INTERNATIONAL SOCIETY FOR OLYMPIAD

Empowering children to become Global Olympiad Champions

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MATHS OLYMPIAD

PRACTICE BOOK

GRADE 8

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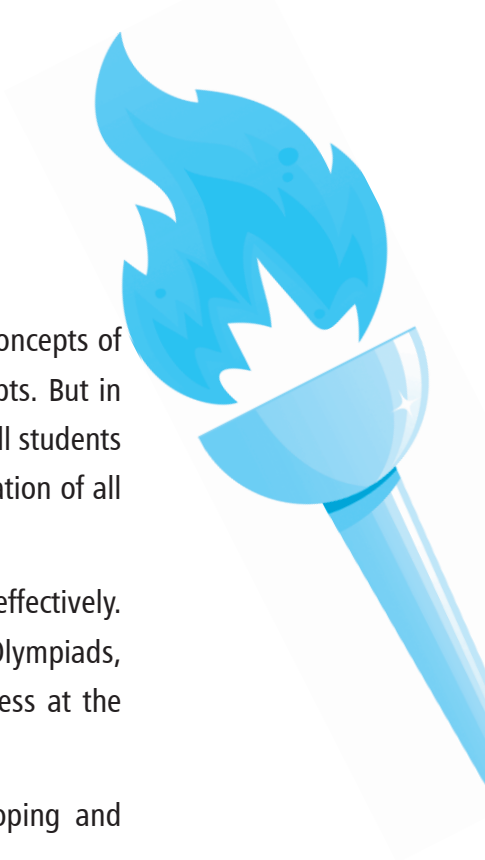
Preface



Our education system effectively provides an introduction to the concepts of Math and Science and helps us understand the underlying concepts. But in its overly generalized approach, which aims to enlighten and test all students of varying caliber and interests, it leaves the exploration of application of all these concepts completely on the students.

This workbook is designed to enable students to explore Maths effectively. Designed in accordance with the requirements of the Maths Olympiads, the workbook is an efficient tool to achieve comprehensive success at the **ISFO – Maths Olympiad.**

The main aim of this workbook is to assist students in developing and improving their ability to solve problems.

Each chapter of the book consists of 3 sets of questions.

- **Section A** (Mathematical Reasoning) : This section is created to test the knowledge of mathematical concepts and topic pertaining to the respective grades.
- **Section B** (Everyday Maths) : This section deals with the application.
- **Section C** (BrainBox) : Questions to prepare students with HOTS (Higher Order Thinking Skills) based on the syllabus provided.

Logical Reasoning section is provided to equip students with verbal and non-verbal analysis and reasoning skills.

Sample Test Papers and Answer keys have been provided to accelerate the learning process.

Contents

Chapter 1

Rational Numbers

SECTION - A : MATHEMATICAL REASONING

1. The additive inverse of $-1\frac{1}{7}$ is

a. $\frac{7}{8}$ b. $+\frac{8}{7}$

c. $\frac{4}{8}$ d. $-\frac{6}{7}$

2. The quotient, when the sum of $\frac{35}{6}$ and $\frac{23}{12}$ is divided by their difference is

a. $\frac{72}{282}$ b. $\frac{282}{558}$

c. $\frac{93}{47}$ d. $\frac{558}{72}$

3. Which of the following is true for the given numerical expression?

$$\frac{7}{5}+\left(-\frac{6}{8}\right)=-\frac{6}{8}+\frac{7}{5}$$

a. Addition of rational numbers is commutative.

b. Rational numbers are closed under addition.

c. Addition of rational numbers is associative.

d. Rational numbers are distributive under addition.

4. Which of the following is in increasing order?

a. $\frac{-15}{4}, \frac{-7}{2}, \frac{-13}{4}, \frac{-1}{8}$

b. $\frac{-2}{7}, \frac{3}{4}, \frac{4}{3}, \frac{7}{8}$

c. $\frac{-14}{4}, \frac{-13}{5}, \frac{-13}{4}, \frac{-14}{3}$

d. $\frac{-29}{5}, \frac{-8}{9}, \frac{-5}{8}, \frac{-16}{3}$

5. If we multiply a fraction by itself and divide the product by its reciprocal, the fraction thus obtained is $18\frac{26}{27}$. What is the original fraction?

a. $2\frac{2}{3}$ b. $3\frac{3}{3}$

c. $2\frac{1}{2}$ d. None of these

6. How many prime numbers exist in $6^7 \times 35^3 \times 11^{10}$?

a. 30 b. 32

c. 28 d. 35

7. If n is a natural number then $n(n+1)(n+2)(n+3)$ is always divisible by

a. 15 b. 16

c. 24 d. 26

8. $\frac{1}{5}$ of a number is equal to $\frac{5}{8}$ of the second number. If 35 is added to the first number, then it becomes 4 times the second number. What is the value of the second number?

a. 125 b. 70

c. 40 d. 25

9. The LCM of two numbers is 421. What is the HCF of these two numbers?

a. 1 b. 0

c. 21 d. None of these

10. The smallest rational number is

a. 0 b 1

c. –1 d. None of these

11. The least value of X + Y so that the number 67893XY is divisible by 8, where X and Y are different positive integers, is

a. 1 b. 2

c. 4 d. None of these

12. The rational number which is not lying between $\frac{-5}{2}$ and $\frac{7}{2}$ is

a. $\frac{3}{2}$ b. $\frac{-1}{2}$

c. $\frac{5}{2}$ d. $\frac{-7}{2}$

13. Which of the following rational numbers verify?

$x \times (y + z) = (x \times y) + (x \times z)$

a. $\frac{-4}{7}, \frac{3}{8}, \frac{12}{-13}$

b. $\frac{4}{5}, \frac{-6}{7}, \frac{-2}{3}$

c. $\frac{-2}{3}, \frac{3}{8}, \frac{-2}{7}$

d. All of these

14. The value of the letters A and B, respectively in

$$\begin{array}{r} \mathbf{A\ B} \\ \times\ \mathbf{6} \\ \hline \mathbf{BBB} \end{array}$$

are

a. 7, 4 b. 8, 8

c. 2, 2 d. 1, 0

15. The value of A + B, if the sum of the two digit numbers 5A and B3 is 65, is

a. 5 b. 3

c. 4 d. 8

16. In a division sum, the remainder is 6 and the divisor is 5 times the quotient and is thus obtained by adding 2 to thrice of the remainder. The dividend is

a. 89 b. 88

c. 86 d. 85

17. If M39048458N is divisible by 8 and 11, where M and N are one digit integers, then the value of M and N, respectively are

a. 7, 8

b. 8, 6

c. 6, 4

d. 5, 4

18. What is unit digit of 2^9?

a. 3 b. 4

c. 1 d. 2

19. If x is a one digit prime number, then for how many values of x, $x^2 + 7$ is also a prime number?

a. 1 b. 2

c. 3 d. 4

20. If $\frac{16}{24} = \frac{x}{60}$, then the value of x is

a. 40

b. 30

c. 25

d. 24

SECTION - B : EVERYDAY MATHEMATICAL

21. There are 35 steps in a temple. By the time Chithra comes down two steps, Madhu goes up one step. If they start simultaneously and keep their speed uniform, then at which step from the bottom will they meet each other?

a. 9^{th} step b. 8^{th} step

c. 12^{th} step d. 13^{th} step

22. A watch ticks 90 times in 95 seconds and another watch ticks 315 times in 323 seconds. If both the watches start together, how many times will they tick together in the first hour?

a. 101 b. 102

c. 103 d. 104

23. Look at the table given below.

Materials	Recycled
News paper	$\frac{5}{12}$
Glass	$\frac{5}{8}$
Cans	$\frac{3}{5}$
Plastic bags	$\frac{3}{4}$

Which of the following items have a recycled amount less than $\frac{1}{2}$?

a. Newspaper b. Glass

c. Cans d. Plastic bags

24. A skirt is $30\frac{5}{4}$ cm long, and has a border of golden lace of length $4\frac{1}{4}$ cm. How long will the skirt be if the lace is let down?

a. 27

b. $27\frac{1}{4}$

c. $27\frac{5}{4}$

d. $27\frac{1}{2}$

25. Chhavi has to cut circles of diameter $1\frac{1}{4}$ cm from a coloured paper strip of dimensions $8\frac{3}{4}$ cm by $1\frac{1}{4}$ cm. How many circles can she cut?

a. 7 b. 8

c. 10 d. 11

SECTION - C : BRAINBOX

26. The value of $1 \div \frac{1}{1 \div \frac{1}{1 \div \frac{1}{3}}}$ is

a. 3

b. $\frac{2}{3}$

c. $\frac{3}{2}$

d. $\frac{4}{3}$

27. If two fractions, each of which has a value between 0 and 1, are multiplied together, then the product will be

a. always greater than either of the original fractions.

b. always less than either of the original fractions.

c. sometimes greater and sometimes less than either of the original fractions.

d. the same.

28. The greatest number that will divide 37, 109 and 157 so as to leave the same remainder in each case is

a. 20

b. 22

c. 24

d. 26

29. x, y and z are three consecutive odd numbers such that $yz + xz + xy = 1583$ Which of the following cannot be the value of x, y or z?

a. 21 b. 23

c. 25 d. 27

30. Read the following statements.

Statement 1: Division of rational numbers are commutative.

Statement 2: Division of rational numbers are not associative.

Which of the following is the correct option?

a. Statement 1 is true and statement 2 is false.

b. Statement 1 is false and statement 2 is true.

c. Both statement 1 and statement 2 are true.

d. Both statement 1 and statement 2 are false.

Darken your choice with HB pencil

1.	a	b	c	d	9.	a	b	c	d	17.	a	b	c	d	25.	a	b	c	d
2.	a	b	c	d	10.	a	b	c	d	18.	a	b	c	d	26	a	b	c	d
3.	a	b	c	d	11.	a	b	c	d	19.	a	b	c	d	27	a	b	c	d
4.	a	b	c	d	12.	a	b	c	d	20.	a	b	c	d	28	a	b	c	d
5.	a	b	c	d	13.	a	b	c	d	21.	a	b	c	d	29	a	b	c	d
6.	a	b	c	d	14.	a	b	c	d	22.	a	b	c	d	30	a	b	c	d
7.	a	b	c	d	15.	a	b	c	d	23.	a	b	c	d					
8.	a	b	c	d	16.	a	b	c	d	24.	a	b	c	d					

Chapter
2

Exponents and Powers

SECTION - A : MATHEMATICAL REASONING

1. By solving $(6^0 - 7^0) \times (6^0 + 7^0)$, we get

a. 0 b. 1

c. –1 d. None of these

2. The value of $x + 3(x)^x$, when $x = 1$, is

a. 1 b. 2

c. 4 d. 10

3. If $\frac{8}{7^2} \times 7^x - 2 \times 7^{x-2} = 42$, then x is

a. 1 b. 2

c. 3 d. 0

4. If $(125)^{\frac{2}{3}} \times (27)^{-\frac{2}{3}} = \frac{1}{15^y}$, then the value of y is

a. $y = 2$ b. $y = 1$

c. $y = 3$ d. $y = 0$

5. $\left(\frac{1}{x^2} - \frac{1}{y^2}\right) \div \left(\frac{2}{x} + \frac{2}{y}\right) \times \frac{8xy}{y - x}$ is equal to

a. 2 b. 8

c. 3 d. 4

6. $(0.00243)^{\frac{2}{5}}$ equals to

a. 1.09 b. 0.10

c. 0.09 d. 1.10

7. The value of $\left\{(216)^{\frac{2}{3}}\right\}^{\frac{1}{2}}$ is

a. 3 b. 6

c. 9 d. 7

8 If $P = \frac{5 + xyz}{2y - 7}$, then y is equal to

a. $\frac{5 - 7P}{2P - xz}$

b. $\frac{5 - 7P}{2P + xz}$

c. $\frac{5 + 7P}{2P - xz}$

d. $\frac{5 + 7P}{2P + xz}$

9. The multiplicative inverse of $\left(-\frac{5}{9}\right)^{-99}$ is

a. $\left(-\frac{5}{9}\right)^{99}$

b. $\left(\frac{5}{9}\right)^{99}$

c. $\left(-\frac{9}{5}\right)^{99}$

d. $\left(\frac{9}{5}\right)^{99}$

10. The value $\frac{9(xy^2)^{-1}}{21x^2} \div \frac{3x^{-1}y^4}{7(x^2y^3)^{-2}}$ is

a. $\frac{1}{x^6y^{12}}$ b. x^6y^{12}

c. $\left(\frac{x}{y^2}\right)^6$ d. $\left(\frac{y^2}{x}\right)^6$

11. If $\frac{p}{q} = \left(\frac{2}{3}\right)^{-2} \div \left(\frac{2}{5}\right)^{-1}$, then the value of $\left(\frac{p}{q}\right)^{-3}$ is

a. $\frac{729}{1000}$ b. $\frac{1000}{729}$

c. $\frac{-729}{1000}$ d. $\frac{-1000}{729}$

12. The usual form of 1.0001×10^9 is

a. 1000100000 b. 100100000

c. 110010001 d. 10000100000

13. The value of $(1331)^{\frac{-2}{3}}$ is

a. -121 b. $\frac{-1}{121}$

c. $\frac{1}{121}$ d. $\frac{1}{-121}$

14. The negative exponent of $\left[\left(\frac{6}{7}\right)^3\right]^{-2}$ is

a. $\left(\frac{6}{7}\right)^6$

b. $\left(\frac{-7}{6}\right)^6$

c. $\left(\frac{7}{6}\right)^{-6}$

d. $\left(\frac{6}{7}\right)^{-6}$

15. If $\left(\frac{6}{13}\right)^{-4} \times \left(\frac{6}{13}\right)^{3m} = \left(\frac{6}{13}\right)^5$, then the value of 'm' is

a. -3 b. 3

c. -2 d. 0

16. The value of $(2)^{55} \times (2)^{60} - (2)^{97} \times (2)^{18}$ is

a. 0 b. 1

c. 2 d. -1

17. $\left(\frac{P}{q}\right)^{-m} = (\_\_\_\_)^m$

a. $\frac{p}{q}$ b. $\frac{-q}{p}$

c. $\frac{q}{p}$ d. $\frac{-p}{q}$

18. If $x = (y)^3$, then $(x)^2$ is equal to

a. y^3 b. y^4

c. y^5 d. y^6

19. The value of $\frac{4y^3 - y}{(2y+1)(6y-3)}$, when $y = 666666$, is

a. 222222

b. 22222

c. 444444

d. 44444

20. $(-2) + (-2)(-2) + (-2)(-2)(-2) + (-2)(-2)(-2)(-2) + (-2)(-2)(-2)(-2)(-2) + (-2)(-2)(-2)(-2)(-2)(-2)$ is equal to

a. 22

b. -22

c. 62

d. -48

SECTION - B : EVERYDAY MATHEMATICAL

21. The force exerted by the Earth on the moon is given by $F = G\frac{m_1 m_2}{d^2}$,

where $G = 6.7 \times 10^{-11}$ Nm²/kg²

m_1 = mass of the earth = 6×10^{24} kg

m_2 = mass of the moon = 7.4×10^{22} kg

If the distance(d) between the Earth and the moon is given as 3.84×10^5 km, then the force exerted by the Earth on the moon is

a. 2.017×10^{26} N

b. 20.17×10^{23} N

c. 2.017×10^{25} N

d. 0.217×10^{26} N

22. The weight of one cargo ship is 8.382×10^{27} kg and that of the second ship is 7.646×10^{30} kg. The total weight of the ships is

a. 7654.382×10^{28}

b. 7.65482×10^{30}

c. 0.7654×10^{27}

d. 0.7654382×10^{29}

23. The mass of an electron is, approximately, $9.1093826 \times 10^{-31}$ kg. What is its mass in grams?

a. $9.1093826 \times 10^{-28}$ g

b. $9.1093826 \times 10^{-27}$ g

c. $9.1093826 \times 10^{-29}$ g

d. $9.1093826 \times 10^{-30}$ g

24. The diameter of the Sun is 1.4×10^{9} m and the diameter of the Earth is 1.2756×10^{7} m. The quotient of the two diameters is

a. 1.975×10^{3}

b. 1.0975×10^{2}

c. 10.975×10^{-5}

d. 1.0975×10^{4}

25. Tejas goes to watch a game of casino in Goa. At the end of a series of games between two competitors, he makes notes of the scores of the winner. The pattern he noted is $\frac{25}{63}, \frac{125}{3}$, 4375, 459375... .

Which of the following will be the next score, in exponential notation, in the given pattern?

a. $-5^5 \times 7^3 \times 3^2$

b. $5^6 \times 7^2 \times 3^2$

c. $5^6 \times 7^3 \times 3^2$

d. $5^5 \times 7^1 \times 3^1$

SECTION - C : BRAINBOX

26. If $2^x = 9$ and $3^x = 4$, then what is the value of $8^{x+2} + 9^{2x-3}$?

a. $46656\frac{256}{729}$

b. $4665\frac{256}{729}$

c. $46656\frac{729}{256}$

d. $4665\frac{729}{256}$

27. $\frac{1}{1 - x^{b-a}} - \frac{1}{x^{a-b} - 1}$ is equal to

a. 0

b. 1

c. 2

d. 3

28. If the value of the expression $\frac{2^{-5} \times 5^6 \times 64 \times 6561}{30^8 \times 2^{-2} \times 5^2}$ can be expressed as 5×10^{y}, then the value of y is

a. 2

b. 3

c. –5

d. –4

29. Which of the following is the correct match?

P) $\left(\frac{8}{125}\right)^{\frac{2}{3}} \times \left(\frac{27}{64}\right)^{\frac{-2}{3}}$ i) $\frac{625}{256}$

Q) $\left[\left(\frac{25}{9}\right)^{\frac{5}{2}}\right]^{\frac{1}{5}}$ ii) $\frac{1}{81}$

R) $\left[\left[\left(\left(\frac{4}{5}\right)^{-1}\right)^{-2}\right]^{\frac{1}{5}}\right]^{-10}$ iii) $\frac{125}{27}$

S) $\left[\left[\left(\frac{-1}{3}\right)^{2}\right]^{-2}\right]^{-1}$ iv) $\frac{64}{225}$

a. P - iv, Q - iii, R - i, S - ii

b. P - ii, Q - iii, R - iv, S - i

c. P - ii, Q - i, R - iv, S - iii

d. P - i, Q - ii, R - iv, S - iii

30. By what number should $\left(\frac{5}{2}\right)^{-2}$ be multiplied to get the product as $(10)^{-2}$?

a. $\frac{9}{16}$ b. 16

c. $\frac{1}{16}$ d. $-\frac{1}{16}$

Darken your choice with HB pencil

1.	a	b	c	d	9.	a	b	c	d	17.	a	b	c	d	25.	a	b	c	d
2.	a	b	c	d	10.	a	b	c	d	18.	a	b	c	d	26	a	b	c	d
3.	a	b	c	d	11.	a	b	c	d	19.	a	b	c	d	27	a	b	c	d
4.	a	b	c	d	12.	a	b	c	d	20.	a	b	c	d	28	a	b	c	d
5.	a	b	c	d	13.	a	b	c	d	21.	a	b	c	d	29	a	b	c	d
6.	a	b	c	d	14.	a	b	c	d	22.	a	b	c	d	30	a	b	c	d
7.	a	b	c	d	15.	a	b	c	d	23.	a	b	c	d					
8.	a	b	c	d	16.	a	b	c	d	24.	a	b	c	d					

Chapter

3

Geometry

SECTION - A : MATHEMATICAL REASONING

1. A figure that is both a rectangle and a rhombus is

a. kite

b. rhombus

c. square

d. rectangle

2. A quadrilateral with two pairs of parallel sides is

a. kite

b. quadrilateral

c. trapezium

d. parallelogram

3. A quadrilateral in which only one diagonal bisects another is

a. kite

b. parallelogram

c. rhombus

d. square

4. The angles of a quadrilateral are in ratio 1 : 2 : 3 : 4. What type of a quadrilateral is formed?

a. Parallelogram

b. Trapezuim

c. Rhombus

d. Square

5. The sum of each of the interior angles of a hexagon is

a. 720°

b. 360°

c. 1444°

d. 1080°

6. Two angles of a triangle are complementary. Then the measure of the third angle is

a. 80°

b. 90°

c. 70°

d. 100°

7. The measure of each exterior angle of a regular polygon with 9 sides is

a. 60°

b. 40°

c. 70°

d. 50°

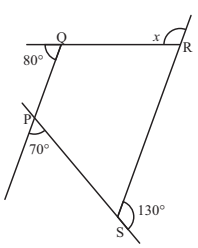
8. The value of x in the following figure is

a. 100°

b. 70°

c. 80°

d. 75°



9. A quadrilateral with only one pair of opposite and parallel sides is called

a. square

b. rectangle

c. trapezium

d. none of these

10. How many sides does a regular polygon have, if the measure of an exterior angle is 24°?

a. 15 b. 20

c. 7 d. 10

11. Which of the following formulae is used to find the sum of the interior angles of a quadrilateral of *n* sides?

a. $\frac{n}{2} \times 180°$

b. $\left(\frac{n+1}{2}\right) \times 180°$

c. $\left(\frac{n-1}{2}\right) \times 180°$

d. $(n-2) \times 180°$

12. The sides of a pentagon are produced in order. Which of the following is the sum of its exterior angles?

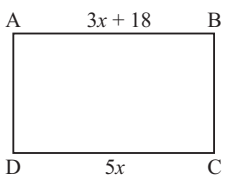
a. 540°

b. 180°

c. 720°

d. 360°

13. If ABCD is a rectangle, then the length of side AB is



a. 45

b. 9

c. 8

d. 10

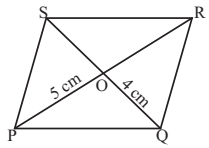
14. PQRS is a rhombus. If PO = 5 cm and OQ = 4 cm, then the sum of PR and SQ is _____ cm.

a. 17

b. 20

c. 18

d. 15



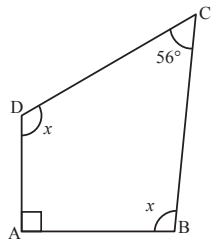
15. If ABCD is a quadrilateral, then the value of *x* is

a. 108°

b. 144°

c. 107°

d. 110°



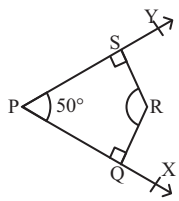
16. In the given figure, the ∠SRQ is

a. 120°

b. 130°

c. 145°

d. 170°



17. The measure of angles of a hexagon are $x°$, $(x-5)°$, $(x-5)°$, $(2x-5)°$, $(2x-5)°$, $(2x+20)°$. The value of *x* is

a. 70°

b. 40°

c. 80°

d. 90°

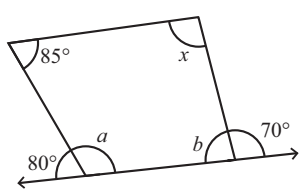
18. The value of *x* in the following figure is

a. 65°

b. 70°

c. 85°

d. 60°



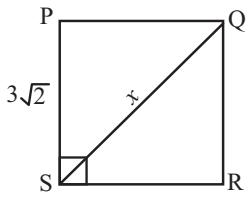
19. If PQRS is a square, then the value of x is

a. 7 cm

b. 6 cm

c. 10 cm

d. 15 cm



20. The adjacent sides of a rectangle are in ratio 5 : 3 and its perimeter is 32 cm. The length of the sides of the rectangle are

a. 10, 6

b. 12, 14

c. 14, 16

d. None of these

SECTION - B : EVERYDAY MATHEMATICS

21. A ground is in the form of a parallelogram whose one side is 10 m and the other side is 3 times of its side. The owner wants to fence his ground five times with a wire. The length of the wire required is

a. 200 m

b. 400 m

c. 800 m

d. 1000 m

22. Sonam has 9 ice cream sticks of equal length. She wants to join all of them in such a way that they make a regular polygon. At what internal angle does she have to join ice cream sticks with each other?

a. 140°

b. 160°

c. 180°

d. 185°

23. Hena walked diagonally across a park. Yuvi walked along the length and the breadth of the park. The park is 30 m wide and 40 m long. How much more did Yuvi walk than Hena?

a. 30 m

b. 20 m

c. 40 m

d. 60 m

24. A park is in the form of a square of side 10 m, then the total sum of all sides of the park is

a. 40 m

b. 60 m

c. 50 m

d. 70 m

25. The sides of a rectangular field are in the ratio 4 : 5. If the perimeter of the rectangular field is 90 cm, then the length of its sides are

a. 20 cm, 20 cm, 25 cm, 25 cm

b. 20 cm, 20 cm, 15 cm, 15 cm

c. 20 cm, 25 cm, 30 cm, 25 cm

d. None of these

SECTION - C : BRAINBOX

26. Which of the following is incorrect?

a. An octagon has 7 sides.

b. A parallelogram with equal adjacent sides is a rhombus.

c. A polygon with least number of sides is a triangle.

d. The diagonals of a rhombus are perpendicular bisectors of each other.

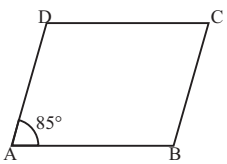
27. If an angle of a parallelogram is of measure 85°, then the measure of the other angles of the parallelogram is

a. 85°, 95°, 95°

b. 90°, 80°, 80°

c. 70°, 80°, 85°

d. 95°, 80°, 85°



28. The ratio of the interior angles of a pentagon and a decagon is

a. 3 : 4 b. 2 : 6

c. 3 : 8 d. 3 : 5

29. _____ is the minimum number of angles possible for a regular polygon.

a. 2 b. 4

c. 3 d. 5

30. The number of diagonals in a polygon of *n*-sides is given by

a. $\frac{n(n+1)}{2} - n$

b. $\frac{n(n-1)}{2} - n$

c. $\frac{n(n-1)}{2} + n$

d. None of these

Darken your choice with HB pencil

1.	a	b	c	d	9.	a	b	c	d	17.	a	b	c	d	25.	a	b	c	d
2.	a	b	c	d	10.	a	b	c	d	18.	a	b	c	d	26	a	b	c	d
3.	a	b	c	d	11.	a	b	c	d	19.	a	b	c	d	27	a	b	c	d
4.	a	b	c	d	12.	a	b	c	d	20.	a	b	c	d	28	a	b	c	d
5.	a	b	c	d	13.	a	b	c	d	21.	a	b	c	d	29	a	b	c	d
6.	a	b	c	d	14.	a	b	c	d	22.	a	b	c	d	30	a	b	c	d
7.	a	b	c	d	15.	a	b	c	d	23.	a	b	c	d					
8.	a	b	c	d	16.	a	b	c	d	24.	a	b	c	d					

Chapter
4

Practical Geometry

1. To construct a convex quadrilateral uniquely, it is necessary to know at least _____ of its building blocks.

a. 4 b. 5

c. 6 d. 3

2. To construct a quadrilateral uniquely, we must know at least _____ sides and two diagonals.

a. one b. two

c. three d. four

3. In a _____, both pairs of opposite sides are equal and all angles are of 90°.

a. square b. rectangle

c. rhombus d. parallelogram

4. In a _____, all sides are equal and all angles are 90°.

a. parallelogram b. rhombus

c. square d. rectangle

5. A quadrilateral cannot be constructed uniquely, if its _____ angles and _____ sides are given.

a. 4, 1

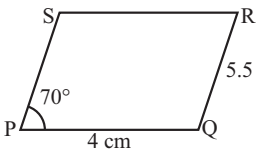
b. 3, 2

c. 4, 2

d. 4, 3

6. The following are the steps of the construction of a parallelogram whose sides and one angle are 4 cm, 5.5 cm and 70°, respectively.

I. $\angle P = 70°$, $\angle Q = 180° - 70° = 110°$.



II. Draw PQ = 4 cm. At P, draw an angle of measure 70°.

III. With P as a centre and PS (= 5.5 cm) as radius, draw an arc on PP^1 to cut PP^1 at S.

IV. With Q as centre and QR (= 5.5 cm) as radius, draw an arc on OQ^1 to cut OQ^1 at R^1.

V. Join SR, PQRS is required parallelogram.

VI. At Q, draw an angle PQQ^1 of measure 110°.

Which of the following is the correct sequence of the above steps?

a. I, II, III, VI, IV, V

b. I, II, III, IV. V, VI

c. I, III, II, VI, IV, V

d. I, II, III, V, VI, IV

7. The following are the steps of construction to draw a rhombus of side 4.5 cm and one diagonal of length 6 cm. Which of the following steps is wrong?

I. Draw AC = 6 cm.

II. With A as centre and 4.5 cm as radius, draw two arcs on either side of AC.

III. With C as a centre and same radius draw two arcs on either side of AC to cut the arc of step II at B and D, respectively.

IV. Join AC and BD, then ABCD is the required rhombus.

a. I b. II

c. III d. IV

8. If GA = AM = 8 cm, ME = GE = 10 cm and $\angle G = 45°$, then the figure GAME can be constructed as

a. kite b. square

c. rectangle d. rhombus

9. To construct a parallelogram, which of the following is necessary?

a. Two sides and one diagonal

b. One side and one diagonal

c. Both a. and b.

d. None of these

10. If four angles and _____ sides of a quadrilateral are given, then the quadrilateral cannot be constructed uniquely?

a. 1 b. 5

c. 4 d. 3

11. Which of the following is incorrect?

a. If, in a quadrilateral EFGH, $\angle E - \angle G$ is equal to 0°, then the quadrilateral is a parallelogram.

b. It is possible to construct a convex quadrilateral if the measure of three angles and two diagonals are given.

c. It is possible to construct a quadrilateral PQRS in which PQ = 3 cm, QR = 6 cm, $\angle P = 100°$ and $\angle S = 60°$.

d. The construction of a quadrilateral GLAM in which GL = 6.3 cm, $\angle G = 100°$, $\angle L = 145°$, LA = 7.8 cm and $\angle A = 115°$ is possible.

12. Read the following statements.

Statement 1: To construct a convex quadrilateral, you must know the length of four sides and one enclosed angle.

Statement 2: To construct a convex quadrilateral, you must know the length of two sides and three enclosed angles.

Which of the following is the correct option?

a. Both statements are false.

b. Both statements are true.

c. Statement 1 is true but statement 2 is false.

d. None of these

13. What do we require to construct a quadrilateral if the measures of two adjacent angles are given?

a. Lengths of three sides

b. Length of one side

c. Length of two sides

d. None of these

14. A rhombus cannot be drawn if

a. the length of one diagonal is given.

b. the lengths of two diagonals are given.

c. the length of one side and one diagonal are given.

d. none of these

15. Which of the following steps is incorrect while constructing a parallelogram ABCD in which AB = 5 cm, BC = 6 cm and ∠D = 85° is given?

I. ∠C = 180° – 85° = 95°

II. Draw BC = 6 cm.

III. At a point B on line BC, draw ∠BAD = 85° and draw ∠BCD = 95° using protactor.

IV. Taking C as a centre, and CD = 5 cm as a radius, cut an arc intersecting CY at point D.

V. At point D on line CD, draw ∠CDA = 85° using protactor and draw DZ. The point at which DZ meets BX, is A.

a. III step b. I step

c. Both I and III d. II step

16. If the supplement of an angle is four times its complement. The measure of one of the angles is

a. 60°

b. 50°

c. 80°

d. 100°

17. In a right-angled triangle ∠A = 90° and AB = AC. What is the value of ∠B?

a. 45° b. 35°

c. 75° d. 65°

18. If four times its complement is 10° less than twice its supplement, then the measure of one of its angles is

a. 15° b. 10°

c. 25° d. 5°

19. What is the measure of an angle whose measure is 32° less than its supplement?

a. 148° b. 60°

c. 74° d. 55°

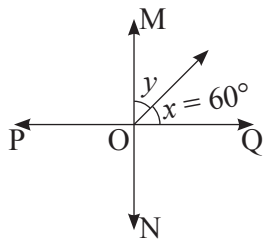
20. $\overline{PQ}$ and $\overline{MN}$ intersects at O. If $x = 60°$ then $\angle y$ =

a. 30°

b. 60°

c. 20°

d. 40°



21. An exterior angle of a triangle is 80° and two of its interior opposite angles are equal. The measure of each of these angles is

a. 60° b. 100°

c. 40° d. 120°

22. Which of the following equations of the line is parallel to x-axis?

a. $y = x + 1$

b. $y = 2$

c. $x = 3$

d. $x = 2y$

23. Which of the following points lies above x-axis?

a. (–1 , 2)

b. (2, 0)

c. (–1, –5)

d. (0, –3)

24. Which of the following equations of the line is parallel to $y = x - 2$?

a. $y = 2x + 1$

b. $2y = 2x - 1$

c. $2y = x + 7$

d. $y = 3x + 1$

25. A solid with a three-dimensional plane is drawn on a _____ coordinate system.

a. 1

b. 2

c. 3

d. 4

Darken your choice with HB pencil

1.	a	b	c	d	8.	a	b	c	d	15.	a	b	c	d	22.	a	b	c	d
2.	a	b	c	d	9.	a	b	c	d	16.	a	b	c	d	23.	a	b	c	d
3.	a	b	c	d	10.	a	b	c	d	17.	a	b	c	d	24.	a	b	c	d
4.	a	b	c	d	11.	a	b	c	d	18.	a	b	c	d	25.	a	b	c	d
5.	a	b	c	d	12.	a	b	c	d	19.	a	b	c	d					
6.	a	b	c	d	13.	a	b	c	d	20.	a	b	c	d					
7.	a	b	c	d	14.	a	b	c	d	21.	a	b	c	d					

Chapter

5

Data Handling

SECTION - A : MATHEMATICAL REASONING

1. The number of times an observation occurs in a data is called its

a. range

b. frequency

c. class size

d. none of these

2. The class marks of an interval are also known as the

a. width of class interval

b. class size

c. mid-value of class interval

d. class limit

3. The range of the data 6, 12, 9, 15, 8, 5, 14, 7, 6, 3 is

a. 3

b. 12

c. 10

d. 13

4. The class size of the intervals 14 – 17, 18 – 21, 22 – 25 is

a. 4

b. 3

c. 6

d. None of these

5. The inclusive class intervals are also called

a. discontinuous class intervals

b. continuous class intervals

c. unequal class intervals

d. higher class intervals

6. To convert 1 – 5, 7 – 11, 13 – 17, ... into continuous class intervals, we

a. add $\frac{1}{2}$ to the upper limit and subtract $\frac{1}{2}$ from the lower limit.

b. subtract $\frac{1}{2}$ from the upper limit and add $\frac{1}{2}$ to the lower limit.

c. add 1 to the upper limit and subtract 1 from the lower limit.

d. none of these

7. Which of following depends upon the numerical value of data represented in the bar graph?

a. Height of the rectangle

b. Width of the rectangle

c. Area of rectangle

d. All of them

8. The height of the children is an example of _____ data.

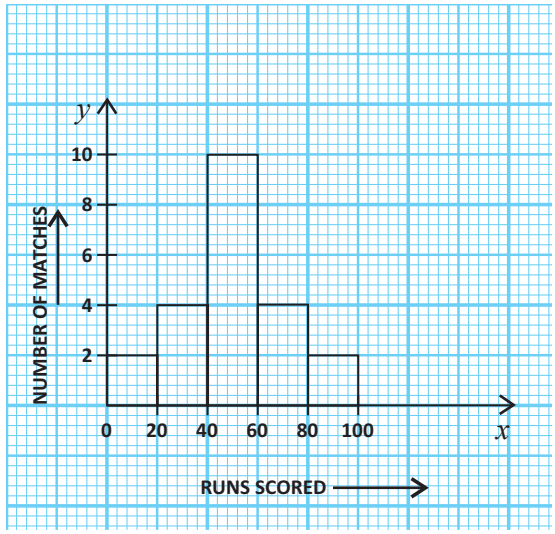
a. raw

b. discrete

c. continuous

d. none of these

Directions (Q9 to Q 11): The given histogram shows the number of runs scored by a batsman in Twenty20 cricket matches. Read the histogram to answer the following questions.



9. How many matches did the batsman play in the highest run group?

a. 4 matches
b. 6 matches
c. 10 matches
d. 8 matches

10. How many matches did the batsman play in all?

a. 20 matches
b. 24 matches
c. 22 matches
d. 26 matches

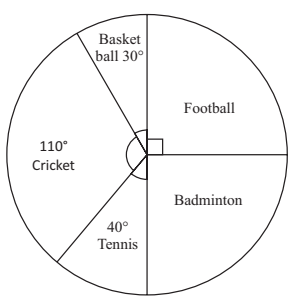
11. In how many matches did the batsman score less than 60 runs?

a. 8 matches
b. 2 matches
c. 16 matches
d. 18 matches

Directions (Q12 to Q14): The pie graph given below shows different games played by the students of class VI. Study the pie graph and answer the questions that follow.

12. Which game is most popular among the students?

a. Badminton
b. Cricket
c. Football
d. Basketball



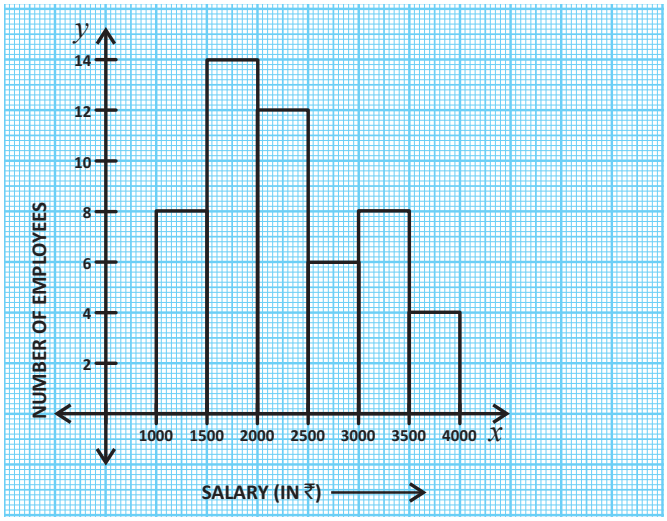
13. If there are 108 students in the class, how many of them played badminton?

a. 25
b. 27
c. 26
d. 23

14. Which game is played by the least number of students?

a. Tennis
b. Basket ball
c. Football
d. Badminton

Directions (Q15 to Q17): Given below is the histogram depicting the salaries earned by employees of a company. Study the histogram and answer the questions that follow.



15. How many employees earn less than 2500?

a. 36 b. 34

c. 38 d. 40

16. How many employees are paid the highest?

a. 26 b. 27

c. 14 d. 10

17. What is the class size?

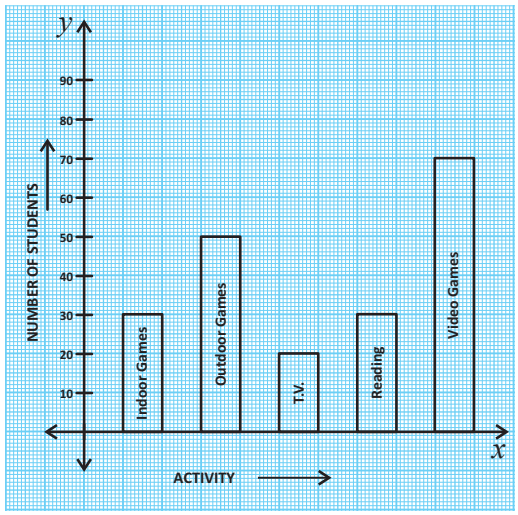
a. 1000

b. 200

c. 500

d. 100

Directions (Q18 to Q20): Study the following bar graph which shows the result of a survey of the after-school activities preferred by the students of a school and answer the questions that follow.



18. How many students in all are considered for the survey?

a. 200

b. 150

c. 210

d. 190

19. How many more students play video games than indoor games?

a. 20

b. 40

c. 60

d. 10

20. How many students do not play any kind of game?

a. 60

b. 70

c. 50

d. 0

21. In a frequency distribution with classes 0–10, 10–20 ..... and so on, the size of class interval is 10. The lower limit of the fourth class is

a. 40

b. 30

c. 50

d. 50

22. The data collected in a survey shows that 40% of buyers are interested in buying a particular brand of toothpaste. The central angle of the sector of the pie chart representing this information is

a. 120°

b. 150°

c. 144°

d. 40°

23. The tally marks are used to find the

a. class intervals

b. range

c. frequency

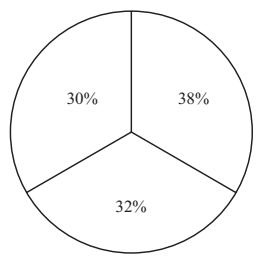
d. upper limit

24. Which symbol will appear for 38% as per the given information?

Red colour – 192

Yellow colour – 228

Pink colour – 180



a. Yellow

b. Red

c. Pink

d. None of these

25. The data represented using circles is known as a

a. bargraph

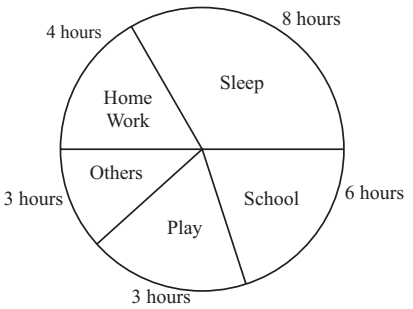
b. histogram

c. pictograph

d. pie chart

SECTION - B : BRAINBOX

Directions (Q26 to Q28): Look at the circle graph given below and answer the questions.



26. The fraction of a circle representing home work of the given information is

a. $\frac{1}{7}$ b. $\frac{1}{8}$

c. $\frac{1}{6}$ d. $\frac{1}{5}$

27. The fraction the circle representing others of the given information is

a. $\frac{1}{7}$ b. $\frac{1}{8}$

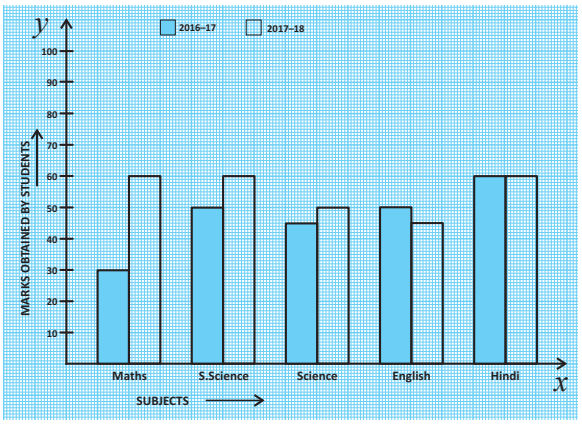
c. $\frac{1}{6}$ d. $\frac{1}{5}$

28. What is the central angle corresponding to activities "play and home work"?

a. 45°, 60° b. 50°, 60°

c. 45°, 45° d. 60°, 60°

Directions (Q29 to Q30): Read the following graph and answer the following questions.



29. In which subject has has the performance deteriorated?

a. Maths

b. Science

c. English

d. Hindi

30. In which subject has the performance improved the most?

a. Maths b. Science

c. S. Science d. Hindi

Darken your choice with HB pencil

1.	a	b	c	d	9.	a	b	c	d	17.	a	b	c	d	25.	a	b	c	d
2.	a	b	c	d	10.	a	b	c	d	18.	a	b	c	d	26	a	b	c	d
3.	a	b	c	d	11.	a	b	c	d	19.	a	b	c	d	27	a	b	c	d
4.	a	b	c	d	12.	a	b	c	d	20.	a	b	c	d	28	a	b	c	d
5.	a	b	c	d	13.	a	b	c	d	21.	a	b	c	d	29	a	b	c	d
6.	a	b	c	d	14.	a	b	c	d	22.	a	b	c	d	30	a	b	c	d
7.	a	b	c	d	15.	a	b	c	d	23.	a	b	c	d					
8.	a	b	c	d	16.	a	b	c	d	24.	a	b	c	d					

Chapter

6

Square Roots and Cube Roots

SECTION - A : MATHEMATICAL REASONING

1. $\sqrt{6^5 + 6^5 + 6^5 + 6^5 + 6^5 + 6^5}$ is equal to

a. 216 b. 7776

c. 23,328 d. 648

2. If $\sqrt{81} + \sqrt{0.81} = 10.09 - x$, then the value of x is

a. 0.019 b. 0.19

c. 0.9 d. 0.109

3. Which integer is closest to $\sqrt{14.4}$?

a. 3 b. 2

c. 4 d. 5

4. $\sqrt{50} - \sqrt{18} - \sqrt{8}$ is equal to

a. 0 b. 1

c. 2 d. 5

5. Let A = $\sqrt{1.44}$, B = $\frac{13}{11}$, C = $\sqrt{8} - \sqrt[2]{8}$ and D = $\frac{3}{5} + \frac{3}{4}$. Which of the given letters of the English alphabet contain the second largest value?

a. A b. B

c. C d. D

6. $\frac{\sqrt{375} + \sqrt{60}}{\sqrt{5}}$ is equal to

a. $7\sqrt{5}$ b. $7\sqrt{3}$

c. $5\sqrt{3}$ d. $2\sqrt{3}$

7. If $a \times b = a + b - \sqrt{ab}$, then the value of 16×9 is

a. 14 b. 13

c. 12 d. 11

8. What per cent of $12\sqrt{12}$ is $3\sqrt{3}$?

a. 25% b. 12.5%

c. 27.5% d. 15%

9. If $3\sqrt{5} + \sqrt{125} = 17.88$, then value of $\sqrt{80} + 6\sqrt{5}$ is

a. 13.41 b. 20.46

c. 21.66 d. 22.35

10. The least number which should be subtracted from 0.000326 to make it a perfect square is

a. 0.0002

b. 0.00002

c. 0.000002

d. 0.02

11. If $\sqrt{1 + \frac{x}{144}} = \frac{13}{12}$, then the value of x is

a. 12 b. 13

c. 25 d. 50

12. $\sqrt{2\sqrt{2\sqrt{2\sqrt{2\sqrt{2}}}}}$ is equal to

a. 0 b. 2

c. 1 d. $2^{\frac{31}{32}}$

13. If $\frac{3\sqrt{27}}{h} = \frac{h}{27\sqrt{3}}$, then h is equal to

a. 9 b. 81

c. 27 d. 30

14. The value of $\sqrt[3]{\sqrt{0.000064}}$ is

a. 0.2 b. 0.4

c. 0.1 d. 0.3

15. The sum of $[1^3 + 2^3 + 3^3 + 4^3 + ... 10^3]$ is

a. 3025 b. 4550

c. 4450 d. 7650

16. Which of the following numbers' cube ends with number 4?

a. 18 b. 12

c. 14 d. 16

17. The volume of cube of side $\frac{13}{9}$ is

a. $\frac{2197}{729}$ b. $\frac{729}{2197}$

c. $\frac{169}{81}$ d. $\frac{81}{169}$

18. The cube root of –0.004913 is

a. 0.19 b. 0.17

c. – 0.17 d. None of these

19. $125\sqrt[3]{p^6} - \sqrt[3]{125p^6}$ is equal to

a. $120p^2$ b. $120p^4$

c. $12p^6$ d. $120p^5$

20. The smallest number that must be subtracted from 220 to make it a perfect cube is

a. 24 b. 25

c. 20 d. 5

SECTION - B : EVERYDAY MATHEMATICS

21. Tiya has the product 8 × 9 × 10 × 11 × 12. Sarita has another product which is multiplied the product that Tiya has, to get a perfect square. If the resultant product is written as a product of two equal factors, then which number is it?

a. 3860 b. 3690

c. 3960 d. 3680

22. The area of a square field is 5184 m². A rectangular field, whose length is twice its breadth has its perimeter equal to the perimeter of the square field. The area of the rectangular field is

a 4608 m² b. 6408 m²

c. 4068 m² d. 4609 m²

23. 2025 plants are to be planted in a garden in such a way that each row contains as many plants as the rows. The number of rows is

a. 47 b. 46

c. 45 d. 54

24. A town with population of 4000 requires 140 litres of water per head. It has a tank measuring 20 m × 12 m × 7 m. So, the water in this tank will be sufficient for _____ days.

a. 4

b. 6

c. 3

d. 10

25. Satyam walks 12 m towards north from his house and turns west to walk 35 m to reach his friend's house. While returning, he walks diagonally from his friend's house to reach back to his house. The distance which he covered while returning was

a. 37 m b. 36 m c. 47 m d. 49 m

SECTION - C : BRAINBOX

26. Three numbers are in ratio 1 : 2 : 3. The sum of their cubes is 0.098784. The sum of the numbers is

a. 0.23 b. 0.84

c. 0.42 d. 0.48

27. A big cube is made up of 64 small cubes. All the faces of the big cube are then painted. How many of the small cubes have exactly two painted faces?

a. 24 b. 36

c. 32 d. 16

28. Read the following statements.

Statement 1: If two perfect cubes x and y are such that x is divisible by y, then $\sqrt[3]{x}$ is always divisible by $\sqrt[3]{y}$.

Statement 2: If x and y are numbers such that x^2 is divisible by y^3, then x^3 is divisible by y^3.

Which of the following is the correct option?

a. Statement 1 is true, statement 2 is false.

b. Both statement 1 and statement 2 are true.

c. Both statement 1 and statement 2 are false.

d. Statement 1 is false, statement 2 is true.

29. The area of a square plot is $101\frac{1}{400}$ m^2. So, the length of one side is

a. 11.05 m b. 10.05 m

c. 10.28 m d. 13 m

30. The difference of two perfect cubes is 189. If the cube root of the smaller of two numbers is 3, then the cube root of the larger number is

a. 7 b. 27

c. 6 d. 8

Darken your choice with HB pencil

1.	a b c d	9.	a b c d	17.	a b c d	25.	a b c d
2.	a b c d	10.	a b c d	18.	a b c d	26	a b c d
3.	a b c d	11.	a b c d	19.	a b c d	27	a b c d
4.	a b c d	12.	a b c d	20.	a b c d	28	a b c d
5.	a b c d	13.	a b c d	21.	a b c d	29	a b c d
6.	a b c d	14.	a b c d	22.	a b c d	30	a b c d
7.	a b c d	15.	a b c d	23.	a b c d		
8.	a b c d	16.	a b c d	24.	a b c d		

Chapter 7

Algebra

SECTION - A : MATHEMATICAL REASONING

1. Which of the following statements is correct?

P $\Leftrightarrow 4(x)^2 = 16x^2$ Q $\Leftrightarrow \frac{3}{0} = 0$

R $\Leftrightarrow (-7)^2 = -49$ S $\Leftrightarrow \sqrt{7x} = (7x)^{\frac{1}{2}}$

a. P b. Q

c. R d. S

2. $4(2x^2 - 10) =$

a. $8x^2 - 40$ b. $8x^2 - 10$

c. $2x^2 - 40$ d. $4x^2 - 20$

3. A student have a problem in understanding of an algebraic expression. He solves $(2 + x)^2 = (4 + x^2)$. He gets a wrong answer. The right answer is

a. $16x^2 + 4$

b. $x = 0$

c. $4 + x^2 + 4x$

d. $12 + x^2 + 2x$

4. On simplifying $\frac{-8}{27}xyz\left(\frac{3}{2}xyz^2 - xy^2z^3\right)$, we get

a. $\frac{-4}{9}x^2y^2z^3 + \frac{2}{3}x^2y^3z^4$

b. $\frac{-24}{9}x^2y^2z^3 + \frac{2}{3}x^2y^2z^2$

c. $\frac{-4}{54}x^2y^2z^3 + \frac{2}{5}x^2y^3z^2$

d. None of these

5. On dividing $R(4R^2 - 16)$ by $4R(R - 2)$, we get

a. $R + 2$ b. $R - 2$

c. $R + 4$ d. $R - \sqrt{2}$

6. The value of $(x + y)^2 + (x - y)^2$ is

a. $2x^2 + 2y^2$

b. $2x^2 - 2y^2$

c. $2(x^2 - y^2)$

d. $2x + 3y$

7. $x(y + z) - y(y + z) =$

a. $(x + y + z)(x - y)(x + y)$

b. $(x + y + z)(x - y)$

c. $(x + y + z)(x + y)$

d. $(x - y)(y + z)$

8. $(1.5x + 1.2y)^2 - (1.5x - 1.2y)^2 =$

a. $9.2xy$

b. $7.2xy$

c. $8xy$

d. $4xy$

9. x and y are positive integers which satisfy the equation $2x + 5y = 103$. So, the sum of $x + y$ is

a. 50 b. 42

c. 53 d. 98

10. If $\frac{3(1-2x)+2(2x-1)}{4(2x-3)} = \frac{-1}{12}$, then the value of x is

a. 0 b. 1

c. –1 d. –4

11. If $p+\frac{1}{p} = \sqrt{5}$, then $p^4+\frac{1}{p^4} =$

a. 4 b. 8

c. 7 d. 6

12. _____ should be subtracted from $6t^2 - 31t + 47$ such that the resulting polynomial is exactly divisible by $2t - 5$.

a. 8

b. 7

c. 10

d. 12

13. The factors of $7\sqrt{2}\,x^2 - 10x - 4\sqrt{2}$ are

a. $(7\sqrt{2}\,x - 4)(x - \sqrt{2})$

b. $(7\sqrt{2}\,x + 4)(x + \sqrt{2})$

c. $(7\sqrt{2}\,x + 4)(x - \sqrt{2})$

d. $(7\sqrt{2}\,x - 4)(x + \sqrt{2})$

14. Read the following statements.

Statement 1: A constant factor is called a numerical factor.

Statement 2: In addition, unlike terms are grouped together and, then the sum is found.

Which of the following is the correct option?

a. Both statements are true.

b. Both statements are false.

c. Statement 1 is false and statement 2 is true.

d. Statement 1 is true and statement 2 is false.

15. Simplify

$$\frac{4.5\times4.5 - 2\times4.5\times3.5 + 3.5\times3.5}{4.5\times4.5 + 2\times4.5\times3.5 + 3.5\times3.5}$$

a. $\frac{1}{12}$ b. $\frac{1}{64}$

c. $\frac{1}{49}$ d. 1

16. The positive value of x which satisfies $\frac{x^2-4}{3+x^2} = \frac{-3}{4}$ is

a. 1 b. 2

c. 3 d. 4

17. The sum of two numbers is 80. If they are in ratio 6 : 4, then the numbers are

a. 20, 60

b. 48, 32

c. 75, 5

d. 40, 40

18. The sum of the digits 2-digit number is 15. If the digits are in ratio 2 : 3, then number is

a. 69 b. 33

c. 98 d. 23

19. The minimum value of the expression $\left(x+\frac{1}{x}\right)$, where $x > 0$ and x is integer, is

a. 9 b. 2

c. 0 d. None of these

20. The product of the roots of the equation $mx^2 + 6x + (2m - 1) = 0$ is – 1. The value of m is

a. $\frac{1}{3}$ b. $\frac{1}{5}$

c. $\frac{2}{5}$ d. $\frac{1}{4}$

SECTION - B : EVERYDAY MATHEMATICS

21. There were P people in a room when the meeting started. Q people left the room during the first hour, while *R* people entered the room during the same time. Which expression gives the number of people in the room after the first hour out of the number of people in the room who have been there since the meeting started?

a. $\frac{(P - Q)}{(P - Q + R)}$

b. $\frac{100 \times (P - Q + R)}{P}$

c. $\frac{(P + Q)}{(P - Q)}$

d. $\frac{100 \times (P - R)}{(P - Q + R)}$

22. The value of the length of the side of the given square is $4x + 5$. If the area of the square is 625 sq. units, then what will be the value of x?

a. 4 b. 5

c. 6 d. 2

23. If area of a rectangular field is $6.25x^2 - 0.25y^2$ sq. units, and the length of one side of the rectangular field is $(2.5x - 0.5y)$ units then the length of the second side of the field is

a. $(2.5x + 0.5y)$ units

b. $2x + 5y$ units

c. $2.5x - 0.5y$ units

d. $2x + 7y$ units

24. Navi, Ravi and Sweety are three kids. Navi's weight is $2\frac{1}{3}$ kg more than Sweety. Ravi's weight is $3\frac{2}{5}$ kg more than Sweety. If their total weight is $65\frac{11}{15}$ kg, then how much does Sweety weigh?

a. 20 kg b. 30 kg

c. 40 kg d. 25 kg

25. One-third of a group of animals went to the forest. Two-fifth of the total were grazing in the field and the remaining 12 were on the river bank. The total number of animals is

a. 90 b. 40

c. 45 d. 21

SECTION - C : BRAINBOX

26. A streamer going downstream in a river covers a distance between two towns in 10 hours. While moving upstream, it covers the same distance in 15 hours. If the speed of the stream is 4 km per hour, then the distance between the two towns is

a. 240 km b. 200 km

c. 250 km d. 260 km

27. If $3a + 2b = 12$ and $ab = 6$, then the value of $9a^2 + 4b^2$ is

a. 72 b. 70

c. 74 d. 75

28. If $49x^2 - y = (7x + \frac{1}{2})(7x - \frac{1}{2})$, then the value of y is

a. $\frac{1}{7}$ b. $\frac{1}{4}$

c. $\frac{1}{8}$ d. $\frac{1}{2}$

29. The sum of two numbers is 2490, and if 6.5% of one number is equal to 8.5% of the other, then the two numbers are

a. 1414, 1076

b. 1411, 1079

c. 1412, 1078

d. None of these

30. Five years ago, Sonam was thrice as old as Ravi. If 10 years later, Sonam will be twice as old as Ravi, then Sonam's present age is

a. 30 years

b. 50 years

c. 20 years

d. 55 years

Darken your choice with HB pencil

1.	a	b	c	d	9.	a	b	c	d	17.	a	b	c	d	25.	a	b	c	d
2.	a	b	c	d	10.	a	b	c	d	18.	a	b	c	d	26	a	b	c	d
3.	a	b	c	d	11.	a	b	c	d	19.	a	b	c	d	27	a	b	c	d
4.	a	b	c	d	12.	a	b	c	d	20.	a	b	c	d	28	a	b	c	d
5.	a	b	c	d	13.	a	b	c	d	21.	a	b	c	d	29	a	b	c	d
6.	a	b	c	d	14.	a	b	c	d	22.	a	b	c	d	30	a	b	c	d
7.	a	b	c	d	15.	a	b	c	d	23.	a	b	c	d					
8.	a	b	c	d	16.	a	b	c	d	24.	a	b	c	d					

Chapter

8

Comparing Quantities

SECTION - A : MATHEMATICAL REASONING

1. 14% of _____ kg is 392 kg.

a. 1,400 kg b 1,200 kg

c. 3,920 kg d. 2,800 kg

2. The income of an employee of a company increases by 20% annually. If the present income is ₹2,46,000, then his income an year ago would be

a. ₹2,05,000 b. ₹2,00,500

c. ₹2,50,000 d. ₹20,050

3. A price of a product is increased by 20% and then decreased by 20%. The net increase and decrease percentage is

a. 10 % b. 4 %

c. 9 % d 20 %

4. $\frac{1}{5}$ of 2030 is equal to _____ % of 140.

a. 270 b. 290

c. 275 d. 300

5. Jyoti sells a toy for ₹1,000, gaining $\frac{1}{5}$ of its cost price. Her gain percentage is

a. 20 % b. 35 %

c. 40 % d. 45 %

6. By selling a computer for ₹35,000, Rajan lost 20%. The CP of the computer is

a. ₹56,250 b. ₹43,750

c. ₹56,200 d. ₹56,180

7. The CP of 14 mangoes is same as the selling price of 12 mangoes. The gain percentage is

a. 16.7 % b. 15.7 %

c. 18.7 % d. 25.7 %

8. The discount per cent, if the MP is ₹2700 and SP is ₹2160 is

a. 10 % b. 15 %

c. 20 % d. 25 %

9. The compound interest on ₹10,000 for 2 years at the rate 4% per annum compounded half yearly is

a. ₹824.32 b. ₹732.35

c. ₹820.32 d. None of these

10. The difference of SI and CI on ₹500 for 2 years at the rate of 2% per annum is

a. 20 b. 15

c. 0.2 d. 5

11. What is 20% of 60% of 75% of 80?

a. 10.2 b. 8.2

c. 6.2 d. 7.2

12. A single equivalent discount to two successive discounts of 25% and 5% is

a. $28\frac{3}{4}$ % b. $30\frac{1}{4}$ %

c. $29\frac{1}{2}$ % d. $40\frac{1}{4}$ %

13. A new television costs ₹70,000. Due to new technology, its value depreciates every year. If the rate of depreciation is 10%, 20% and 30% in three successive years, then its value after 3 years is

a. ₹40,280 b. ₹35,280

c. ₹38,275 d. ₹41,280

14. The population of a city was 10,60,000 in 2014. In 2015, it grew by 5%. In 2016, it grew by 10%. What will be the population of the city in 2017?

a. 12,84,300 b. 12,24,300

c. 12,24,400 d. None of these

15. To gain 25%, after allowing a discount of 10%, the shopkeeper must mark the price of the article, which costs him ₹360, as

a. ₹600 b. ₹500

c. ₹200 d. ₹400

16. The rate of interest, if amount after 2 years of simple interest on a capital of ₹1,200 is ₹1,400 is

a. 14 % b. $\frac{25}{3}$ %

c. 10 % d. 20 %

17. In how much time will ₹1,000 give ₹200 as interest at the rate of 10% per annum simple interest?

a. 2 years b. 4 years

c. 3 years d. 1 years

18. The simple interest on a sum of money is 16% of the principal and the rate of interest per annum is equal to the number of years. The rate of interest is

a. 4 % b. 5 %

c. 7 % d. 9 %

19. Which of the following is the largest number?

a. 300% of 140 b. 8% of 100

c. 1000% of 5 d. 20% of 500

20. If 25% of a number is 60, then 75% of that number is

a. 150 b. 200

c. 300 d. 180

SECTION - B : EVERYDAY MATHEMATICS

21. A shopkeeper offers two discounts of 20% and 15% on a dress whose marked price is ₹9,000. The selling price is

a. ₹6,120 b. ₹3,080

c. ₹6,020 d. ₹6,021

22. Raman bought a jeans listed at ₹400 for ₹425. The rate of sales tax is

a. 7.25 %

b. 6.25 %

c. 35 %

d. 10 %

23. The list price of a toy is ₹750. If Rajan pays ₹75 as GST for it, then the rate of GST is

a. 15 % b. 10 %

c. 20 % d. 25 %

24. In an election, a candidate who got 56% of the votes, won by 144 votes. The total number of voters on the voting list, if 80% people cast their vote and there were no invalid votes is

a. 360 b. 2600

c. 1500 d. 1800

25. Rashmi purchased some pens at 3 for ₹5 and sold them at 5 for ₹12. She gained ₹143 in all. How many pens did she purchase?

a. 195 b. 295 c. 300 d. 305

SECTION - C : BRAINBOX

26. A shopkeeper bought 100 tables for ₹2,000 each. Due to some calculation mistake, he sold 10 tables at ₹1,200 each. At what rate should he sell the remaining so as to have a profit of 14% on the whole?

a. ₹2,800

b. ₹2,400

c. ₹1,300

d. ₹7,500

27. A shopkeeper offers 10% discount on all his goods and still makes a profit of 17%. If an item is marked ₹260, then the cost price is

a. ₹250

b. ₹600

c. ₹400

d. ₹200

28. On selling sugar at ₹40 per kg, a loss of 10% is incurred. The amount of sugar (in kg), if total loss incurred is ₹80, is

a. 10 kg b. 18 kg

c. 20 kg d. 30 kg

29. In how many years a sum of ₹2,500 amounts to ₹2,704 at the rate of 8% per annum compounded semi-annually?

a. 2 years b. 1 years

c. 3 years d. 4 years

30. Renu's salary is 75% more than Priya's salary. Renu got a raise of 40% on her salary while Priya got a raise of 25% on her salary. By what per cent is Renu's salary more than Priya's salary?

a. 96 % b. 97 %

c. 92 % d. 28 %

Darken your choice with HB pencil

1.	(a) (b) (c) (d)	9.	(a) (b) (c) (d)	17.	(a) (b) (c) (d)	25.	(a) (b) (c) (d)
2.	(a) (b) (c) (d)	10.	(a) (b) (c) (d)	18.	(a) (b) (c) (d)	26	(a) (b) (c) (d)
3.	(a) (b) (c) (d)	11.	(a) (b) (c) (d)	19.	(a) (b) (c) (d)	27	(a) (b) (c) (d)
4.	(a) (b) (c) (d)	12.	(a) (b) (c) (d)	20.	(a) (b) (c) (d)	28	(a) (b) (c) (d)
5.	(a) (b) (c) (d)	13.	(a) (b) (c) (d)	21.	(a) (b) (c) (d)	29	(a) (b) (c) (d)
6.	(a) (b) (c) (d)	14.	(a) (b) (c) (d)	22.	(a) (b) (c) (d)	30	(a) (b) (c) (d)
7.	(a) (b) (c) (d)	15.	(a) (b) (c) (d)	23.	(a) (b) (c) (d)		
8.	(a) (b) (c) (d)	16.	(a) (b) (c) (d)	24.	(a) (b) (c) (d)		

Chapter

9

Direct and Indirect Variation

SECTION - A : MATHEMATICAL REASONING

1. If j is inversely proportional to k, and $j = -5$ when $k = 2$, the value of k when $j = 12$ is

a $-\frac{5}{6}$ b. $-\frac{4}{3}$

c. $\frac{3}{4}$ d. $\frac{5}{6}$

2. If P is directly proportional to $\sqrt{Q}$ and if $P = 24$ when $Q = 9$, then the value of P when $Q = 49$ is

a. 54 b. 55

c. 56 d. 57

3. Which of the following statements is incorrect?

P : If 56 men can do some work in 42 days, then 168 men will finish work in 12 days.

Q : Time is directly proportional to the work.

R : If an outlet empties a full tank in n hours, then the work done by it in 1 hour is $\frac{-1}{n}$.

S : If a person completes $\left(\frac{1}{n}\right)$ work in 1 day, then the time taken by him to complete the work is n days.

a. P b. Q

c. R d. S

4. If both x and y are in direct proportion, then $\frac{1}{x}$ and $\frac{1}{y}$ are

a. in inverse proportion.

b. in direct proportion.

c. neither in direct or nor in inverse proportion.

d. sometimes in direct or sometimes in inverse proportion.

5. The number of teeth and age of a person vary

a. directly with each other

b. inversely with each other

c. neither directly nor inversely with each other

d. sometimes directly and sometimes inversely with each other

6. Both x and y vary directly with each other, when x is 10 and y is 14. Which of following is not a possible pair of values of x and y?

a. 25 and 35 b. -35 and 25

c. 35 and 49 d. 15 and 21

7. If $x : y = 5 : 4$ and $y : 4 = 2 : 7$, then the value of x is

a. $\frac{32}{35}$ b. $\frac{40}{28}$

c. $\frac{22}{27}$ d. $\frac{47}{45}$

8. **When $x = 2, 5, 6, 8, 9$ and $y = 6, 15, 18, 24, 27$, then x and y are in**

a. direct proportion

b. indirect proportion

c. neither direct nor indirect proportion

d. none of these

9 **A machine can pack 45 boxes in 5 hours. How many boxes can it pack in 12 hours?**

a. 110

b. 106

c. 108

d. 100

10. **If $P = 4q$, then P and q vary _____ with each other.**

a. inversely

b. directly

c. insufficient information

d. none of these

11. **x is in inverse variation with y. If x is 8 and constant of variation is 48, then the value of y is**

a. 9

b. 13

c. 12

d. 6

12. **By travelling at a speed of 48 km/h, a car finishes a certain journey is 10 hours. To cover the same distance in 8 hours, the speed of the car should be**

a. 60 km/h

b. 80 km/h

c. 75 km/h

d. 85 km/h

13. **Spinning 4 hours daily, Santosh can spin 3 kg of cotton balls in 15 days. If she spins 5 hours daily, how many days will she take to spin 8 kg of cotton balls?**

a. 32 b. 36

c. 40 d. 45

14. **If $\frac{x}{y} = \frac{3}{4}$, then the value of $\frac{(5x - 3y)}{(7x + 2y)}$ is**

a. $\frac{3}{21}$ b. $\frac{5}{29}$

c. $\frac{3}{29}$ d. $\frac{5}{33}$

15. **What number must be taken from the fraction $\frac{27}{35}$ to get $\frac{2}{3}$?**

a. 9 b. 10

c. 11 d. None of these

16. **A varies jointly as B and C. If A = 6, B = 3 and C = 2, then the value of A, when B = 5 and C = 7 is**

a. 17.5

b. 35

c. 70

d. 105

17. **If x varies inversely as $y^2 - 1$ and is equal to 24, when $y = 10$, then the value of x, when $y = 5$, is**

a. 99

b. 101

c. 91

d. 93

18. **If x varies as y and $y = 7$, when $x = 18$, then the value of x, when $y = 21$ is**

a. 36 b. 54

c. 72 d. 18

19. A man goes downstream at x km/hr and upstream at y km/hr. The speed of the boat in still water is

a. $0.5\ (x + y)$

b. $0.5\ (x - y)$

c. $x + y$

d. $(x - y)$

20. Between 5 a.m. and 5 p.m. of a particular day, for how many times is the minute hand and the hour hand together?

a. 10

b. 12

c. 11

d. 9

SECTION - B : EVERYDAY MATHEMATICS

21. A pipe can fill a cistern in 5 hours. The cistern can be emptied by an outlet pipe in 6 hours. How much time will it take to fill the cistern if both the pipes are opened together?

a. 40 hours b. 30 hours

c. 50 hours d. 100 hours

22. 10 workers can earn ₹4,800 in 5 days. What amount will 8 workers earn in 9 days?

a. ₹6,912 b. ₹6,921

c. ₹9,621 d. ₹7,291

23. Vimlesh can complete $\frac{1}{3}$ of a piece of work in 10 hours. His sister Reema can complete $\frac{1}{5}$ of the same work in 12 hours. In how many hours can they together complete the work?

a. 40 hours

b. 20 hours

c. 60 hours

d. 90 hours

24. Thirty-five children need 122.5 m^2 of space for their act. If the area of the available space is 21 m^2, then how many children can give the performance in that area?

a. 6 b. 10

c. 7 d. 20

25. Rajudas can do 25% of a piece of work in 5 days. In how many days will he take to complete the work 10 times?

a. 150 days

b. 100 days

c. 200 days

d. 180 days

SECTION - C : BRAINBOX

26. A varies directly as r^2 and V varies directly as r^3. If A is increased by 44%, then by what per cent is V increased?

a. 72.8 % b. 74.8 %

c. 72.6 % d. – 72.8 %

27. Shyam is twice as good as Meenu. Together, they finish the work in 14 days. In how many days can Meenu alone do the same work?

a. 16 b. 21

c. 32 d. 42

28. Two trains for Pune leave at 6:00 a.m. and 6:45 a.m., respectively from the New Delhi railway station and travel at 100 kmph and 136 kmph, respectively. At this speed, how will the two trains travel together from Delhi?

a. 283.33 km b. 260 km

c. 290 km d. 270 km

29 In a fort, there was sufficient food for 200 soldiers for 31 days. After 27 days, 120 soldiers left the fort. For how many extra days will the rest of the food last for the remaining soldiers?

a. 12 days b. 7 days

c. 6 days d. 13 days

30. A finishes $\frac{6}{7}$ of the work in 2z hours, B works twice as fast as A and finishes the remaining work. For how long did B work?

a. $\left(\frac{4}{5}\right)$z hours

b. $\left(\frac{5}{10}\right)$z hours

c. $\left(\frac{1}{6}\right)$z hours

d. $\left(\frac{7}{48}\right)$z hours

Darken your choice with HB pencil

1.	a	b	c	d	9.	a	b	c	d	17.	a	b	c	d	25.	a	b	c	d
2.	a	b	c	d	10.	a	b	c	d	18.	a	b	c	d	26	a	b	c	d
3.	a	b	c	d	11.	a	b	c	d	19.	a	b	c	d	27	a	b	c	d
4.	a	b	c	d	12.	a	b	c	d	20.	a	b	c	d	28	a	b	c	d
5.	a	b	c	d	13.	a	b	c	d	21.	a	b	c	d	29	a	b	c	d
6.	a	b	c	d	14.	a	b	c	d	22.	a	b	c	d	30	a	b	c	d
7.	a	b	c	d	15.	a	b	c	d	23.	a	b	c	d					
8.	a	b	c	d	16.	a	b	c	d	24.	a	b	c	d					

Chapter
10 Visualising Solid Shapes

SECTION - A : MATHEMATICAL REASONING

1. The number of faces in a triangular prism is

a. 5 b. 4

c. 3 d. 2

2. The number of edges in a hexahedron is

a. 10 b. 11

c. 12 d. 14

3. A point where three faces of a figure meet is known as its

a. angle b. vertex

c. edge d. none of these

4. A triangular pyramid is called a

a. prism b. hexahedron

c. icosahedron d. tetrahedron

5. Which of the following is a Euler's formula?

a. $F + V - E = 2$

b. $F + E - V = 2$

c. $F - V - E = 2$

d. $E + V - F = 2$

6. A solid figure which has only one vertex is a

a. cylinder

b. cone

c. pyramid

d. prism

7. The number of vertices in a dodecahedron are

a. 10 b. 12

c. 20 d. 30

8. A solid with 5 faces, 5 vertices and 8 edges is a

a. cube b. cuboid

c. square pyramid d. tetrahedron

9. Each face of an icosahedron is a/an

a. pentagon

b. square

c. hexagon

d. equilateral triangle

10. The number of vertices in an octagonal pyramid is

a. 9 b. 10

c. 8 d. 6

11. Which of the following is a two-dimensional figure?

a. Rectangle b. Rectangular Prism

c. Square Pyramid d. Square Prism

12. Which of the following can be the base of a pyramid?

a. Line Segment b. Circle

c. Octagon d. Oval

13. Which of following 3D shapes does not have a vertex?

a. Pyramid

b. Prism

c. Cone

d. Sphere

14. A solid with only line segments as its edges is a

a. polyhedron

b. cone

c. cylinder

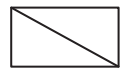
d. polygon

15. Which of the following nets given below generate a cone?

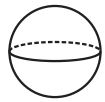
a. 

b. 

c. 

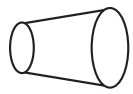
d. 

16. Which of following shapes has a vertex?

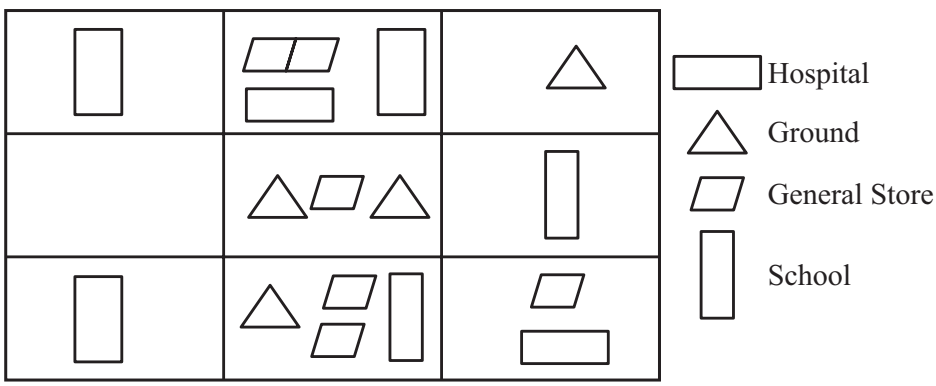
a. 

b. 

c. 

d. 

Directions (Q17 to Q19): The following is the map of a town.



17. The number of hospitals in the town is

a. 2 b. 1

c. 4 d. 5

18. The ratio of general stores to the schools is

a. 3 : 2

b. 6 : 5

c. 4 : 7

d. 8 : 5

19. The number of grounds in the town is

a. 4 b. 5

c. 6 d. 10

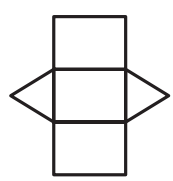
20. The given net can be folded to make a

a. tetrahedron

b. hexagonal prism

c. triangular prism

d. none of these



21. Which of the following best describes the given shape?

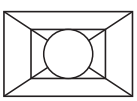
a. Half Cylinder and Cone

b. Two Cones

c. Hemisphere

d. Two Cylinders

22. Which of following shows top view of the following figure?

a. 

b. 

c. 

d. None of these

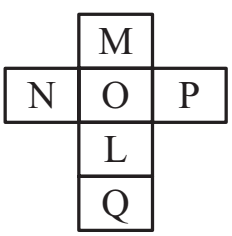
23. The net shown below can be folded into the shape of a cube. Which of the following letters of the English alphabet would be opposite to the face marked with letter L?

a. M

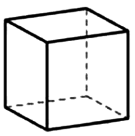
b. N

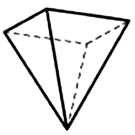
c. Q

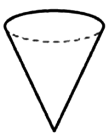
d. O

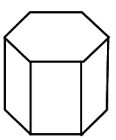


24. Which amongst the following is not a polyhedron?

a. 

b. 

c. 

d. 

25. An octahedron has ____edges.

a. 12

b. 30

c. 6

d. 40

26. The side of a square garden is 30 m. If the scale used to draw its picture is 1 : 500, then the perimeter of the square picture is

a. 120 m

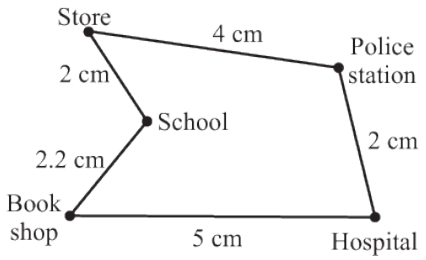
b. 260 m

c. 300 m

d. 150 m

SECTION - C : BRAINBOX

27. In the given map, the distance between the places is shown using the scale 1 : 50000, then the actual distance between the school and the book shop is



a. 1.2 km

b. 4.2 km

c. 1.1 km

d. 2 km

28. Read the following statements.

Statement 1: A polyhedron can have 10 faces, 20 edges and 15 vertices.

Statement 2: Every, solid shape has a unique net.

Which of the following is the correct option?

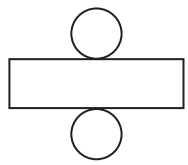
a. Both are not true

b. Both statements are true

c. Statement 1 is true and statement 2 is false

d. None of these

29. Which of the following shapes represent the given net?



a. Rectangle

b. Square

c. Cylinder

d. None of these

30. The scale, if actual size is 12 m and the drawing size is 3 cm is

a. 1 cm = 4 m

b. 4 m = 3 cm

c. 4 cm = 5 m

d. None of these

Darken your choice with HB pencil

1.	a	b	c	d	9.	a	b	c	d	17.	a	b	c	d	25.	a	b	c	d
2.	a	b	c	d	10.	a	b	c	d	18.	a	b	c	d	26	a	b	c	d
3.	a	b	c	d	11.	a	b	c	d	19.	a	b	c	d	27	a	b	c	d
4.	a	b	c	d	12.	a	b	c	d	20.	a	b	c	d	28	a	b	c	d
5.	a	b	c	d	13.	a	b	c	d	21.	a	b	c	d	29	a	b	c	d
6.	a	b	c	d	14.	a	b	c	d	22.	a	b	c	d	30	a	b	c	d
7.	a	b	c	d	15.	a	b	c	d	23.	a	b	c	d					
8.	a	b	c	d	16.	a	b	c	d	24.	a	b	c	d					

Chapter
11

Mensuration

SECTION - A : MATHEMATICAL REASONING

1. The ratio of surface areas of two cubes is 49 : 64. The ratio of their volumes are

a. $\frac{343}{512}$ b. $\frac{259}{343}$

c. $\frac{49}{16}$ d. $\frac{7}{8}$

2. Three cubes whose edges are 6 cm, 7 cm and 8 cm are melted without any loss of metal into a single cube. The edge of the new cube is

a. 145 cm b. 10.3 cm

c. 12.5 cm d. 16.7 cm

3. The volume of an oil tank is 4 m^3. Its capacity in litres is

a. 8000 b. 6000

c. 4000 d. 10000

4. If the radius of a circle is diminished by 10%, then its area is diminished by

a. 10 % b. 19 %

c. 20 % d. 36 %

5. If the height of a cylinder becomes $\frac{1}{2}$ of the original height and the radius is doubled, then which of the following is true?

a. Volume of cylinder will be doubled.

b. Volume of cylinder remain unchanged.

c. Volume of cylinder will be halved.

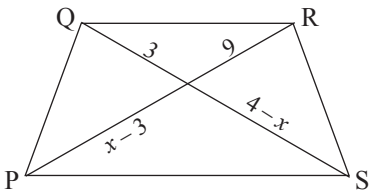
d. Volume of cylinder $\frac{1}{4}$ of its original volume.

6. A regular hexagon is inscribed in a circle of radius *r*. The perimeter of a regular hexagon is

a. $6r$ b. $8r$

c. $7r$ d. $10r$

7. PQRS, in the given figure, is an isosceles trapezium. The value of *x* is



a. 4 units b. 5 units

c. 4.5 units d. 5.4 units

8. The lateral surface area of a cuboid of dimensions 11.5 cm × 8.5 cm × 5.5 cm is

a. 240 cm^2

b. 420 cm^2

c. 220 cm^2

d. 222 cm^2

9. Two cylinders have their radii in ratio 8 : 9 and their heights in ratio 3 : 2. The ratio of their curved surface areas is

a. $\frac{3}{9}$

b. $\frac{4}{3}$

c. $\frac{3}{4}$

d. $\frac{3}{5}$

10. If the radius of the base of a right circular cylinder is halved by keeping this height same, then the ratio of the volume of smaller cylinder to that of the original cylinder is

a. $\frac{1}{4}$ b. $\frac{3}{4}$

c. $\frac{9}{4}$ d. $\frac{4}{3}$

11. How many circular iron disks each of radius 7 cm and 3 cm thickness should be melted to form a cube of edge 6 cm?

a. ≈469 b. ≈0.468

c. ≈470 d. ≈472

12. The ratio between CSA and TSA of right circular cylinder is 5 : 6. The ratio of height to its radius is

a. 2 : 5 b. 4 : 5

c. 1 : 5 d. 5 : 1

13. A rectangular sheet of aluminium foil is 55 cm long and 33 cm wide. A cylinder is made out of it by rolling foil along its length. The TSA of cylinder is

a. 547 cm^2 b. 2296.25 cm^2

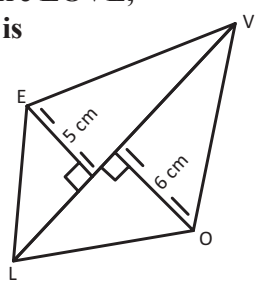
c. 450 cm^2 d. 470 cm^2

14. The total surface area of a cube, whose volume is 15625 cm^3, is

a. 3750 cm^2 b. 14076 cm^2

c. 13076 cm^2 d. 12072 cm^2

15. The area of the figure LOVE, where LV = 20 cm, is



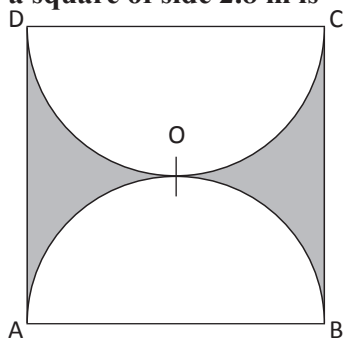
a. 220 cm^2

b. 240 cm^2

c. 110 cm^2

d. 720 cm^2

16. The area of the shaded portion if ABCD is a square of side 2.8 m is



a. 1.68 m^2 b. 170 m^2

c. 270 m^2 d. 450 m^2

17. The number of bricks, each measuring 25 cm × 12 cm × 7 cm required to construct a wall 14 m long, 6 m high and 1 m thick while cement will occupy 10% of the total volume of the wall is

a. 35000 b. 45000

c. 36000 d. 17000

18. The cost of painting the lateral surface area of a cube-shapes block at the rate of 50 paise per cm^2 is ₹1,152. The volume of the cube is

a. 13824 cm^2 b. 12320 cm^2

c. 28340 cm^2 d. 30400 cm^2

19. A room 7 m × 9 m is to be carpeted by a carpet 3 m wide. The length of the carpet required is

a. 50 m b. 20 m

c. 21 m d. 30 m

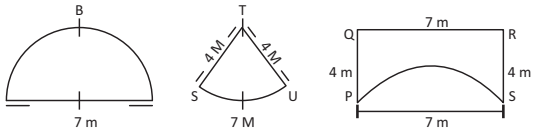
20. The area of a rectangular box is 15 times its breadth. If the difference between the length and breadth of the box is 8 m, then what is the measure of its breadth?

a. 7 m b. 9 m

c. 10 m d. 8 m

SECTION - B : EVERYDAY MATHEMATICS

21. There are 3 different paths in a big lawn. Naman, who goes for a walk in the lawn, walks along all the three paths. On which path does he have to walk the least?



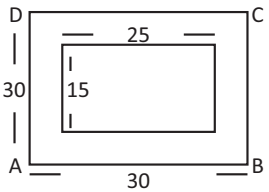
a. STU
b. ABC
c. PQRS
d. Data insufficient

22. The outer circumference of a circular path is 220 m. The track is 7 m wide everywhere. The cost of levelling the track at the rate of ₹2 per square meter is

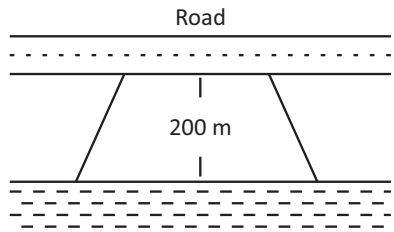
a. ₹2,772
b. ₹487.2
c. ₹282.2
d. ₹200.2

23. Mrs Bedi has a square plot as shown in the figure. She wants to construct a house in the middle of the plot. A garden is to be developed around the house. The cost of developing a garden, if the cost of developing is ₹100 per square meter is

a. ₹52,500
b. ₹38,300
c. ₹43,000
d. ₹54,500



24. Rahul wants to buy a trapezium-shaped field. Its side along the river is parallel to and thrice the side along the road. If the area of this field is 10,500 m² and the perpendicular distance between the two parallel sides is 200 m, then the length of the side along the river is



a. 78.75 m
b. 107 m
c. 205 m
d. 195 m

25. The cost of painting the outside surface of a closed cylinderical oil tank at 70 paise per square cm is ₹770. The height of the tank is 6 times the radius of the base of the tank. The volume is

a. 2357.14 m^3
b. 2537.14 m^3
c. 2358.14 m^3
d. 3257.14 m^3

SECTION - C : BRAINBOX

26. The length of the largest pole that can be placed in 12 m × 4 m × 3 m room is

a. 7 m
b. 3 m
c. 13 m
d. 8 m

27. A milk tanker in cylindrical shape with a diameter of 2 m and length 4.2 m supplies milk to two booths in the ratio 3 : 2. One of the milk booth has a rectangular vessel having base area of 4 m² and the other have cylindrical vessel with base area of 2.64 m². The level in each vessel is

a. 1.98, 2
b. 3, 4
c. 5, 6
d. 7, 7.28

28. If the rainfall on a certain day was 6 cm, then how many litres fell on 2.5 hectare of the field on that day?

a. 15,00,000 L b. 17,00,000 L

c. 20,00,000 L d. 20,000 L

29. A rectangular reservoir is 120 m long and 75 m wide. The speed of the water flowing into it through a square pipe of side 20 cm such that the water rises by 1.2 m in 9 hours is

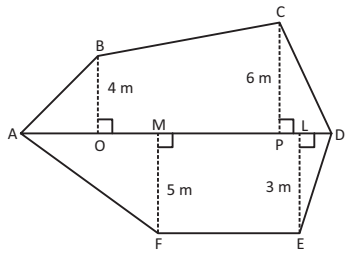
a. 29 km/hour

b. 31 km/hour

c. 30 km/hour

d. 32 km/hour

30. The area of hexagon ABCDEF, if



AD = 10 m; BO = 4 m; AL = 8 m;
MF = 5 m; AP = 7 m; EL = 3 m;
AM = 5 m; CP = 6 m; AO = 3 m, is

a. 62.5 m^2

b. 72.5 m^2

c. 30 m^2

d. 30 m^2

Darken your choice with HB pencil

1.	a	b	c	d	9.	a	b	c	d	17.	a	b	c	d	25.	a	b	c	d
2.	a	b	c	d	10.	a	b	c	d	18.	a	b	c	d	26	a	b	c	d
3.	a	b	c	d	11.	a	b	c	d	19.	a	b	c	d	27	a	b	c	d
4.	a	b	c	d	12.	a	b	c	d	20.	a	b	c	d	28	a	b	c	d
5.	a	b	c	d	13.	a	b	c	d	21.	a	b	c	d	29	a	b	c	d
6.	a	b	c	d	14.	a	b	c	d	22.	a	b	c	d	30	a	b	c	d
7.	a	b	c	d	15.	a	b	c	d	23.	a	b	c	d					
8.	a	b	c	d	16.	a	b	c	d	24.	a	b	c	d					

Chapter
12

Probability

SECTION - A : MATHEMATICAL REASONING

1. What is probability of choosing a vowel from letters of the English alphabet?

a. $\frac{3}{25}$ b. $\frac{4}{26}$

c. $\frac{1}{26}$ d. $\frac{5}{26}$

2. When a coin is tossed, there are _____ outcomes.

a. 2 b. 3

c. 5 d. 4

3. The probability of an event lies between ___ and ____ .

a. 0, 1 b. 1, 2

c. –1, 1 d. 1, 0

4. The probability of getting an even number in one throw of a dice is

a. $\frac{1}{3}$ b. $\frac{1}{2}$

c. $\frac{1}{4}$ d. $\frac{1}{6}$

5. There are 30 prizes and 25 blanks in a lottery. What is the probability of getting a prize?

a. $\frac{4}{5}$ b. $\frac{2}{3}$

c. $\frac{6}{11}$ d. $\frac{5}{11}$

6. If there is a spinning wheel with 4 blue sectors and 1 green sector. What is probability of getting a blue sector?

a. $\frac{3}{2}$ b. $\frac{4}{5}$

c. $\frac{3}{4}$ d. $\frac{4}{7}$

7. If all the rearrangements of the word AMAZON are considered, what is the probability that M will appear between two As?

a. $\frac{1}{3}$ b. $\frac{1}{6}$

c. $\frac{2}{5}$ d. $\frac{3}{8}$

8. Two dice are rolled together. The probability that the sum of the numbers shown on the two dice is the maximum or the minimum is

a. $\frac{1}{18}$ b. $\frac{1}{9}$

c. $\frac{1}{6}$ d. $\frac{1}{36}$

9. A survey is conducted among 300 senior citizens. $\frac{1}{3}$ of which are below 70, $\frac{1}{2}$ are between 70 and 80 and the rest above 80. The probability of the first one to respond will be the most junior is

a. $\frac{1}{30}$ b. $\frac{1}{300}$

c. $\frac{1}{3}$ d. $\frac{1}{150}$

10. In throwing a dice, what is the probability of getting a number 4?

a. $\frac{2}{3}$ b. $\frac{1}{6}$

c. $\frac{2}{3}$ d. $\frac{4}{7}$

11. From a pack of 52 cards, one card is drawn at random. The probability of getting a king or a queen is

a. $\frac{8}{54}$ b. $\frac{7}{54}$

c. $\frac{2}{13}$ d. $\frac{6}{11}$

12. Two fair dice are thrown at random. What is the probability of throwing a doublet?

a. $\frac{1}{6}$ b. $\frac{7}{5}$

c. $\frac{6}{5}$ d. $\frac{7}{9}$

13. In a bag, there are 12 black and 6 white balls. Two balls are chosen at random without replacement. The first one is found to be black. The probability of second one is also black is

a. $\frac{7}{6}$ b. $\frac{11}{17}$

c. $\frac{4}{9}$ d. $\frac{2}{7}$

14. Three coins are tossed together. The probability of getting two tails and one head is

a. $\frac{7}{8}$ b. $\frac{3}{8}$

c. $\frac{5}{8}$ d. $\frac{6}{7}$

15. A person has three children with at least one boy. The probability of having at least two boys among the children is

a. $\frac{3}{4}$ b. $\frac{2}{3}$

c. $\frac{4}{7}$ d. $\frac{4}{5}$

16. What is the probability of throwing a number greater than 2 with a fair dice?

a. $\frac{4}{9}$ b. $\frac{7}{5}$

c. $\frac{2}{3}$ d. $\frac{7}{9}$

17. Three cards numbered 2, 4 and 8 are put in a box if a card is drawn at random. What is the probability of getting an odd number?

a. 1

b. 0

c. 7

d. 10

18. On a particular day, a survey of 1000 people is conducted. It was found that 800 people like cricket and 200 dislike cricket. The probability of people who dislike cricket is

a. $\frac{1}{5}$ b. $\frac{1}{4}$

c. $\frac{1}{3}$ d. $\frac{1}{7}$

19. A dice is thrown at random. The probability of getting a number which is the multiple of 3 is

a. $\frac{1}{7}$ b. $\frac{1}{2}$

c. $\frac{1}{3}$ d. $\frac{1}{5}$

20. Only 50 students appear in a test out of 75. What is the probability that the chosen student did not appear in the test?

a. 0.7

b. 0.6

c. 0.4

d. 0.33

SECTION - B : EVERYDAY MATHEMATICS

21. The probability of guessing the correct answer to a certain question is $\frac{x}{3}$. If the probability of not guessing the correct answer is $\frac{3}{5}$, then the value of x is

a. $\frac{6}{5}$ b. $\frac{2}{5}$

c. $\frac{1}{3}$ d. $\frac{3}{4}$

22. A bag contains blue, red and green counters only. A counter is drawn at random from the bag. If the probability of getting a blue counter is $\frac{1}{4}$ and that of a red counter is $\frac{3}{8}$, then the probability of getting a green counter is

a. $\frac{1}{4}$ b. $\frac{3}{8}$

c. $\frac{2}{3}$ d. $\frac{1}{3}$

23. A bag contains 24 balls out of which x are red balls. If 4 more red balls are added in the bag, then the probability of drawing a red ball becomes double. The value of x is

a. 7 b. 8

c. 12 d. 3

24. A survey of 750 families is shown below.

No. of girl child in families	0	1	2
No. of families	150	200	400

The probability of choosing a family who have exactly 2 girls is

a. $\frac{8}{15}$

b. $\frac{15}{8}$

c. $\frac{23}{24}$

d. $\frac{25}{26}$

25. In a match, a batsman hits 10 times out of 12 balls. The probability when the batsman does not hit the ball is

a. $\frac{1}{7}$

b. $\frac{2}{5}$

c. $\frac{1}{6}$

d. $\frac{7}{5}$

SECTION - C : BRAINBOX

26. The probability that a leap year chosen at random will have 53 Sundays is

a. $\frac{4}{5}$

b. $\frac{9}{7}$

c. $\frac{2}{366}$

d. $\frac{2}{7}$

27. The probability of forming 187 or 215 with three digits from 1, 2, ... 9, when only three digit numbers are to be formed and the repetitions are not allowed, is

a. $\frac{1}{255}$ b. $\frac{1}{254}$

c. $\frac{1}{252}$ d. $\frac{1}{253}$

28. Cards are marked from 3 to 200 are placed in a box and mixed thoroughly. One card is drawn at random from the box. The probability that the number on the card is a perfect cube is

a. $\frac{2}{99}$

b. $\frac{4}{99}$

c. $\frac{1}{40}$

d. $\frac{7}{200}$

29. A bag contains 100 tickets of number 1, 2, 3, 4, ... 100. If a ticket is drawn out of it at random, then what is the probability that the ticket drawn has the digit 2 on it?

a. $\frac{17}{100}$ b. $\frac{19}{100}$

c. $\frac{100}{17}$ d. $\frac{20}{100}$

30. Two fair dice are thrown at random. The probability of obtaining prime numbers on both the dice is

a. $\frac{1}{6}$ b. $\frac{7}{36}$

c. $\frac{1}{4}$ d. $\frac{5}{36}$

Darken your choice with HB pencil

1.	a	b	c	d	9.	a	b	c	d	17.	a	b	c	d	25.	a	b	c	d
2.	a	b	c	d	10.	a	b	c	d	18.	a	b	c	d	26	a	b	c	d
3.	a	b	c	d	11.	a	b	c	d	19.	a	b	c	d	27	a	b	c	d
4.	a	b	c	d	12.	a	b	c	d	20.	a	b	c	d	28	a	b	c	d
5.	a	b	c	d	13.	a	b	c	d	21.	a	b	c	d	29	a	b	c	d
6.	a	b	c	d	14.	a	b	c	d	22.	a	b	c	d	30	a	b	c	d
7.	a	b	c	d	15.	a	b	c	d	23.	a	b	c	d					
8.	a	b	c	d	16.	a	b	c	d	24.	a	b	c	d					

Chapter
13 Introduction to Graphs

SECTION - A : MATHEMATICAL REASONING

1. In which quadrant does (– 4, 4) lie?

a. I
b. II
c. III
d. IV

2. (0, – 6) lies on the

a. positive x-axis
b. negative y-axis
c. negative x-axis
d. positive y-axis

3. The co-ordinates of origin are

a. (0, 0)
b. (0, 1)
c. (1, 1)
d. (2, 0)

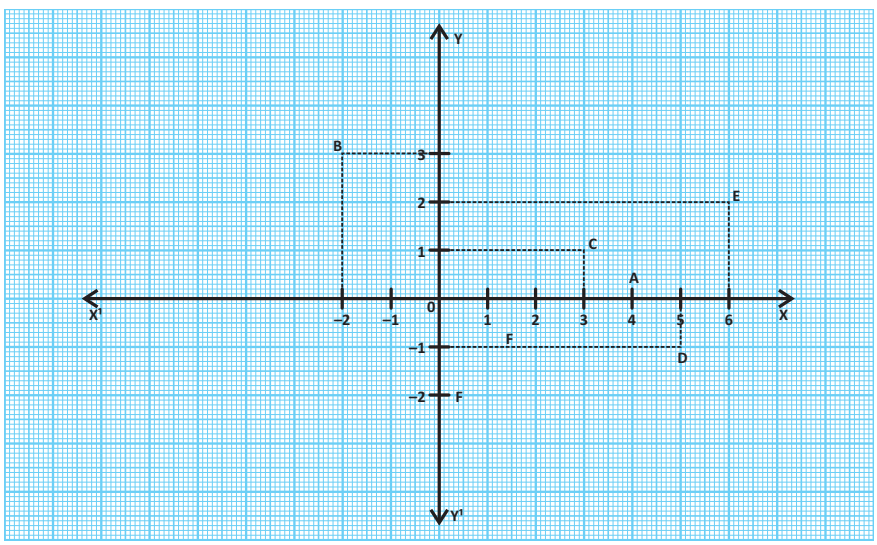
4. The point which lies on the y-axis has its

a. both co-ordinates zero
b. y co-ordinate zero
c. x co-ordinate zero
d None of these

5. In which quadrant does (1, 5) lie?

a. I
b. II
c. III
d. IV

Directions (Q6 to Q11): Look at the graph given below to answer the following questions.



6. The co-ordinates of point A is

a. (4, 0)

b. (3, – 4)

c. (4, – 4)

d. (0, – 2)

7. The co-ordinates of point B is

a. (5, – 1)

b. (– 2, 3)

c. (0, – 2)

d. (0, – 3)

8. The co-ordinates of point C is

a. (4, 1)

b. (0, – 2)

c. (3, 1)

d. (1, 2)

9. The co-ordinates of point D is

a. (4, – 1)

b. (5, – 1)

c. (0, – 2)

d. (2, 1)

10. The co-ordinates of point E is

a. (6, 2)

b. (4, 2)

c. (5, 6)

d. (4, 5)

11. The co-ordinates of point F is

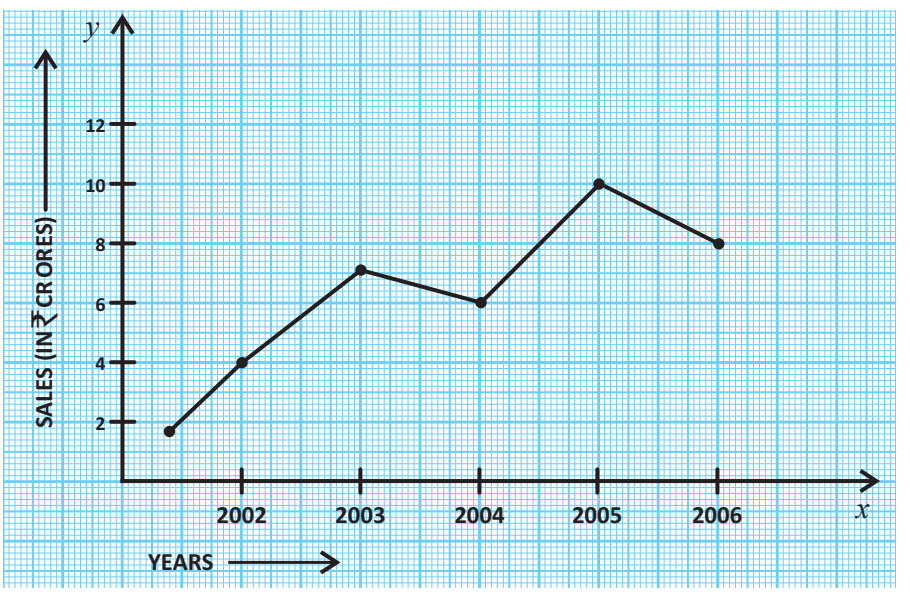
a. (2, – 3)

b. (5, – 1)

c. (0, – 2)

d. (6, 7)

Directions (Q12 to Q15): The following line graph shows the yearly sales' figures of a manufacturing company. Study this graph and answer the following questions.



12. What is the sales of the company in 2002?

a. 2 crores

b. 4 crores

c. 6 crores

d. 8 crores

13. What is the total sales of the company in 2004 and 2005?

a. 16 crores

b. 10 crores

c. 15 crores

d. 12 crores

14. In which year was the sales highest?

a. 2006

b. 2005

c. 2003

d. 2002

15. In which year the difference between the sales as compared to its previous year was the greatest?

a. 2003

b. 2004

c. 2005

d. 2006

---

16. The co-ordinates (– 3, 2) and (2, – 3) represent

a. different points

b. same point

c. the origin

d. none of these

17. By joining the co-ordinates (–1, –1), (0, 0) and (3, 3), the graph obtained is a

a. a triangle

b. a curved line

c. a straight line passing through the origin

d. a straight line not passing through the origin

18. Which of the following points lie on *y*-axis?

a. (4, – 4) b. (0, 3)

c. (2, –2) d. (2, 3)

19. Which of the following points does not lie on *x*-axis?

a. (3, 0)

b. (–2, 0)

c. (4, 0)

d. (0, 3)

20. The point (3, 2) is nearer to

a. *x*-axis

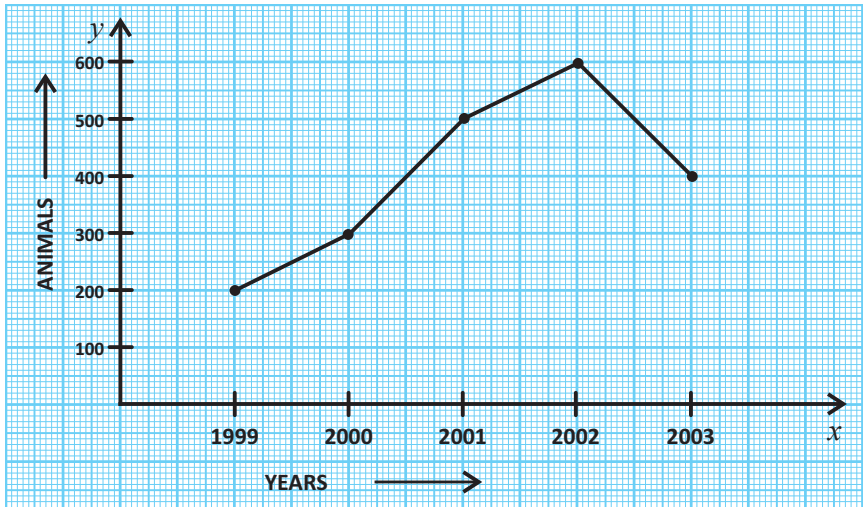
b. *y*-axis

c. origin

d. none of these

SECTION - B : EVERYDAY MATHEMATICS

Directions (Q21 to Q23): Study the following graph and answer the following questions.



21. In which year did the zoo have the largest number of animals?

a. 2000 b. 2001

c. 2002 d. 2003

22. What is the percentage increase of the animals in zoo from 1999 to 2001?

a. 300 % b. 150 %

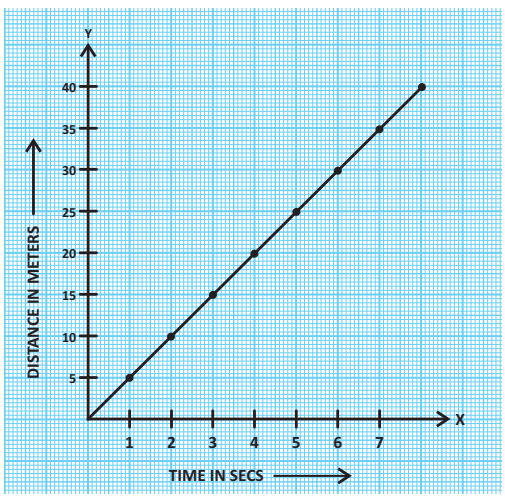
c. 250 % d. 101 %

23. How many animals did the zoo have in the year 2001 and 2002?

a. 1000 b. 1100

c. 1200 d. 1400

Study the line graph given below to answer Q24 and Q25.



24. The time taken by a body to cover 30 meters is

a. 6 secs

b. 4 secs

c. 16 secs

d. 4 secs

25. The difference between the *y* co-ordinates of point A (5, 6) and B (8, 9) is

a. 4 b. 3

c. 2 d. 5

SECTION - C : BRAINBOX

26. Which type of figure is obtained when we join A (1, 2), B (5, 2), C (6, 5) and D (2, 5)?

a. Square
b. Parallelogram
c. Rhombus
d. Rectangle

27. Read the given statements carefully.

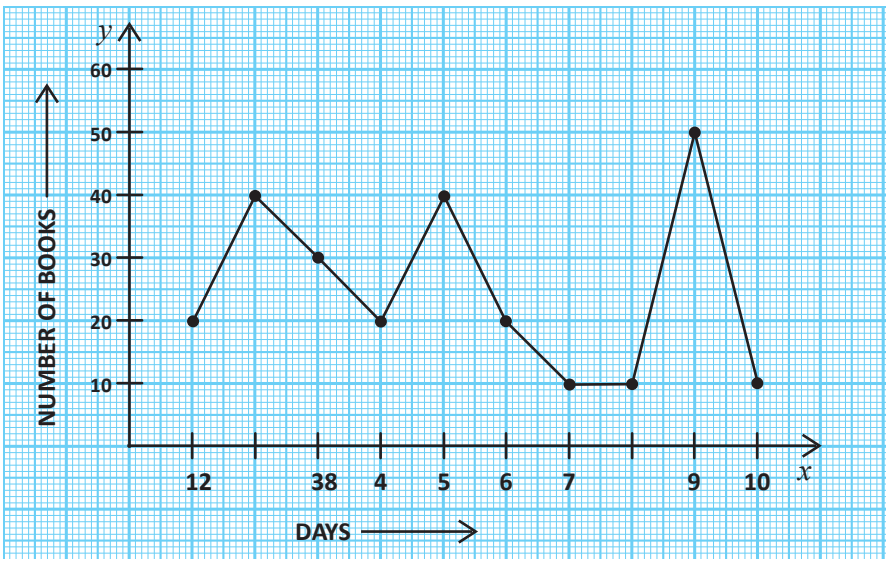
Statement 1: The *x*- and *y*-axis divides co-ordinate plane into four quadrants.

Statement 2: The co-ordinates (4, –2) lie in the second quadrant.

Which of the following is the correct option?

a. Statement 1 is true and statement 2 is false.
b. Statement 1 is false and statement 2 is true.
c. Both statements are true.
d. Both statements are false.

Direction (Q28 to Q29): The following graph shows the number of books that a shopkeeper sold over 10 days. Read the graph carefully to answer the following questions.



28. On which day did he sell the highest number of books?

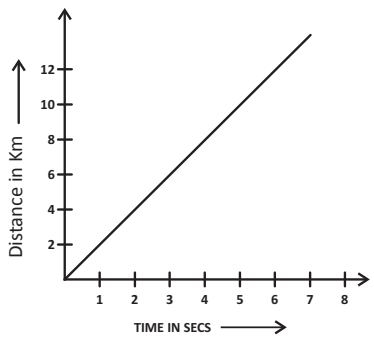
a. 8th
b. 7th
c. 9th
d. 10th

29. On an average, how many books did he sell every day?

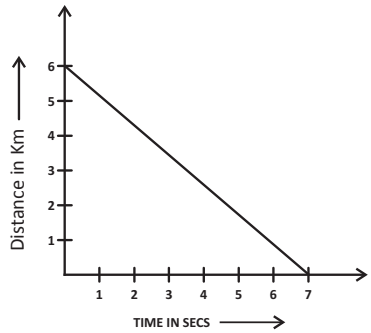
a. 25
b. 20
c. 40
d. 45

30. Which of the following graphs shows a body is at rest?

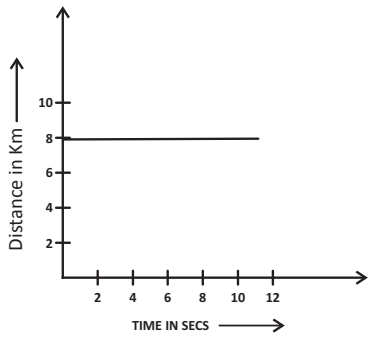
a.



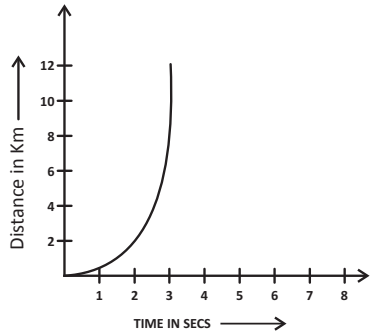
b.



c.



d.



Darken your choice with HB pencil

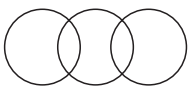
1.	a	b	c	d	9.	a	b	c	d	17.	a	b	c	d	25.	a	b	c	d
2.	a	b	c	d	10.	a	b	c	d	18.	a	b	c	d	26	a	b	c	d
3.	a	b	c	d	11.	a	b	c	d	19.	a	b	c	d	27	a	b	c	d
4.	a	b	c	d	12.	a	b	c	d	20.	a	b	c	d	28	a	b	c	d
5.	a	b	c	d	13.	a	b	c	d	21.	a	b	c	d	29	a	b	c	d
6.	a	b	c	d	14.	a	b	c	d	22.	a	b	c	d	30	a	b	c	d
7.	a	b	c	d	15.	a	b	c	d	23.	a	b	c	d					
8.	a	b	c	d	16.	a	b	c	d	24.	a	b	c	d					

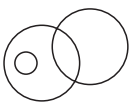
Chapter
14 Logical Reasoning

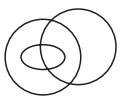
SECTION - A : MATHEMATICAL REASONING

1. Which of the following venn diagrams represent the relationship amongst "Bus, Truck, Road transport"?

a. 

b. 

c. 

d. 

2. If $9 \times 8 = 289$ and $3 \times 6 = 81$, then the value of 7×1 is

a. 64 b. 86

c. 81 d. 66

3. The value of $\frac{8.6 \times 5.3 + 8.6 \times 4.7}{4.3 \times 9.7 - 4.3 \times 8.7}$ is

a. 6.843 b. 20

c. 25 d. 8.43

4. If $2^{n-1} + 2^{n+1} = 320$, then the value of n is

a. 6 b. 8

c. 7 d. 10

5. A man is facing north-west. He turns 90° in the clockwise direction and then 135° in the anticlockwise direction. Which direction is he facing now?

a. North

b. East

c. South

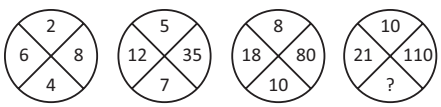
d. West

6. ★★★ + * * * = * * * * * * * * * * * * Based on the above condition, which of the following statements is true?

a. ★ = * * * * b. ★ = * * * * *

c. ★ = * * * d. ★ = * *

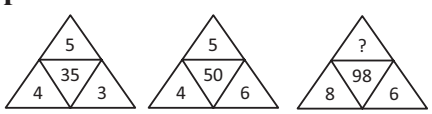
7. The missing number in the given pattern is



a. 11 b. 20

c. 9 d. 10

8. The missing number in the given pattern is



a. 12 b. 7

c. 8 d. 9

9. Which of the following will complete the given pattern?

abca ___ bcaab ___ ca __bbc ___a

a. abba b. ccaa

c. bbaa d. abac

10. On arranging the following words in a meaningful order, which of the given options is at the 4th place in the sequence?

HTLMI, HTLOI, HTLML, HTKMI

a. HTLMI b. HTLOI

c. HTLML d. HTKMI

11. There are three small squares in a big square and three smaller square separately. How many squares are there in total?

a. 20 b. 25

c. 27 d. 13

12. What will come in the place of letter A of the English alphabet? 4, 9, 25, 49, __A__, 169, 289.

a. 121 b. 625

c. 81 d. 16

13. Which of the following words cannot be formed by using the letters of the given word?

GENERALISATION

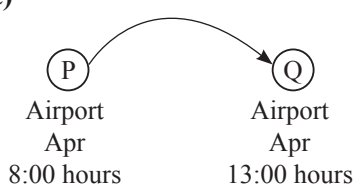
a. NOTE

b. RELATIVE

c. EAR

d. NIL

14. If the time at airport P is 2 hours ahead of airport Q according to the difference in the time zones, then what is the flight duration? (The time in 24-hour clock format)



a. 8 b. 6

c. 7 d. 10

15. Which of the following completes the given relationship?

Peacock : India : : Emu : ?

a. Australia b. Bahamas

c. Argentina d. Barn

16. Which of the following completes the given relationship?
ABCD : DAFC : : FGHI : ?

a. KMPQ

b. CIMO

c. ZBEF

d. IFKH

17. Humble is to meek as arrogant is to

a. Haughty b. Respectful

c. Submissive d. Resisless

18. Which of the following completes the given relationship?
Epidemic : Widespread : : Knife : __?__

a. Blunt b. Sharp

c. Disease d. Part

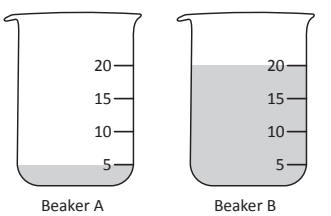
19. Choose the odd one out.

25, 625, 529, 729, 111, 4356

a. 729 b. 111

c. 529 d. 4356

20. Look at the given figures. Choose the correct option.



a. Beaker A has 25% liquid of beaker B.

b. Beaker A has 25% more liquid than beaker B.

c. Beaker A has 30% less liquid than beaker B.

d. None of these

21. Choose the odd one out.
Chandigarh - Imphal - Kohima - Telangana

a. Chandigarh

b. Kohima

c. Imphal

d. Telangana

22. What comes next?
12, 27, 48, 75, ?

a. 99 b. 108

c. 96 d. 93

23. Which of the following is not divisible by the number 11?

a. 14641 b. 161051

c. 333333 d. 156821

24. The given equation becomes correct due to interchange of the two signs. Which of the following are these two signs?
6 + 12 × 6 ÷ 2 – 2 = 8

a. +, – b. ×, ÷

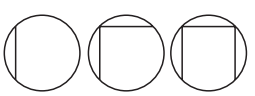
c. ÷, – d. ×, –

25. A, P, R, X, S, Z are sitting in a row. S and Z are in the centre, A and P are at the two ends and R is sitting to the left of A. Who is to the right of P?

a. A b. R

c. S d. X

26. What comes next?


?

a. 

b. 

c. 

d. 

27. Choose the correct alternative which closely matches the mirror image of the following combination, if the mirror is placed horizontally below the given combination.
A1M3b

a. ∀1W3P

b. A1WƐP

c. ∀1W3P

d. ∀1M3Ь

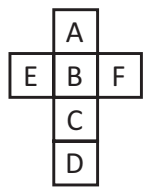
28. Sonia folds the pattern shown below to form a cube. Once folded, which of the following letter of the English alphabet will be opposite to the letter D?

a. A

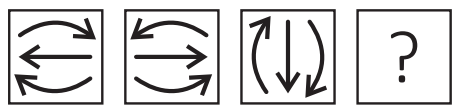
b. B

c. C

d. D



29. What comes next?

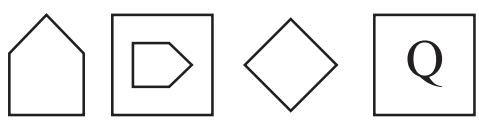


a. 

b. 

c. 

d. 

30. 

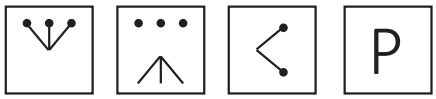
What will replace the letter Q?

a. 

b. 

c. 

d. 

31. 

What will replace the letter P?

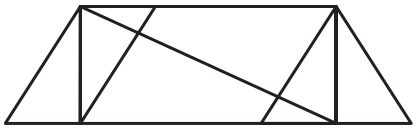
a. 

b. 

c. 

d. 

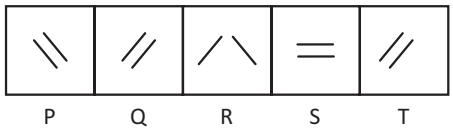
32. How many triangles are there in the given figure?



a. 14 b. 16

c. 18 d. 20

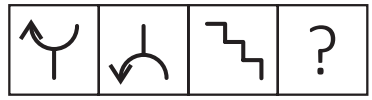
33. Choose the odd one out.



a. P b. T

c. Q d. R

34. Which of the following completes the given pattern?



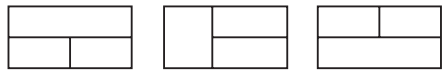
a. 

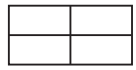
b. 

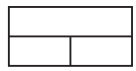
c. 

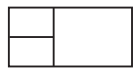
d. 

35. What comes next?



a. 

b. 

c. 

d. 

Darken your choice with HB pencil

1.	a b c d	10.	a b c d	19.	a b c d	28	a b c d
2.	a b c d	11.	a b c d	20.	a b c d	29	a b c d
3.	a b c d	12.	a b c d	21.	a b c d	30	a b c d
4.	a b c d	13.	a b c d	22.	a b c d	31	a b c d
5.	a b c d	14.	a b c d	23.	a b c d	32	a b c d
6.	a b c d	15.	a b c d	24.	a b c d	33	a b c d
7.	a b c d	16.	a b c d	25.	a b c d	34	a b c d
8.	a b c d	17.	a b c d	26	a b c d	35	a b c d
9.	a b c d	18.	a b c d	27	a b c d		

Answers

Chapter 1: Rational Numbers

1.	b	2.	c	3.	a	4.	a	5.	a	6.	a	7.	c	8.	c	9.	a	10.	d
11.	c	12.	d	13.	d	14	a	15.	b	16.	c	17.	c	18.	d	19.	a	20.	a
21.	c	22.	a	23.	a	24.	a	25.	b	26.	a	27.	b	28.	c	29.	d	30.	b

Chapter 2: Exponents and Powers

1.	a	2.	c	3.	c	4.	a	5.	d	6.	c	7.	b	8.	c	9.	a	10.	a
11.	b	12.	a	13.	c	14	a	15.	b	16.	a	17.	c	18.	d	19.	a	20.	b
21.	a	22.	b	23.	a	24.	b	25.	c	26.	a	27.	b	28.	c	29.	a	30.	c

Chapter 3: Geometry

1.	c	2.	d	3.	b	4.	b	5.	a	6.	b	7.	b	8.	a	9.	c	10.	a
11.	d	12.	d	13.	a	14	c	15.	c	16.	b	17.	c	18.	a	19.	b	20.	a
21.	b	22.	a	23.	b	24.	a	25.	a	26.	a	27.	a	28.	a	29.	c	30.	b

Chapter 4: Practical Geometry

1.	b	2.	c	3.	b	4.	c	5.	a	6.	a	7.	d	8.	a	9.	a	10.	a
11.	a	12.	b	13.	a	14	a	15.	a	16.	a	17.	a	18.	d	19.	c	20.	b
21.	c	22.	b	23.	a	24.	b	25.	c										

Chapter 5: Data Handling

1.	b	2.	c	3.	b	4.	b	5.	a	6.	c	7.	a	8.	c	9.	c	10.	c
11.	c	12.	b	13.	b	14	b	15.	b	16.	c	17.	c	18.	a	19.	b	20.	c
21.	b	22.	c	23.	c	24.	a	25.	d	26.	c	27.	b	28.	a	29.	c	30.	a

Chapter 6: Square Roots and Cube Roots

1.	a	2.	b	3.	c	4.	a	5.	d	6.	b	7.	b	8.	b	9.	d	10.	c
11.	c	12.	d	13.	c	14	a	15.	a	16.	c	17.	a	18.	c	19.	a	20.	a
21.	c	22.	a	23.	c	24.	c	25.	a	26.	b	27.	b	28.	b	29.	b	30.	c

Chapter 7: Algebra

1.	d	2.	a	3.	b	4.	d	5.	a	6.	a	7.	d	8.	b	9.	a	10.	a
11.	c	12.	b	13.	c	14	d	15.	b	16.	a	17.	b	18.	a	19.	b	20.	a
21.	b	22.	b	23.	a	24.	a	25.	c	26.	a	27.	a	28.	b	29.	b	30.	b

Chapter 8: Comparing Quantities

1.	d	2.	a	3.	b	4.	b	5.	a	6.	b	7.	a	8.	c	9.	a	10.	c
11.	d	12.	a	13.	b	14	b	15.	b	16.	b	17.	a	18.	a	19.	a	20.	d
21.	a	22.	b	23.	b	24.	c	25.	a	26.	b	27.	d	28.	b	29.	b	30.	a

Chapter 9: Direct and Indirect Variation

1.	a	2.	c	3.	a	4.	b	5.	d	6.	b	7.	b	8.	a	9.	c	10.	b
11.	d	12.	a	13.	a	14	c	15.	c	16.	b	17.	a	18.	b	19.	a	20.	c
21.	b	22.	a	23.	b	24.	a	25.	c	26.	a	27.	d	28.	a	29.	c	30.	c

Chapter 10: Visualising Solid Shapes

1.	a	2.	c	3.	b	4.	d	5.	a	6.	b	7.	c	8.	c	9.	d	10.	a
11.	a	12.	c	13.	d	14	a	15.	a	16.	c	17.	a	18.	b	19.	a	20.	c
21.	b	22.	a	23.	a	24.	c	25.	a	26.	a	27.	c	28.	a	29.	a	30.	a

Chapter 11: Mensuration

1.	a	2.	b	3.	c	4.	b	5.	a	6.	a	7.	b	8.	c	9.	b	10.	a
11.	b	12.	d	13.	b	14	a	15.	c	16.	a	17.	c	18.	a	19.	c	20.	a
21.	a	22.	a	23.	a	24.	a	25.	a	26.	c	27.	a	28.	a	29.	c	30.	a

Chapter 12: Probability

1.	d	2.	a	3.	a	4.	b	5.	c	6.	b	7.	a	8.	a	9.	c	10.	b
11.	c	12.	a	13.	b	14	b	15.	c	16.	c	17.	b	18.	a	19.	c	20.	d
21.	a	22.	b	23.	d	24.	a	25.	c	26.	d	27.	c	28.	a	29.	b	30.	c

Chapter 13: Introduction to Graphs

1.	b	2.	b	3.	a	4.	c	5.	a	6.	a	7.	b	8.	c	9.	b	10.	a
11.	c	12.	b	13.	a	14	b	15.	c	16.	a	17.	c	18.	b	19.	d	20.	a
21.	c	22.	b	23.	b	24.	a	25.	b	26.	b	27.	a	28.	c	29.	a	30.	c

Chapter 14: Logical Reasoning

1.	a	2.	a	3.	b	4.	c	5.	d	6.	c	7.	a	8.	b	9.	d	10.	b
11.	d	12.	a	13.	b	14	c	15.	a	16.	d	17.	a	18.	b	19.	b	20.	a
21.	d	22.	b	23.	d	24.	b	25.	d	26.	d	27.	a	28.	b	29.	d	30.	d
31.	d	32.	a	33.	d	34.	a	35.	d										

My Notes

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