find the wrong number in the given series :

    7, 15, 32, 65, 138

    (A) 7   (B) 15
    (C) 65   (D) 138

28. A party consisted of a man, his wife, his three sons and their wives and three children in each son's family. How many were there in the party ?

    (A) 22   (B) 13

    (C) 17   (D) 24

29. ₹ 6,500 were divided equally among a certain number of persons. Had there been 15 more persons, each would have got ₹ 30 less. Find the original number of persons—

    (A) 40   (B) 45

    (C) 50   (D) 55

30. From the following alternatives, select the word which cannot be formed using the letters of the given word :

    UNIVERSITY

    (A) INVERT   (B) UNITE

    (C) NEVER   (D) REST

31. In a certain code MEN is written as MIN and WOMEN is written as WUMIN, then how will CHILD be written in the same code ?

    (A) CHELD   (B) CHALD

    (C) CHOLD   (D) CHULD

32. If Y = 2, PEN = 11-22-13, then 10-6-18-24-16 = ?

    (A) JFRXP   (B) QUACK

    (C) QUICK   (D) QUITE

33. Find out the number which belongs to the given group of numbers from the four alternatives.

    5, 25, 90, 35, 60

    (A) 15   (B) 24

    (C) 21   (D) 83

34. If + stand for division

    – stands for equal to

    × stands for addition

    ÷ stand for greater than

    = stands for less than
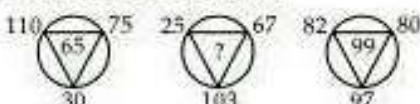
    > stands for multiplication
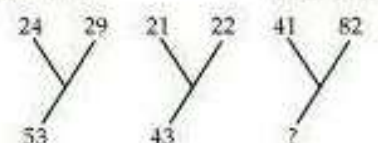
    < stands for subtraction

then of the given alternative which one is correct ?

(A) $5 > 3 \times 7 = 8 > 4 + 2$

(B) $5 < 3 > 7 - 8 > 4 + 2$

(C) $5 \times 3 < 7 \div 8 + 4 < 2$

(D) $5 + 3 > 7 - 8 \times 4 + 2$

Directions—(Q. 35–37) Select the missing number from the given responses.

35.

110   75   25   67   82   80
    65   7   99
    30   103   97

(A) 61   (B) 89

(C) 120   (D) 195

36.

24   29   21   22   41   82
   53   43   ?

(A) 121   (B) 63

(C) 33   (D) 123

37. 2   5   7

6   15   21

10   19   ?

(A) 29   (B) 25

(C) 28   (D) 52

38. Going 60 metre to the South of his house, Kiran turn left and goes another 20 metres, then turning to the North, he goes 40 metre and then starts walking to his house. In which direction is his house from there ?

(A) North

(B) South-East

(C) East

(D) North-West

39. Ram started walking towards East. After I km. he turned South and walked 5 km. Again he turned East and walked 2 km. Finally, he turns to the North and walked 9 km. How far is he from the starting point ?
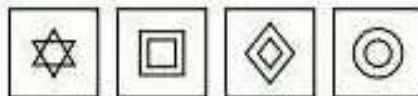
(A) 3 km   (B) 4 km

(C) 5 km   (D) 7 km

40. Four positions of a cube are shown below. If symbol Sun is at the top, what symbol will be at the bottom ?
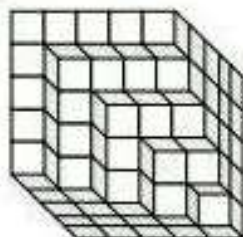
Question Figures

Answer Figures

(A)   (B)   (C)   (D)

41. How many white cubes are there in the given structure ?

(A) 16   (B) 24

(C) 40   (D) 65

42. In the following Venn diagram, identify the number which denotes Doctors who know both Swimming and Dancing.

△ Swimmers

▭ Doctors

○ Dancers

(A) 3   (B) 4

(C) 6   (D) 5

43. Which one of the following diagrams best depicts the relationship among College Graduates, Professional Athletes and Great Scientists ?

(A)   (B)

(C)   (D)
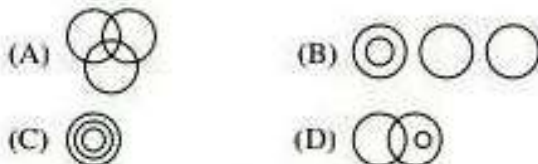
Directions—(Q. 44–45) Two statements are given followed by two conclusions I and II. You have to consider the statements to be true even if they seem to be at variance from commonly known facts. You are to decide which of the given conclusions, if any, follow from the given statements.

44. **Statements :** Mind is a stream of thoughts. Mind is working all the time.

Conclusions :

I. If there is no thought, there is no mind.

II. Thoughtless people will not succeed.

(A) Only conclusion I follows

(B) Only conclusion II follows

(C) Neither conclusion I nor II follows

(D) Both conclusion I and II follow

45. **Statements :** Teachers should have empathy. Student need empathetic approach from their teachers.

Conclusions :

I. Persons without empathy cannot become good teachers.

II. Good teachers understand the problems of their students.

(A) Only conclusion I follows

(B) Only conclusion II follows

(C) Neither conclusion I nor II follows

(D) Both conclusion I and II follows

46. Which answer figure will complete the pattern in the question figure ?

Question Figure

Answer Figures

(A)   (B)   (C)   (D)
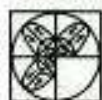
47. Select the answer figure in which the question figure is hidden/embedded.

Question Figure

Answer Figures

(A)   (B)   (C)   (D)
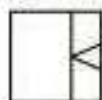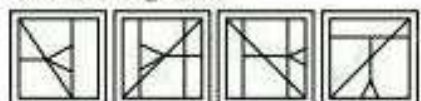
48. A piece of paper is folded and punched as shown below in the question figures. From the given answer figures, indicate how it will appear when opened ?

Question Figure

Answer Figures

(A)   (B)   (C)   (D)
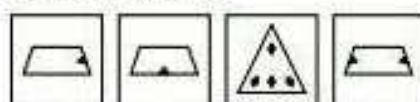
49. Which of the anwer figure is exactly the mirror image of the given figure, when the mirror is held on the line A B ?

Question Figure

Answer Figures

(A)   (B)   (C)   (D)

50. A word is represented by only one set of numbers as given in any one of the alternatives. The sets of numbers given in the alternatives are represented by two classes of alphabets as in two matrices given below. The columns and rows of matrix I and II are numbered from 0 to 4. A letter from these matrices can be represented first by its row and next by its column. e.g., 'A' can be represented by 24, 31 etc., and 'P' can be represented by 11, 32. etc. Identify the set for the letters AELO.

Matrix-I

	0	1	2	3	4
0	A	E	C	B	D
1	C	D	A	E	B
2	B	E	D	C	A
3	D	A	C	B	E
4	B	E	D	A	C

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Matrix-II

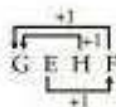|	0	1	2	3	4
0	L	M	O	N	P
1	N	P	L	M	O
2	P	M	O	L	N
3	L	N	P	M	O
4	O	N	L	P	M

(A) 12, 34, 30, 02

(B) 12, 30, 42, 14

(C) 31, 00, 23, 22

(D) 43, 01, 12, 42

Answers with Explanations

1. (D) One part of P.F. (1) is blackened to the other side in P.F. (2). Similarly one part. P.F. (3) will be blackened to the other side in P.F. (4).

2. (A) The upper designs of P.F. (1) are reversed in P.F. (2). So in the case in Answer figure (A) and P.F. (3).
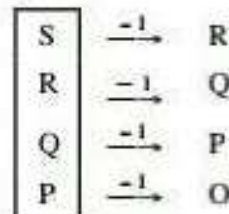
3. (A)

4. (C) As,
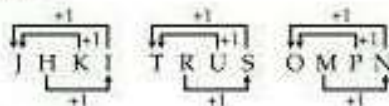
Similarly,

5. (C) As, A Z → 1 + 26 = 27

    E V → 5 + 22 = 27

    A R → 10 + 17 = 27

    E L → 13 + 14 = 27

Similarly,

    D | W | → 4 + 23 = 27

    I | R | → 9 + 18 = 27

    N | M | → 14 + 13 = 27

    S | H | → 19 + 8 = 27

6. (B) As.

Similarly,

7. (D) As, $16 \longrightarrow 64$ over $(\sqrt{16})^3$

Similarly $25 \longrightarrow 125$ over $(\sqrt{25})^3$

8. (A) As, $5 \longrightarrow 15$ over $\times 3$

Similarly $40 \longrightarrow 120$ over $\times 3$

9. (D) As, $(2 + 1 + 5)^2 = 64$

Similarly, $(4 + 3 + 7)^2 = 196$

10. (B) All the rest are metals.

11. (C) All the rest are sales agencies while customer is a purchaser.

12. (A) All the rest are artisans while engineer is an educated and professional.

13. (D) All the rest are flowers while Hibiscus is a bush.

14. (A) AIDS takes long time for infection while the rests take short time for infection.

15. (D) Only in ODHR, there is a vowel.

16. (C) $144 \quad 72 \quad 36$ $124 \quad 62 \quad 31$ $120 \quad 60 \quad 30$

    $\times\frac{1}{2} \quad \times\frac{1}{2}$ $\times\frac{1}{2} \quad \times\frac{1}{2}$ $\times\frac{1}{2} \quad \times\frac{1}{2}$

but

    $144 \quad 57 \quad 28$

    $\times\frac{1}{2} \quad \times\frac{1}{2} \neq 28$

17. (C) Only in 8987 one digit is repeated.

18. (B) $64 \longrightarrow 8$ over $\sqrt{64}$ $49 \longrightarrow 7$ over $\sqrt{49}$ $36 \longrightarrow 6$ over $\sqrt{36}$

But 80 is not the square of 9.

19. (A) Fatiscent, Faubourg, [Fauxbourdon] Favonian

20. (D)

Nuclearize, Nucleonic

Nucleoprotein [Nucleosynthesis]

21. (B) Interval, Interview, Invention, Inventory, Investment.

22. (B)

$$\overset{+1}{\overbrace{xy, wv,}} \overset{+1}{\overbrace{xy, ut,}} xy, sr$$

23. (D)

$$P \overset{-8}{\to} H \overset{-4}{\to} D \overset{-2}{\to} \boxed{\begin{matrix} B \\ C \\ D \end{matrix}}$$
$$Q \overset{-8}{\to} I \overset{-4}{\to} E \overset{-2}{\to}$$
$$R \overset{-8}{\to} J \overset{-4}{\to} F \overset{-2}{\to}$$

24. (A)

$$N \overset{-2}{\to} L \overset{+2}{\to} J \overset{-2}{\to} \boxed{\begin{matrix} H \\ J \\ K \end{matrix}}$$
$$D \overset{+1}{\to} E \overset{+2}{\to} G \overset{+3}{\to}$$
$$B \overset{-2}{\to} D \overset{+3}{\to} G \overset{+4}{\to}$$

25. (D)

$$\underset{\times 3}{18 \quad 54} \quad \underset{\times 3}{16 \quad 2} \quad \underset{\times 3}{48 \quad 6} \quad \underset{\times 3}{14 \quad 5} \quad \underset{\times 3}{8 \quad (45)}$$

26. (B)

$$\underset{+10}{20,} \underset{+12}{30,} \underset{+14}{42,} \underset{+16}{56,} \underset{+18}{72,} (90)$$

27. (D)

$$\underset{\times 2+1}{7} \underset{\times 2+2}{15} \underset{\times 2+1}{32} \underset{\times 2+2}{65} \overset{132}{(138)}$$

28. (C) Total number
$$= 1 + 1 + 3 + 3 + 9$$
$$= 17$$

29. (C) Let the original number of persons be x

$$\frac{6500}{x} - \frac{6500}{x + 15} = 30$$

$$\therefore \quad \frac{6500(x + 15 - x)}{x(x + 15)} = 30$$

$$\therefore \quad 6500 \times 15 = 30(x^2 + 15x)$$

$$30x^2 + 450x = 97500$$

$$3x^2 + 45x = 9750$$

$$3x^2 - 150x + 195x - 9750 = 0$$

$$3x(x - 50) + 195(x - 50) = 0$$

$$\therefore \quad x = 50$$

30. (C) There is only one R in the given word.

31. (C) As,

M → M.	W → W
E → I	O → U
N → N	M → M
	E → I
	N → N

Hence,

$$C \to \boxed{\begin{matrix} C \\ H \\ O \\ L \\ D \end{matrix}}$$
$$H \to$$
$$I \to$$
$$L \to$$
$$D \to$$

Next vowel for E is I and for I is O.

32. (C) $10 \to Q, 6 \to U, 18 \to I,$
$$24 \to C, 16 \to K$$

$$\therefore \quad 10 - 6 - 18 - 24 - 16 = QUICK$$

The numbers are in reverse order of alphabets.

For example $z = 1, y = 2, x = 3$ and so on.

33. (A) All the numbers in the given series are divisible by 5 and so is 15.

34. (C) $5 \times 3 < 7 \div 8 + 4 < 2$
$$\Rightarrow 5 + 3 - 7 > 8 \div 4 - 2$$
$$\Rightarrow 1 > 2 - 2$$
$$\Rightarrow 1 > 0$$

35. (A) As, $110 + 30 - 75 = 65$
and $82 + 97 - 80 = 99$
Similarly, $25 + 103 - 67 = 61$
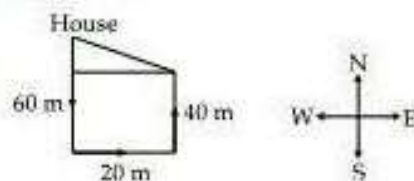
36. (D) As, $24 + 29 = 53$
and $21 + 22 = 43$
Similarly, $? = 41 + 82$
$$= 123$$

37. (A) As, $2 + 5 = 7$
and $6 + 15 = 21$
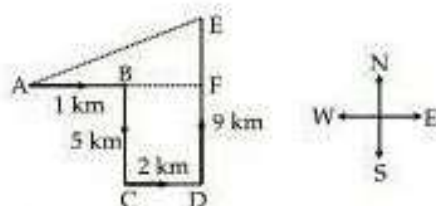Similarly, $10 + 19 = 29$

38. (D)

39. (C)

$AF = 1 + 2 = 3 \text{ km}, EF = 9 - 5 = 4 \text{ km}$

$AE = \sqrt{3^2 + 4^2} = 5 \text{ km}$

40. (A) As symbol ★ is not adjacent to the sum in all the four figures, so ★ will be at the bottom.

41. (C)   42. (B)

43. (A) Some College Graduates may be some professional Athletes and some Great Scientists, similarly professional athletes may be some Great Scientists and some College Graduates and so for Great Scientists.

44. (A) Only I conclusion follows the statement because working all the time will not succeed the people.

45. (B)   46. (A)   47. (A)   48. (D)   49. (B)

50. (A)

Part—II
English Language

Directions—(Q. 1–15) Read the following passage carefully and answer the questions given below it. Certain words/phrases are given in **bold** in the passage to help you locate them while answering some of the questions.

There once lived a shrewd shopkeeper named Makarand. He had a friend, Mihir, who had saved a lot of money. Now, Mihir was keen to go on a pilgrimage, but did not know whom to trust with his precious savings. So he came to Makarand's shop and said, "Friend, please look after my life's savings till I return." Makarand pre-tended to think seriously and said, "No money **spoils** relationships. What if something happens to it when you are not here ? You will no longer be my friend."

As Mihir stood there thinking about this, an old woman entered the shop and bought some things. One of the shopboys gave her less change than he should have. Makarand saw this and pretended to scold the boy, ordering him to return the remaining money to the woman. Mihir, unaware this was an act to make him believe in

Makarand's honesty, said, "I have decided. I will leave the money only with you."

Makarand smiled. "Let's take the bag of coins and bury it in a place that only you and I know of. So, even if something happens to me when you are gone, you will know where your money is." Mihir thought this was a good idea and the two went and hid the bag in a secret place. Mihir left the next day on his pilgrimage, happy his savings were in safe hands. Six months later, he returned, dumped his luggage at home and went to recover his money. Although he searched high and low, there was no sign of the bag.

In panic, he ran to Makarand, who was busy at his shop. When Mihir asked him about the bag, Makarand pretended to be surprised. "But I haven't been that way in all these months. Why don't you search for it again ?" he said, putting on his most innocent look. Mihir had no choice and sadly, he made his way home. On the way, he met the old woman he had seen in Makarand's shop. At the sight of his sad face, she asked him what the **matter** was. Mihir told her the whole story. Then she smiled and whispered a plan to him.

The next day the woman came to Makarand's shop, carrying a big box. "I heard you are a good and honest man. My son went on pilgrimage many months ago and has still not returned. I am worried and have decided to go look for him. Will you look after my box of two hundred gold coins while I am away ?" Makarand could not believe his luck. He was about to become rich at the **expense** of the old woman. He was about to launch into his idea about hiding the box, when an angry Mihir entered the shop. "Where is ...." But before he could complete his sentence, Makarand, afraid of being accused in front of the old woman, said quickly. "I forgot. I had seen some pigs digging around there and had removed your bag to keep it safe." And he handed Mihir the bag he had stolen many months ago. Now the old woman pretended she was seeing Mihir for the first time. "Son, did you also go on a pilgrimage ? Tell me, did you meet my son anywhere ?" Mihir, clutching his precious bag, replied. "Yes, Aunty. I met him on his way home. He should be here in a week." Hearing this the old woman took her box away from Makarand. "Thank you, you have saved me an **unnecessary** trip. Now I will use the money to prepare for my son's welcome !" And the two departed, leaving Makarand staring open-mouthed.

1. Why did Makarand scold his shop assistant for not refunding the correct balance ?

   (A) It was a pretense to trick the customer into buying something more

   (B) To convince Mihir to leave his money behind with him for safekeeping

   (C) Makarand himself was very honest and demanded the same from his employees

   (D) To ensure that the assistant would never steal again

   (E) He knew Mihir trusted the old woman and wanted to make a good impression

2. Why did Mihir approach Makarand to keep his savings while he went on a pilgrimage ?

   (A) Makarand was a clever businessman and would increase the savings

   (B) Makarand was the only one he knew who was not going on the pilgrimage

   (C) Makarand knew of a very safe place to hide the money

   (D) Makarand had an excellent memory and was Mihir's best friend

   (E) Mihir felt that he could trust Makarand

3. Why did Makarand remove Mihir's money from its original hiding place ?

   (A) He was afraid that someone would discover it and steal it

   (B) He was worried that he would forget where it was hidden

   (C) Since Mihir had not returned within six months he had claimed the money

   (D) To teach Mihir a valuable lesson about entrusting money to others

   (E) None of these

4. What was Makarand's initial reaction when Mihir was distressed about having lost his life savings ?

   (A) He asked Mihir to return home as he was very busy

   (B) He comforted him by promising to loan him the money the next day

   (C) He pretended not to know what had happened to the money

   (D) He assured him that he would help find the money

   (E) He asked him to return later as he did not want to discuss it in front of customers

5. Why did Mihir and the old woman hatch a plot ?

   (A) To trick Makarand into returning what rightfully belonged to Mihir

   (B) to swindle Makarand out of his money

   (C) To ruin Makarand's reputation so that he would not cheat people

   (D) To learn how Makarand had spent Mihir's wealth

   (E) None of these

6. Why did Makarand interrupt Mihir when he came to claim his money the second time ?

   (A) He was busy serving a customer and did not want to be distracted

   (B) To prevent the old woman from doubting his integrity

   (C) He had quarrelled with Mihir and they were no longer friends

   (D) He suddenly remembered where he had hidden the money and was anxious to tell him

   (E) None of these

7. Which of the following is **TRUE** in the context of the passage ?

   1. The old woman was the wisest of the villagers.

   2. Mihir was trustworthy and kind to the villagers.

   3. Makarand was greedy and dishonest.

   (A) Only 3   (B) Only 1 and 2
   (C) Only 1 and 3   (D) All 1, 2 and 3
   (E) None of these

8. What upset Mihir when he returned home from the pilgrimage ?

   (A) He could not remember where he had buried his savings

   (B) Makarand had failed to regularly check up on Mihir's savings

   (C) He had lost his entire life savings

   (D) Makarand's refusal to help him search for his savings

   (E) Makarand had revealed where Mihir's savings were hidden to the old woman

9. What did Makarand plan to do with the old woman's money ?

(A) Use it to repay what he had borrowed from Mihir

(B) Keep it safe till her son returned

(C) Hide it where the animals would not be able to dig it up

(D) Keep the money for himself

(E) Invest it in his business so that it would earn interest

10. Why did the old woman help Mihir recover his money ?

(A) She had had a similar experience with Makarand and wanted to teach him a lesson

(B) Mihir had become friends with her son during the pilgrimage

(C) Mihir promised to help her find her son in return

(D) She felt sorry for Mihir who had always been kind to her

(E) Not clearly mentioned in the passage

Directions—(Q. 11–13) Which of the following is **most similar** in meaning to the word given in **bold** as used in the passage.

11. **Matter**

(A) Substance   (B) Problem
(C) Relevance   (D) Material
(E) Object

12. **Expense**

(A) Profit   (B) Amount
(C) Cost   (D) Charge
(E) Rate

13. **Sign**

(A) Authorise   (B) Warning
(C) Gesture   (D) Indication
(E) Notice

Directions—(Q. 14–15) Which of the following is **most opposite** in meaning to the word given in **bold** as used in the passage.

14. **Spoils**

(A) Enhances   (B) Accepts
(C) Increases   (D) Indulges
(E) Recovers

15. **Unnecessary**

(A) Needy   (B) Excessive
(C) Surplus   (D) Avoidable
(E) Essential

Directions—(Q. 16–25) Read each sentence to find out whether there is any grammatical mistake/error in it. The error, if any, will be in one part of the sentence. Mark the number of the part with error as your answer. If there is no error, mark (E).

16. Handicraft exports have an increase/in the past
                  (A)   (B)
year / because of the innovative steps / taken
                      (C)
by the government.   No error
     (D)   (E)

17. SEBI has recently issued / showcause notices
            (A)   (B)
to some / insurance companies seeking its
                     (C)
explanation for not / complying with certain
                    (D)
norms.   No error
                        (E)

18. An investor must / be take into account / many
      (A)   (B)
factors before / making any financial decision.
    (C)   (D)
                    No error
                   (E)

19. The tax treaty between India and Switzerland
                (A)
have / been amended and we / shall be able
            (B)
to obtain information / about any Swiss bank
         (C)
account by next month.   No error
     (D)   (E)

20. Under the scheme banks / provide loan to
            (A)
small and medium / enterprises at two per
    (B)   (C)
cent / lower the market rate.   No error
     (D)   (E)

21. The next meeting can be / hold next week as /
      (A)   (B)
we had the first meeting / over a month ago.
    (C)   (D)
                   No error
                 (E)

22. In his speech/the finance minister stated / that
    (A)   (B)

the new tax law will be / applicable from April
(C)   (D)
1, 2010.   No error
(E)

23. I would advise you/to invest in our company /
(A)   (B)
stock although last year / our profits decline.
(C)   (D)
No error
(E)

24. A current account is a deposit account / which
(A)
is offered by banks mainly / to firms and
(B)   (C)
companies who / need banking facilities very
(D)
frequently.   No error
(E)

25. The committee will discuss / the draft in
(A)   (B)
detail / and will make suggestions for the /
(C)
proper implementing the scheme.   No error
(D)   (E)

Directions—(Q. 26–30) In each question below is given a set of 4 sentences S1, S2, S3 and S4 which form a meaningful paragraph. One of the sentences has been removed. Below each set are provided 5 options, one of which may be used to fill in the missing sentence. The letter of the option which can be used in place of the missing sentence is your answer.

Example S1 Some animals live in lakes.
S2 ....
S3 Its shelf is useful

(A) There are many lakes in India
(B) Other animals live in the sea
(C) They have all been killed
(D) The turtle is one such animal
(E) They are caught regularly

26. **S1** The budget will be announced next week
S2 ....
S3 They expect taxes to be raised
S4 But the government has to take this tough step

(A) People are looking forward to tax cuts

(B) There will be no change in policy
(C) It may be delayed though
(D) Most people are worried
(E) We have a new Finance Minister

27. **S1** We plan to open fifty new branches this year
S2 We have already applied to RBI for licences
S3 ....
S4 We have accordingly issued an advertisement in Employment newspapers last week

(A) We are going to lose our jobs
(B) RBI will definitely approve our application
(C) We will transfer staff to these branches
(D) It will take a long time to get their permission
(E) We do not have sufficient staff to run these branches

28. **S1** Hari was once travelling through a small village
S2 Suddenly it began to rain heavily
S3 He had no umbrella and there were no hotels there
S4 ....
(A) Even his clothes were soaked
(B) Hari was late for the function
(C) He had no choice but to ask a stranger for shelter
(D) Hari was afraid to cross the bridge
(E) The villagers were upset because Hari was late

29. **S1** Bank customers used to complain that branch timings were not convenient to withdraw money
S2 Banks calculated the cost of keeping branches open for longer and everyday
S3 ....
S4 They then came up with the idea of ATM machines to disburse cash

(A) They realized however that it was too expensive
(B) They kept the branch open during normal banking hours
(C) ATM machines soon became popular

(D) Customers did not want this facility

(E) There were many cases of holdups and theft

30. **S1** I was a teacher for many years

S2 I have taught thousands

S3 ....

S4 But there are a few whom I have never forgotten

(A) Some students have difficulty remembering

(B) I do not remember all of them

(C) There are some students who are brilliant

(D) Each student is unique

(E) Many of my students are very successful today

Directions—(Q. 31–35) In each question below a sentence with four words printed in **bold** type is given. These are lettered as (A), (B), (C) and (D). One of these four words printed in **bold** may be either **wrongly spelt or inappropriate** in the context of the sentence. Find out the word which is wrongly spelt or inappropriate if any. The letter of that word is your answer. If all the words printed in **bold** are correctly spelt and also appropriate in the context of the sentence; mark (E) *i.e.* 'All correct' as your answer.

31. The company has **received** a good
         (A)
  responds from people who have **started**
    (B)   (C)
  using its new **services**.   All correct
              (D)   (E)

32. Ways and Means Advances is a **facility** under
                                    (A)
  which the government can **borrow** from RBI
                                (B)
  to meet its **revenue** **recquirements**.
                 (C)   (D)
                              All correct
                                 (E)

33. The government has **ready** **adopted** many
                        (A)   (B)
  recommendations of the Narsimhan Comm-
     (C)
  ittee on banking sector **reforms**.   All correct
                              (D)   (E)

34. Statistics are **crucial** for the government to
                    (A)
  frame **effective** **policies**.   All correct
    (B)   (C)   (D)   (E)

35. We are **finding** it difficult to meet our **targets**
             (A)   (B)
  because of **short** of **funds**.   All correct
                (C)   (D)   (E)

Directions—(Q. 36–40) Which of the phrases (A), (B), (C) and (D) given below should replace the phrase given in **bold** in the following sentence to make the sentence meaningful and grammatically correct. If the sentence is correct as it is and no correction is required, mark (E) as the answer.

36. **Although other parts** the world 20 per cent of the farm area is owned by women, in India women own less than 7 per cent.

(A) If in other parts

(B) However some parts

(C) Where another part of

(D) While in other parts of

(E) No correction required

37. The Indian banking sector is growing rapidly and banks are opening **much of branches** in unbanked areas.

(A) many branches

(B) numerous branch

(C) mostly branch

(D) as much branches as

(E) No correction required

38. Depending on the location you select the cost of setting up a new factory **has vary from** ₹ 50 lakhs to ₹ 10 crore.

(A) is varied between

(B) will vary from

(C) varying about

(D) could vary around

(E) No correction required

39. We have received many complaints from customers and have appointed an author to help us identify the reason for the **various delays**.

(A) variety of delay

(B) various delay

(C) varied delaying

(D) variety delays

(E) No correction required

40. A bank **has loans to its** own employees at interest rates below the rate decided by RBI.

   (A) is giving loans to
   (B) loans their
   (C) can give loans to its
   (D) has given loans for its
   (E) No correction required

Directions—(Q. 41–50) In the following passage there are blanks, each of which has been numbered. These numbers are printed below the passage and against each, five words are suggested, one of which fits the blank appropriately. Find out the appropriate word in each case.

After his able Prime Minister's death, the king wanted one of the late Prime Minister's three sons to take his place. The king wanted to choose the ...(41)... among them for the job. He ...(42)... the three sons to be brought ...(43)... him and set each of them the ...(44)... of filling a room using whatever ...(45)... they could so that there was ...(46)... space left even for an ant.

The ...(47)... sons set to work. The eldest ...(48)... filling his room with garbage which ...(49)... easy to acquire. The second son was ...(50)... and filled the room with cotton but the youngest remained silent and thought for a while.

At the appointed time the king visited each room. The first two rooms were full but there was space for more to sit. When the king entered the third room, the last son lit a candle so the room was full of light. The king was pleased and appointed him Prime Minister.

41. (A) Favourite   (B) Wisest
    (C) Learned   (D) One
    (E) Intelligent

42. (A) Called   (B) Notifies
    (C) Summoned   (D) Command
    (E) Ordered

43. (A) Before   (B) With
    (C) For   (D) Front
    (E) Towards

44. (A) Request   (B) Chance
    (C) Task   (D) Opportunity
    (E) Option

45. (A) Purpose   (B) Reason
    (C) Experiment   (D) Means
    (E) Wealth

46. (A) Not   (B) No
    (C) More   (D) Any
    (E) Even

47. (A) Disappointed   (B) Quarrelsome
    (C) Worthless   (D) Lazy
    (E) Three

48. (A) Son   (B) Busily
    (C) Occupied   (D) Began
    (E) Start

49. (A) Was   (B) Got
    (C) Found   (D) Became
    (E) Made

50. (A) Hasty   (B) Sensitive
    (C) Cleverer   (D) Simpler
    (E) Stunned

Answers with Explanations

1. (B)   2. (E)   3. (E)   4. (C)   5. (A)

6. (E)   7. (A)   8. (C)   9. (D)   10. (E)

11. (B)   12. (C)   13. (D)   14. (E)   15. (E)

16. (A) Write 'have increased'.

17. (C) Write 'their' in place of 'its'.

18. (B) Delete 'be'.

19. (A) Write 'has' in place of 'have'.

20. (D) Write 'lower than the market rate'.

21. (B) Write 'held' in place of 'hold'.

22. (C) Write 'laws' in place of 'law'.

23. (D) Write 'had declined'.

24. (E)

25. (D) Write 'proper' implementation of the scheme'.

26. (D)   27. (B)   28. (C)   29. (A)   30. (B)

31. (B) Write 'response'.

32. (D) Write 'requirements'.

33. (A) Write 'readily'.

34. (E)

35. (C) Write 'shortage'.

36. (D)   37. (A)   38. (C)   39. (A)   40. (C)

41. (B)   42. (E)   43. (A)   44. (C)   45. (D)

46. (B)   47. (E)   48. (D)   49. (A)   50. (C)

Part—III
Quantitative Aptitude

1. If a, b, c, d and e are five consecutive odd numbers, their average is—

   (A) $5(a + 4)$

   $(+ d + e)$

   (D) $a + 4$

2. The average of 20 numbers is 15 and the average of first 5 is 12. The average of the rest is—

   (A) 16   (B) 15

   (C) 14   (D) 13

3. A tradesman sold an article at a loss of 20%. If the selling price had been increased by ₹ 100, then would have been a gain of 5%. The cost price of the article (in ₹) was—

   (A) 100   (B) 200

   (C) 400   (D) 500

4. The price of an article is first decreased by 20% and then increased by 30%. If the resulting price is ₹ 416, the original price of the article is—

   (A) ₹ 350   (B) ₹ 405

   (C) ₹ 400   (D) ₹ 450

5. A man performs $\frac{2}{15}$ of the total journey by train, $\frac{9}{20}$ by bus and the remaining 10 km on foot. His total journey in km is—

   (A) 15·6   (B) 24

   (C) 16·4   (D) 12·8

6. By walking at $\frac{3}{4}$ of his usual speed, a man reaches his office 20 minute later than usual. His usual time is—

   (A) 30 min   (B) 75 min

   (C) 90 min   (D) 60 min

7. If the compound interest on a certain sum for two year at 12% per annum is ₹ 2,544, the simple interest on it at the same rate for 2 years will be—

   (A) ₹ 2,400   (B) ₹ 2,500

   (C) ₹ 2,480   (D) ₹ 2,440

8. The total cost of 8 buckets and 5 mugs is ₹ 92 and the total cost of 5 buckets and 8 mugs is ₹ 77. Find the cost of 2 mugs and 3 buckets—

   (A) ₹ 35   (B) ₹ 70

   (C) ₹ 30   (D) ₹ 38

9. If $\frac{a}{1-a} + \frac{b}{1-b} + \frac{c}{1-c} = 1$, then the value of

   $\frac{1}{1-a} + \frac{1}{1-b} + \frac{1}{1-c}$ is—

   (A) 1   (B) 3

   (C) 4   (D) 0

10. If $(x - 3)^2 + (y - 5)^2 + (z - 4)^2 = 0$, then the value of $\frac{x^2}{9} + \frac{y^2}{25} + \frac{z^2}{16}$ is—

    (A) 12   (B) 9

    (C) 3   (D) 1

11. If $\frac{4x}{3} + 2P = 12$ for what value of P, $x = 6$?

    (A) 6   (B) 4

    (C) 2   (D) 1

12. The value of $\frac{4 + 3\sqrt{3}}{7 + 4\sqrt{3}}$ is—

    (A) $5\sqrt{3} - 8$ (B) $5\sqrt{3} + 8$

    (C) $8\sqrt{3} + 5$ (D) $8\sqrt{3} - 5$

13. If $x\left(3 - \frac{2}{x}\right) = \frac{3}{x}$, then the value of $x^2 + \frac{1}{x^2}$ is—

    (A) $2\frac{1}{9}$ (B) $2\frac{4}{9}$

    (C) $3\frac{1}{9}$ (D) $3\frac{4}{9}$

14. What number must be added to the expression $16a^2 - 12a$ to make it a perfect square ?

    (A) $\frac{9}{4}$ (B) $\frac{11}{2}$

    (C) $\frac{13}{2}$ (D) 16

15. The straight line $4x + 3y = 12$ passes through—

    (A) 1st, 2nd and 3rd quadrant

    (B) 1st, 2nd and 4th quadrant

(C) 2nd, 3rd and 4th quadrant

(D) 1st, 3rd and 4th quadrant

16. The sum of three altitudes of a triangle is—

(A) equal to the sum of three sides

(B) less than the sum of sides

(C) greater than the sum of sides

(D) twice the sum of sides

17. In Δ ABC, $\angle A + \angle B = 65°$, $\angle B + \angle C = 140°$, then find $\angle B$.

(A) 40° (B) 25°

(C) 35° (D) 20°

18. The length of the tangent drawn to a circle of radius 4 cm from a point 5 cm away from the centre of the circle is—

(A) 3 cm (B) $4\sqrt{2}$ cm

(C) $5\sqrt{2}$ cm (D) $3\sqrt{2}$ cm

19. A cyclic quadrilateral ABCD is such that AB = BC, AD = DC, AC $\perp$ BD, $\angle CAD = \theta$. Then the angle $\angle ABC =$

(A) θ (B) $\dfrac{\theta}{2}$

(C) 2θ (D) 3θ

20. The height of an equilateral triangle is 15 cm. The area of the triangle is—

(A) $50\sqrt{3}$ sq cm (B) $70\sqrt{3}$ sq cm

(C) $75\sqrt{3}$ sq cm (D) $150\sqrt{3}$ sq cm

21. Two parallel chords of a circle, of diameter 20 cm lying on the opposite sides of the centre are the lengths 12 cm and 16 cm. The distance between the chords is—

(A) 16 cm (B) 24 cm

(C) 14 cm (D) 20 cm

22. In ΔABC, DE ‖ AC. D and E are two points on AB and CB respectively. If AB = 10 cm and AD = 4 cm then BE : CE is—

(A) 2 : 3 (B) 2 : 5

(C) 5 : 2 (D) 3 : 2

23. A, B and C are the three points on a circle such that the angles subtended by the chords AB and AC at the centre O are 90° and 110° respectively. $\angle BAC$ is equal to—

(A) 70° (B) 80°

(C) 90° (D) 100°

24. If the angles of elevation of a balloon from two consecutive kilometre-stones along a road are 30° and 60° respectively, then the height of the balloon above the ground will be—

(A) $\dfrac{\sqrt{3}}{2}$ km (B) $\dfrac{1}{2}$ km

(C) $\dfrac{2}{\sqrt{3}}$ km (D) $3\sqrt{3}$ km

25. Evaluate : $3 \cos 80° \operatorname{cosec} 10° + 2 \cos 59° \operatorname{cosec} 31°$

(A) 1 (B) 3

(C) 2 (D) 5

26. The value of $0.65 \times 0.65 + 0.35 \times 0.35 + 0.70 \times 0.65$ is—

(A) 1·75 (B) 1·00

(C) 1·65 (D) 1·55

27. How many numbers between 400 and 800 are divisible by 4, 5 and 6 ?

(A) 7 (B) 8

(C) 9 (D) 10

28. If sum of two numbers be a and their product be b, then the sum of their reciprocals is—

(A) $\dfrac{1}{a} + \dfrac{1}{b}$ (B) $\dfrac{b}{a}$

(C) $\dfrac{a}{b}$ (D) $\dfrac{1}{ab}$

29. In a camp of 160 students provisions are available for 10 days. If 40 more students join the camp, how long will the provisions last ?

(A) 5 (B) $6\dfrac{1}{2}$

(C) 8 (D) $12\dfrac{1}{2}$

30. Three taps A, B, C can fill an overhead tank in 4, 6 and 12 hours respectively. How long would the three taps take to fill the tank, if all of them are opened together ?

(A) 2 hr (B) 4 hr

(C) 3 hr (D) 5 hr

31. The perimeter of a rectangle and an equilateral triangle are same. Also, one of the sides of the rectangle is equal to the side of the triangle. The ratio of the areas of the rectangle and the triangle is—

(A) $\sqrt{3} : 1$ (B) $1 : \sqrt{3}$

(C) $2 : \sqrt{3}$ (D) $4 : \sqrt{3}$

32. A solid spherical copper ball, whose diameter is 14 cm. is melted and converted into a wire having diameter equal to 14 cm. The length of the wire is—

(A) 27 cm   (B) $\frac{16}{3}$ cm

(C) 15 cm   (D) $\frac{28}{3}$ cm

33. Discount on a pair of shoes marked at ₹ 475 and discounted at 15%, is —

(A) ₹ 70   (B) ₹ 71·25

(C) ₹ 72   (D) ₹ 72·25

34. The cost price of an article is ₹ 100. A discount series of 5%, 10% successively reduces the price of a article by—

(A) ₹ 4·5   (B) ₹ 14·5

(C) ₹ 24·5   (D) None of these

35. A grinder was marked at ₹ 3,600. After giving a discount of 10% the dealer made a profit of 8%. Calculate the cost price.

(A) ₹ 3,000   (B) ₹ 3,312

(C) ₹ 3,240   (D) ₹ 2,960

36. If $x^2 + 9y^2 = 6xy$, then $x : y$ is—

(A) $1 : 3$ (B) $3 : 2$

(C) $3 : 1$ (D) $2 : 3$

37. In a school $\frac{1}{10}$ of the boys are same in number as $\frac{1}{4}$ of the girls and $\frac{5}{8}$ of the girls are same in number as $\frac{1}{4}$ of the boys. The ratio of the boys to girls in that school is—

(A) $2 : 1$ (B) $5 : 2$

(C) $4 : 3$ (D) $3 : 2$

38. The average of 8 numbers is 27. If each of the numbers is multiplied by 8, find the average of new set of numbers.

(A) 1128   (B) 938

(C) 316   (D) 216

39. In a prep school, the average weight of 30 girls in a class among 50 students is 16 kg and that of the remaining students is 15·5 kg. What is the average weight of all the students in class?

(A) 15·2 kg   (B) 15·8 kg

(C) 15·4 kg   (D) 15·6 kg

40. The average age of a husband and his wife was 23 years at the beginning of their marriage. After five years they have a one-year old child. The average age of the family of three, when the child was born, was—

(A) 23 years   (B) 24 years

(C) 18 years   (D) 20 years

41. If the profit on sale price be 20%, the percentage of profit on cost price is—

(A) 20%   (B) 30%

(C) 22%   (D) 25%

42. A shopkeeper purchased a TV for ₹ 2,000 and a radio for ₹ 750. He sells the TV at a profit of 20% and the radio at a loss of 5%. The total loss or gain is—

(A) Gain ₹ 352·50   (B) Gain ₹ 362·50

(C) Loss ₹ 352   (D) Loss ₹ 300

43. A container containing 400 litre of oil lost 8% by leakage. Oil left in the container is—

(A) 320 litre   (B) 368 litre

(C) 332 litre   (D) 32 litre

44. In an election, three candidates contested. The first candidate got 40% votes and the second got 36% votes. If total number of votes polled were 36000, find the number of votes got by the 3rd candidate.

(A) 8040   (B) 8640

(C) 9360   (D) 9640

45. A train, 120 m long, takes 6 seconds to pass a telegraph post; the speed of the train is—

(A) 72 km/hr   (B) 62 km/hr

(C) 55 km/hr   (D) 85 km/hr

46. A train travelled at a speed of 35 km/hr for the first 10 minute and at a speed of 20 km/hr for the next 5 minute. The average speed of the train for the total 15 minute is—

(A) 30 km/hr   (B) 23 km/hr

(C) 31 km/hr   (D) 29 km/hr

47. What does ₹ 250 amount to in 2 years with compound interest at the rate of 4% in the 1st year and 8% in the second year ?
    - (A) ₹ 280
    - (B) ₹ 280·80
    - (C) ₹ 468
    - (D) ₹ 290·80

48. If a sum of money amounts to ₹ 12,900 and ₹ 14,250 at the end of the 4th year and 5th year respectively at a certain rate of simple interest, then rate of interest is—
    - (A) 10%
    - (B) 12%
    - (C) 18%
    - (D) 20%

Directions—The following table gives the result of a survey based on newspaper reading habits. study the table and answer questions 49 and 50.

Income Group (Salary/Income per month)	Does not read news-papers	Reads news-papers published in regional languages only	Reads only English Paper	Reads both in regional and English Languages
Below ₹ 5,000	162	271	123	52
₹ 5,000 to ₹ 10,000	13	285	206	82
Above ₹ 10,000	21	209	325	187

49. The number of people who read only English newspapers—
    - (A) 975
    - (B) 654
    - (C) 1086
    - (D) 221

50. The total number of people surveyed are—
    - (A) 2040
    - (B) 1086
    - (C) 12961
    - (D) 1936

Answers with Explanations

1. (D)
$$b = a + 2$$
$$c = a + 4$$
$$d = a + 6$$
$$e = a + 8$$
$$\text{Average} = \frac{a + b + c + d + e}{5}$$
$$= \frac{5a + 20}{5} = a + 4$$

2. (A) Sum of 20 number
$$= 15 \times 20 = 300$$
Sum of first 5 number
$$= 5 \times 12 = 60$$
Sum of rest 15 number
$$= 300 - 60 = 240$$

average of rest 15 number
$$= \frac{240}{15} = 16$$

3. (C) (loss % + profit %) of C.P.
$$= 100$$
$$\frac{25}{100} \times \text{C.P.} = 100$$
$$\boxed{\text{C.P.} = 400}$$

Hence, the cost price of the article is ₹ 400.

4. (C) Let original price of the article
$$= ₹ x$$
$$\frac{x \times 80 \times 130}{100 \times 100} = 416$$
$$x = \frac{416 \times 100}{104}$$
$$\boxed{x = ₹ 400}$$

5. (B) Let total journey $= x$ km.
Then,
Total journey by train $= \frac{2x}{15}$

Journey by bus $= \frac{9}{20} x$

Journey on foot $= x - x \left(\frac{2}{15} + \frac{9}{20} \right)$
$$= x - x \left[\frac{35}{60} \right]$$
$$= x - \frac{7}{12} x$$
$$= \frac{5x}{12} \text{ km}$$

According to question,
$$\frac{5x}{12} = 10$$
$$x = \frac{10 \times 12}{5}$$
$$= 24 \text{ km}$$

6. (D)   Let usual time = T min.
and usual speed = 1

Then, $\frac{4}{3}T - T = 20$

$\frac{1}{3}T = 20$

$\boxed{T = 60 \text{ min}}$

7. (A) $C.I = P\left[\left(1 + \frac{r}{100}\right)^n - 1\right]$

$2544 = P\left[\left(1 + \frac{12}{100}\right)^2 - 1\right]$

$2544 = P\left[\left(1 + \frac{3}{25}\right)^2 - 1\right]$

$2544 = P \times \frac{159}{625}$

$P = \frac{2544 \times 625}{159}$

$\boxed{P = 10,000}$

$S.I. = \frac{PRT}{100}$

$= \frac{10000 \times 12 \times 2}{100}$

$\boxed{S.I. = ₹2400}$

8. (A) Let the cost of each bucket = B
and the cost of each mug = m
Then, according to question

$8B + 5m = 92$ ...(1)

$5B + 8m = 77$ ...(2)

One solving eq. (1) and (2), we get

$\boxed{B = 9}$

and $\boxed{m = 4}$

The cost of

$2m + 3B = 2 \times 4 + 3 \times 9$

$= 8 + 27$

$= ₹35$

9. (C) $\frac{a}{1-a} + \frac{b}{1-b} + \frac{c}{1-c} = 1$

3 adding on both side,

$\Rightarrow 1 + \frac{a}{1-a} + 1 + \frac{b}{1-b} + 1 + \frac{c}{1-c} = 1 + 3$

$\Rightarrow \frac{1-a+a}{1-a} + \frac{1-b+b}{1-b} + \frac{1-c+c}{1-c} = 4$

$\Rightarrow \frac{1}{1-a} + \frac{1}{1-b} + \frac{1}{1-c} = 4$

10. (C) $(x-3)^2 + (y-5)^2 + (z-4)^2 = 0$

Taking $x - 3 = 0$

$y - 5 = 0$

$z - 4 = 0$

$x = 3$

$y = 5$

$z = 4$

$\frac{x^2}{9} + \frac{y^2}{25} + \frac{z^2}{16} = \frac{3^2}{9} + \frac{5^2}{25} + \frac{4^2}{16}$

$= \frac{9}{9} + \frac{25}{25} + \frac{16}{16}$

$= 1 + 1 + 1$

$= 3$

11. (C) $\frac{4x}{3} + 2p = 12$

If $x = 6$ then,

$\frac{4 \times 6}{3} + 2p = 12$

$2p = 12 - 8$

$2p = 4$

$\boxed{p = 2}$

12. (A) $\frac{4 + 3\sqrt{3}}{7 + 4\sqrt{3}} = \frac{(4 + 3\sqrt{3})(7 - 4\sqrt{3})}{(7 + 4\sqrt{3})(7 - 4\sqrt{3})}$

$= \frac{28 - 16\sqrt{3} + 21\sqrt{3} - 36}{49 - 48}$

$= 5\sqrt{3} - 8$

13. (B) $x\left(3 - \frac{2}{x}\right) = \frac{3}{x}$

$\Rightarrow 3x - 2 = \frac{3}{x}$

$\Rightarrow 3x - \frac{3}{x} = 2$

$x\frac{-1}{x} = \frac{2}{3}$

Taking square both side—

$x^2 + \frac{1}{x^2} - 2 = \frac{4}{9}$

$\boxed{x^2 + \frac{1}{x^2} = 2\frac{4}{9}}$

14. (A) $16a^2 - 12a = (4a)^2 - 2 \times 4a \times \frac{3}{2} + \left(\frac{3}{2}\right)^2$

If in this expression, $\frac{9}{4}$ must be added then make it a perfect square.
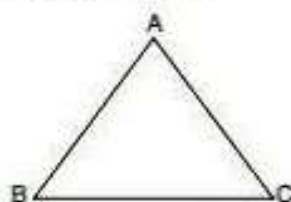
15. (B) Straight line $4x + 3y = 12$.
Passes through 1st, 2nd and 4th quadrant.

16. (B) The sum of three altitudes of a triangle is less than the sum of sides.

17. (B) $\angle A + \angle B = 65°$ ...(1)
$\angle B + \angle C = 140°$ ...(2)

we know that,
$$\angle A + \angle B + \angle C = 180°$$
from equation (1) and (2)
$$\angle A + \angle B + \angle B + \angle C = 205$$
$$180° + \angle B = 205$$
$$\angle B = 205 - 180$$
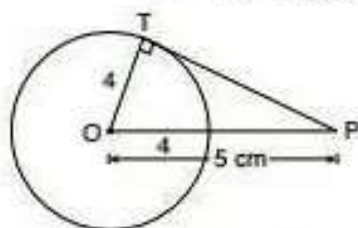$$\boxed{\angle B = 25°}$$

18. (A) Length of tangent
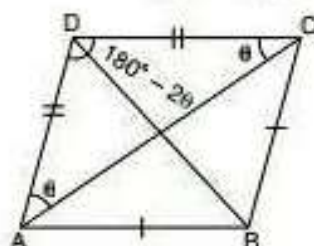$$PT = \sqrt{OP^2 - OT^2}$$
$$= \sqrt{25 - 16}$$
$$= \sqrt{9} = 3 \text{ cm}$$

19. (C) $\angle CAD = \theta$
$AD = DC$

So, $\angle CAD = \angle ACD = \theta$
$\angle ADC = 180 - 2\theta$

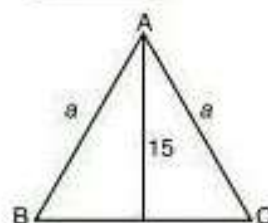ABCD is a cyclic quadrilateral.

So, $\angle ADC + \angle ABC = 180°$
$$180 - 2\theta + \angle ABC = 180°$$
$$\boxed{\angle ABC = 2\theta}$$

20. (C) Area of triangle,
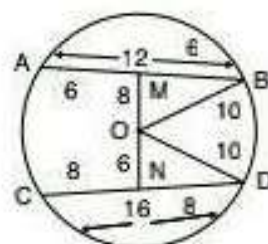$$\frac{1}{2} \times 15 \times a = \frac{\sqrt{5}}{4} a^2$$
$$\boxed{a = 10\sqrt{3}}$$

∴ Area of equilateral triangle
$$= \frac{\sqrt{5}}{4} \times (10\sqrt{5})^2$$
$$= \frac{\sqrt{5}}{4} \times 3 \times 100$$
$$= 75\sqrt{3} \text{ cm}^2$$

21. (C) ∵ Radius $= \frac{20}{2} = 10$ cm

$$OM = \sqrt{10^2 - 6^2} = \sqrt{64}$$
$$= 8 \text{ cm}$$
$$ON = \sqrt{10^2 - 8^2} = \sqrt{36}$$
$$= 6 \text{ cm}$$

The distance between the chords
AB and CD $= 8 + 6 = 14$ cm

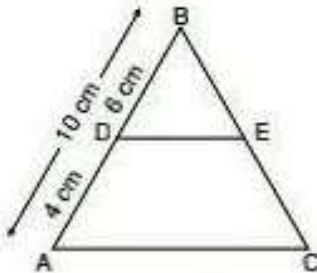22. (D) In Δ ABC...... ΔBDE
then,

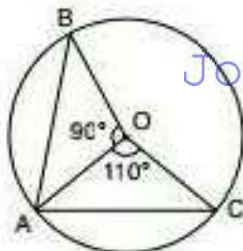$$\frac{AB}{BD} = \frac{BC}{BE}$$

$$\frac{10}{6} = \frac{BE + EC}{BE}$$

$$5BE = 3BE + 3EC$$
$$2BE = 3EC$$
$$\frac{BE}{CE} = 3 : 2$$

23. (B) $\angle BOC = 360° - (90 + 110)$
$$= 160°$$

$$\angle BAC = \frac{\angle BOC}{2}$$
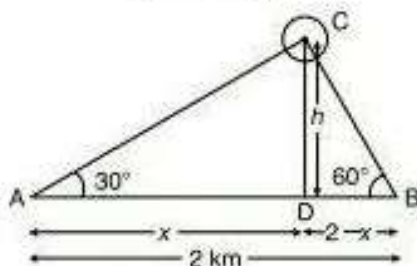$$= \frac{160}{2} = 80°$$

24. (A) Let the height of the balloon above the ground will be h km
In ΔACD,

$$\tan 30 = \frac{h}{x}$$

$$\boxed{x = \sqrt{3}h}$$

In ΔBCD.

$$\tan 60 = \frac{h}{2 - x}$$

$$\sqrt{3}(2 - \sqrt{3}h) = h$$

$$2\sqrt{3} - 3h = h$$

$$2\sqrt{3} = 4h$$

$$h = \frac{2\sqrt{3}}{4} = \frac{\sqrt{3}}{2} \text{ km}$$

25. (D) $3 \cos 80° \ \text{cosec} \ 10 + 2 \cos 59 \ \text{cosec} \ 31$

$$= \frac{3 \cos 80°}{\sin 10°} + \frac{2 \cos 59}{\sin 31}$$

$$= \frac{3 \cos 80°}{\sin (90 - 80)°} + \frac{2 \cos 59°}{\sin (90 - 59)°}$$

$$= \frac{3 \cos 80°}{\cos 80} + \frac{2 \cos 59°}{\cos 59°}$$

$$= 3 + 2 = 5$$

26. (B) $0·65 \times 0·65 + 0·35 \times 0·35 + 0·70 \times 0·65$
We know that
$$a^2 + b^2 + 2ab = (a + b)^2$$
So,
$$(0·65)^2 + (0·35)^2 + 2 \times 0·35 \times 0·65$$
$$= (0·65 + 0·35)^2$$
$$= 1·00$$

27. (A) Take LCM of 4, 5, 6 = 60
Now, look for the first term in between 400 and 800 which is divisible by 60, i.e., 420.
Now, look for the last term which is divisible by 60, i.e., 780.
Now, make A.P. $a = 420$, $d = 60$

$$T_n = a + (n - 1) d$$
$$780 = 420 + (n - 1) 60$$
$$360 = (n - 1) 60$$
$$n - 1 = 6$$
$$n = 7$$

28. (C) Let two numbers are x and y. Then according to question—

$$x + y = a \qquad \qquad ...(1)$$
$$x \times y = b \qquad \qquad ...(2)$$

Sum of their reciprocals

$$= \frac{1}{x} + \frac{1}{y} = \frac{x + y}{xy}$$

From equations (1) and (2)

$$= \frac{a}{b}$$

29. (C) Let provisions last on x days.

So, $160 \times 10 = (160 + 40) \times x$

$$x = \frac{160 \times 10}{200}$$

$$= 8 \text{ days}$$

30. (A) Tap A can fill the tank in 1 hour $= \dfrac{1}{4}$

Tap B can fill the tank in 1 hour $= \dfrac{1}{6}$

Tap C can fill the tank in 1 hour $= \dfrac{1}{12}$

If all of them are opened together, then tank fill in 1 hour

$$= \frac{1}{4} + \frac{1}{6} + \frac{1}{12} = \frac{1}{2}$$

Hence, the three taps of tank to fill the tank in

$$= 2 \text{ hour.}$$

31. (C) Let side of equilateral triangle $= a$, length and breadth of rectangle are l and b respectively.

According to question—

$$2(l + b) = 3a$$

$$2(a + b) = 3a \qquad \text{(Given } l = a)$$

$$2b = a \qquad \qquad \text{...(1)}$$

$$\frac{\text{Area of rectangle}}{\text{Area of triangle}} = \frac{l \times b}{\frac{\sqrt{3}}{4} a^2}$$

$$= \frac{a \times b}{\frac{\sqrt{3}}{4} \times a^2}$$

$$= \frac{4}{\sqrt{3}} \frac{b}{a}$$

$$= \frac{4}{\sqrt{3}} \times \frac{b}{2b} \qquad \text{[from (1)]}$$

$$= \frac{2}{\sqrt{3}}$$

32. (D) Volume of spherical copper ball = Volume of wire

$$\frac{4}{3} \pi (7)^3 = \pi (7)^2 \times h$$

$$h = \frac{28}{3} \text{ cm}$$

33. (B) Discount $= ₹ \dfrac{475 \times 15}{100}$

$$= ₹ 71 \cdot 25$$

34. (B) Single equivalent discount

$$= 5 + 10 - \frac{5 \times 10}{100}$$

$$= 14 \cdot 5\%$$

Hence, reduce the price

$$= \frac{14 \cdot 5}{100} \times 100$$

$$= ₹ 14 \cdot 5$$

35. (A) Cost price

$$= \frac{\text{M. P.} \times (100 - \% \text{ Discount})}{(100 + \% \text{ Profit})}$$

$$= \frac{3600 \times 90}{108}$$

$$= ₹ 3000$$

36. (C) $\quad x^2 + 9y^2 - 6xy = 0$

$$\Rightarrow \qquad (x - 3y)^2 = 0$$

$$\Rightarrow \qquad x - 3y = 0$$

$$x = 3y$$

$$\Rightarrow \qquad \frac{x}{y} = \frac{3}{1}$$

37. (B) Let number of boys = B and number of girls = G.

Then, $\quad \dfrac{1}{10} \times B = \dfrac{1}{4} \times G$

$$\Rightarrow \qquad \frac{B}{G} = \frac{10}{4} = \frac{5}{2}$$

38. (D) The sum of 8 number

$$= 27 \times 8 = 216$$

If each number is multiplied by 8, then Average of new set of number

$$= \frac{8 \times (\text{Sum of 8 num.})}{8}$$

$$= \frac{8 \times 216}{8} = 216$$

39. (B) Average weight of all student

$$= \frac{16 \times 30 + 15 \cdot 5 \times 20}{50}$$

$$= 15 \cdot 8 \text{ kg}$$

40. (C) Let age of husband H year and age of wife = W, then

$$H + W = 23 \times 2 = 46 \qquad \ldots(1)$$

When child is born, then age of child = 0 year

Hence, average of the family of three

$$= \frac{(H + 4) + (W + 4) + 0}{3}$$

$$= \frac{46 + 8}{3} = \frac{54}{3} = 18 \text{ years}$$

41. (D) % profit on SP

$$= \frac{SP - CP}{SP} \times 100$$

$$20 = \frac{SP - CP}{SP} \times 100$$

$$5 \, CP = 4 \, SP$$

$$\Rightarrow \qquad SP = \frac{5}{4} CP$$

% profit on CP

$$= \frac{SP - CP}{CP} \times 100$$

$$= \frac{\left(\frac{5}{4} - 1\right)}{1} \times 100$$

$$= \frac{1}{4} \times 100 = 25\%$$

42. (B) Total CP = 2000 + 750

$$= ₹2750$$

Total SP $$= \frac{2000 \times 120}{100} + \frac{750 \times 95}{100}$$

$$= ₹3112 \cdot 50$$

Total gain = SP − CP

$$= ₹3112 \cdot 50 - 2750$$

$$= ₹362 \cdot 50$$

43. (B) Oil left in the container

$$= \frac{400 \times (100 - 8)}{100} = 4 \times 92$$

$$= 368 \text{ litre}$$

44. (B) The 3rd candidate got

$$= [100 - (40 + 36)]\% = 24\%$$

The number of votes got by 3rd candidate

$$= \frac{24}{100} \times 36000 = 8640$$

45. (A) Speed of train

$$= \frac{120}{6} \text{ m/sec}$$

$$= \frac{20 \times 18}{5} \text{ km/hr}$$

$$= 72 \text{ km/hr}$$

46. (A) The average speed of train

$$= \frac{\left(35 \times \frac{10}{60}\right) + 20 \times \frac{5}{60}}{\left(\frac{15}{60}\right)}$$

$$= \frac{350 + 100}{15}$$

$$= 30 \text{ km/hr}$$

47. (B) We know that for 1st year S.I. = C. I.

So, after 1st year

$$\text{Amount} = \frac{250 \times 4 \times 1}{100} + 250$$

$$= ₹260$$

After 2nd year

$$\text{Amount} = 260 \left(1 + \frac{8}{100}\right)^1$$

$$= \frac{260 \times 27}{25}$$

$$= ₹280 \cdot 80$$

48. (C) Here is a Direct Formula for SI

$$\text{Rate} = \frac{(a - b) \times 100}{at_2 - bt_1}\%$$

Hence, Rate $$= \frac{(14250 - 12900) \times 100}{12900 \times 5 - 14250 \times 4}\%$$

$$= \frac{1350 \times 100}{64500 - 57000}\%$$

$$= 18\%$$

49. (B) The number of people who read only English newspapers

$$= 123 + 206 + 325$$

$$= 654$$

50. (D) Total number of people surveyed

$$= (162 + 13 + 21) + (271 + 285 + 209)$$

$$+ (123 + 206 + 325) + (52 + 82 + 187)$$

$$= 1936$$

Part—IV
General Awareness

1. The term 'Missile Man of India' is normally associated (after Pokharan-II blasts) with—
   (A) Atal Behari Vajpayee
   (B) R. Chidambaram
   (C) A.P.J. Abdul Kalam
   (D) General V.P. Malik

2. The words 'Satyameva Jayate' in the State Emblem of India, have been adopted from which one of the following ?
   (A) Brahma Upanishad
   (B) Mudgala Upanishad
   (C) Mundaka Upanishad
   (D) None of these

3. Name the only person who was awarded Nobel Prize, Padma Shree, Padma Bhushan, Padma Vibhushan and Bharat Ratna ?
   (A) J. L. Nehru   (B) Indira Gandhi
   (C) Mother Teresa   (D) Aurobindo Ghosh

4. Approximately how many kilometres are represented by 1° of latitude ?
   (A) 421 km   (B) 91 km
   (C) 111 km   (D) 211 km

5. Which region of the root provides the penetration force ?
   (A) Root cap
   (B) Maturation region
   (C) Zone of cell division
   (D) Elongation region

6. Which city is known as the Cockpit of Europe ?
   (A) Venice   (B) Dublin
   (C) Barcelona   (D) Belgium

7. When was SAARC formed ?
   (A) November 1984   (B) December 1985
   (C) December 1986   (D) March 1989

8. In which types of rocks, would you find coal and petroleum ?
   (A) Igneous   (B) Sedimentary
   (C) Granite   (D) Metamorphic

9. Sunlight always overcomes the lights of the stars. The fading away of stars in the presence of the sun is known as—
   (A) eclipse of the stars
   (B) occultation
   (C) binding effect
   (D) None of the above

10. Puducherry territory is scattered in several states. Which state does not share boundary with Puducherry ?
    (A) Andhra Pradesh
    (B) Kerala
    (C) Karnataka
    (D) Tamil Nadu

11. Japan's attack on which place brought the USA into second World War ?
    (A) Seychelles   (B) Pearl Harbour
    (C) Florida   (D) New York

12. Commercial services was started on All India Radio for the first time in—
    (A) 1957   (B) 1959
    (C) 1967   (D) 1969

13. Saheed-i-Azam Bhagat Singh, Rajguru and Sukhdev were executed by the British Government on March 23, 1931. In which of the following cases they were implicated ?
    (A) Meerut conspiracy
    (B) Kakori conspiracy
    (C) For lobbing bomb in the Assembly Hall
    (D) Lahore conspiracy

14. What is the Fly Leaf ?
    (A) Thin paper sheet for making packaging material
    (B) A blank page at the beginning or end of a book
    (C) A marker in a book
    (D) A sheet of paper next to the main title of the book

15. Now-a-days Kalinga is known as—
    (A) Odisha   (B) Kohima
    (C) Karnataka   (D) Maharashtra

16. Tughlaq dynasty occupied Delhi throne after decline of—

(A) Suri dynasty   (B) Slave dynasty

(C) Lodhi dynasty   (D) Khilji dynasty

17. MAD stands for—

  (A) Most active Disease

  (B) Mica Aluminium Duo

  (C) Mutually Assured Death

  (D) Mutually Assured Destruction

18. Which has the highest share of electrical power generation in India ?

  (A) Thermal power

  (B) Nuclear power

  (C) Hydro-power

  (D) Naphtha-based and gas-based power

19. "Water-water everywhere but not a drop to drink" who stated these lines in a poem ?

  (A) John Milton

  (B) Samuel Taylor Coleridge

  (C) Lord Byron

  (D) P.B. Shelley

20. How can a person move on a hard icy surface ?

  (A) He should use roller skates

  (B) He should hop, sneeze, jump an step in the direction which is opposite to the direction of his required movement

  (C) He should hop, sneeze, jump and step in the directions in which the movement is required

  (D) He should skid on his knees and hands

21. Kolar Gold Mines are in this state—

  (A) Karnataka   (B) Bihar

  (C) Odisha   (D) Madhya Pradesh

22. The Permanent Secretariat of SAARC is at—

  (A) Islamabad   (B) New Delhi

  (C) Kathmandu   (D) Colombo

23. If the child loses water and vital nutrients due to diaorrhea and fever, then the housewife must treat him with—

  (A) ORS

  (B) Penicillin capsules

  (C) Crocin Syrup

  (D) Plain water without salt

24. The Shimla Conference was held in—

  (A) 1943   (B) 1945

  (C) 1942   (D) 1944

25. He was an Italian navigator. He explored Venezuela, Gulf of Mexico. The USA was named 'America' after him. His game is—

  (A) Amerigo Vespucci

  (B) Vasco De Gamma

  (C) Columbus

  (D) Andreas Vesalius

26. Which of the following Harappan sites had a dock ?

  (A) Harappa   (B) Mohenjodaro

  (C) Lothal   (D) Alamgirpur

27. The great Hindu law-giver was—

  (A) Kapil   (B) Banabhatta

  (C) Kautilya   (D) Manu

28. Who were the first to issue gold coins ?

  (A) Indo Greeks   (B) Shakas

  (C) Parthians   (D) Kushans

29. India was invaded by Timur Lame in—

  (A) 1335   (B) 1385

  (C) 1389   (D) 1398

30. Jallianwala Bagh massacre occurred on—

  (A) January 30, 1918   (B) April 13, 1919

  (C) August 14, 1920   (D) July 2, 1930

31. Who is the author of the concept of Antyodaya ?

  (A) Mahatma Gandhi

  (B) Vinoba Bhave

  (C) Sri Aurobindo

  (D) Jai Prakash Narayan

32. At which one of the following places did Mahatma Gandhi first start his Satyagraha in India ?

  (A) Ahmedabad   (B) Bardoli

  (C) Champaran   (D) Kheda

33. Which of the following was in power in the U.K. when India got Independence ?

  (A) Labour Party

  (B) Liberal Party

(C) Conservative Party

(D) Socialist Party

34. The earth is at the largest distance from the Sun on—

(A) June 21　　　(B) January 3

(C) July 4　　　(D) June 22

35. The speed of rotation of the earth is—

(A) 25 km/sec　　　(B) 31 km/sec

(C) 39·5 km/sec　　　(D) 9·72 km/sec

36. Atmospheric humidity is measured by—

(A) Psychrometer　　　(B) Anemometer

(C) Lysimeter　　　(D) Hydrometer

37. Which is the world's largest desert ?

(A) Sahara　　　(B) Gobi

(C) Thar　　　(D) Takala Makan

38. Lakshdweep Islands are the product of—

(A) Volcanic activity

(B) Wave action

(C) Sea-floor expansion

(D) Reef formation

39. Rana Pratap Sagar plant is associated with—

(A) Nuclear Power　　　(B) Solar Energy

(C) Hydroelectricity　　　(D) Irrigation

40. The first session of the Constituent Assembly was held in—

(A) Bombay　　　(B) Kolkata

(C) Lahore　　　(D) New Delhi

41. The Prime Minister—

(A) is head of government

(B) is the leader of Lok Sabha

(C) may change the portfolios of the ministers at will

(D) may do all the above

42. Who was the first Speaker of the Lok Sabha ?

(A) Mavalankar　　　(B) P. Upendra

(C) Hukam Singh　　　(D) Baliram Bhagat

43. The only Union Territory which has a High Court of its own—

(A) Delhi　　　(B) Lakshadweep

(C) Chandigarh　　　(D) Daman and Diu

44. Railways is a subject on the—

(A) Concurrent list　　　(B) Union list

(C) State list　　　(D) Residual list

45. Panchayati Raj was started in the country in—

(A) 1957　　　(B) 1952

(C) 1959　　　(D) 1951

46. A rolling plan is a plan for—

(A) One year

(B) Three year

(C) Five year

(D) Year-to-year basis

47. India's wage policy is based on—

(A) Cost of living

(B) Standard of living

(C) Productivity

(D) None of the above

48. Ten rupee notes bear the signature of—

(A) President

(B) Finance Minister

(C) Secretary Minister of Finance

(D) Governor, Reserve Bank of India

49. Which of the following taxes is not levied by the Union Government ?

(A) Wealth Tax　　　(B) Excise Duty

(C) Profession Tax　　　(D) Income Tax

50. Highest milk producer in India is—

(A) Uttar Pradesh　　　(B) Gujarat

(C) Punjab　　　(D) Haryana

Answers with Explanations

1. (C) A. P. J. Abdul Kalam is propularly known as Missile Man of India for his work on the development of Ballistic Missile and launch vehicle technology.

2. (C) 'Satyameva Jayate' is taken from the ancient Indian Scripture Mundaka Upanishad.

3. (C) Among the options Mother Teresa received all the awards mentioned in the question.

4. (C)

5. (D) It is the action of cellular elongation which pushes the root tip with the root cap, forward, through and between the soil.

6. (D)

7. (B) SAARC—The South Asian Association for Regional Cooperation is an organisation of South Asian nations, which was established on 8th Dec., 1985 when the governments of Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka formerly adopted its charts providing for the promotion of economic and social progress, cultural development with the South Asian region.

8. (B)   9. (D)

10. (C) The territory is composed of enclaves on the Coramendel Coast of Tamil Nadu and Andhra Pradesh, with Mahe forming two enclaves on the Coast of Kerala.

11. (B) On the morning of Dec. 7, 1941, The Japanese launched a surprise attack on the US Naval Base at Pearl Harbour near Honululu Hawaii. America had finally joined World War-II.

12. (C)

13. (D) Bhagat Singh, Rajguru and Sukhdev were sentenced to death in the Lahore conspiracy case and ordered to be changed on 24 March, 1931.

14. (B) A blank page at the beginning or end of a book is called fly leaf, which is found/seen in **GOI** (Government of India) published books publications and indicates the beginning and end of book matter.

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

19. (B) These lines were written by Samuel Taylor Coleridge in his famous poem 'The Rime of Ancient Mariner'.

20. (D)

21. (A) Kolar Gold fields is a mining town in Bangarpet Taluk, in the Kolar District of Karnataka State.

22. (C)   23. (A)

24. (B) Viceroy Lord Wavell organised a conference of the political leaders of all shades to solve the constitutional problem at Shimla on 25th June, 1945.

25. (A) Amerigo Vespucci was an italian explorer, financier, navigator and cartographer. His discovery of super continent came to be termed as 'America', probably deriving its name from the feminized latin version of Vesupucci's first name.

26. (C)   27. (D)   28. (D)   29. (D)   30. (B)

31. (B)   32. (C)   33. (A)   34. (C)   35. (D)

36. (A)   37. (A)   38. (D)   39. (C)   40. (D)

41. (D)   42. (A)   43. (A)   44. (B)   45. (C)

46. (A)   47. (A)   48. (D)   49. (C)   50. (A)