

Time 3 Hours

Number 75

### Directions

1. It is compulsory to solve all the questions.
2. The marks allotted to the questions are marked against them.
3. Question No. 1 to Question No. 5 are objective type questions.
4. An internal choice is given in each question from questions 6 to 23.

Q.1 Select the correct option and write.

 $(1 \times 6 = 6)$ 

- i. Which of the following is a rational number:

- b. 0

- $$C. \frac{1}{2}$$

- d. above all

- ii. Which of the following is a polynomial:

- b.  $\frac{x-1}{x+2}$

- c.
- $x^2 + 3x$

- d. none of these

- iii. Which of the following rational numbers lie between 1 and 2:

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

- b.  $\frac{1}{5}$

- C. 7

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

- iv. The power of the polynomial  $4x^3 - 5x^4 + 6x^2 - 1$  is:

- b. 3

- c. 2

- d. 1

- v. The zero of the polynomial  $1 - 2x$  is:

- b. 1

- C.**

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

- vi.
- $(\sqrt{a} + \sqrt{b})(\sqrt{a} - \sqrt{b}) = \dots\dots\dots$

- b.  $a - b$

- c.  $2\sqrt{a}$

- d.  $2\sqrt{b}$

Q.2. Fill in the places.

 $(1 \times 6 = 6)$ 

- i. The smallest natural number is ..... (0/1)

- ii. The polynomial 0 is called the ..... term. (linear/zero)

- iii. The value of  $16^{\frac{1}{2}}$  is ..... (4 / 3)

- iv.  $\sqrt{2}$  is a ..... number. (rational/irrational)

- v. The zero of the polynomial  $x - 3$  is ..... (3 / -3)

- vi. There are ..... rational numbers between two rational numbers. (one / infinite)

Q.3. Make the right pair.

$(1 \times 6 = 6)$

|   | (A)                     | (B)               |
|---|-------------------------|-------------------|
| 1 | $-6 + 3$                | a. $\frac{1}{10}$ |
| 2 | $1 \frac{5}{11} \div 1$ | b. $\frac{3}{4}$  |
| 3 | $\frac{1}{4}$           | c. 0.02           |
| 4 | $\frac{2}{100}$         | d. 20             |
| 5 | 0.1                     | e. 1              |
| 6 | $-2 \div (-2)$          | f. $\frac{2}{8}$  |

Q.4. Answer the following questions in one word / one sentence.

(1 × 6 = 6)

- Write the power of the polynomial  $7x^2 - x^4 + 7x - 4$ .
- Write the product of  $5\sqrt{5}$  and  $2\sqrt{5}$ .
- Write the coefficient of  $x^2$  in the polynomial  $x^4 - 3x^2 + 2x + 4$ .
- Write one rational number between  $\frac{1}{7}$  and  $\frac{2}{7}$ .
- Write any one integer less than -3.
- Write the value of  $3^0$ .

Q.5. Write True/False in the following statements.

(1 × 6 = 6)

- $3\sqrt{5}$  is a rational number.
- The constant term in the polynomial  $2x + 5$  is 5.
- The decimal expansion of an irrational number is non-terminating non-repeating.
- Every natural number is a whole number.
- Every whole number is a positive integer.
- Every rational number is an integer.

Q.6. Write the number in the blank box.

(2)

$345 \times 5 =$

Multiply:  $3.5 \times 0.3$

OR

Q.7. Solve the given question and write the answer in the box.

(2)

Quotient in  $805 \div 10 =$

Remainder =

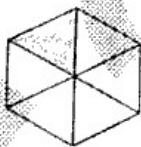
OR

Solve:  $\frac{4}{11} \div \frac{5}{22}$

Q.8. Write the shaded part of the given figure as a fraction.

(2)

Picture



OR

Simplify:  $\frac{5}{12} + \frac{6}{12} - \frac{3}{12}$

(2)

Q.9. Renu went to eat golgappa with her 6 friends. The shopkeeper fed him a total of 72 golgappas. If everyone ate golgappas equally, then tell how many each of his companions did eat golgappas?

OR

Rohan bought copies of Rs 137 and pens for Rs 86 from a stationery shop. How much money did Rohan give to the shopkeeper?

(2)

Q.10. Write the equivalent fraction of the given fraction by writing the appropriate number in the blank box

$$\frac{8}{80} = \frac{2}{\square}$$

OR

If the length of a rectangular card is 12 cm and width is 8 cm, then what will be the perimeter of the card? (2)

Q.11. There are total 269 cabinets in a library. If 35 books are kept in a cabinet, then how many books will be kept in all the cabinets?

OR

Adding a number to the number 5186 gives 9351. Which number is that? (2)

Q.12. Shade the part  $\frac{1}{4}$  in the given figure?



OR

Ravi has 8 ribbons. If the length of each ribbon is 6 meters, then how many meters of ribbon does Ravi have? (2)

Q.13. If the cost of 9 pens is Rs 54, then what will be the cost of one pen?

OR

Ansh got 19 marks in the test and Kavita got 27 marks, then how many less marks did Ansh get than Kavita? (2)

Q.14. Tick <, > or = in the box provided.

$$\frac{55}{100}$$



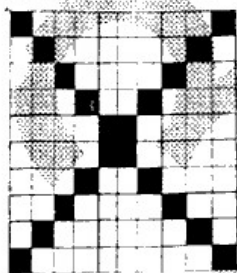
$$\frac{56}{100}$$

$$\frac{100}{100}$$

OR

Write the place values of 8 and 6 in 6789. (2)

Q.15. Write the shaded and unshaded portions of the following figure in decimal form.



OR

Surbhi wants change of Rs. 500, if she wants all Rs. 20 notes in return, how many notes will she get? (3)

Q.16. Find the three rational numbers between  $\frac{1}{3}$  and  $\frac{2}{3}$ .

OR

Rationalize the denominator  $\frac{1}{\sqrt{3}}$ . (3)

Q.17. Find the product:  $(x + 5) \times (x + 10)$

OR

Factorize  $x^2 - 25y^2$

(3)

Q. 18. Find the value of  $105 \times 106$  without multiplying directly

OR

Simplify  $95 \times 96$

(3)

Q. 19. Write the following in simple form.

i.  $\frac{10}{14}$

ii.  $\frac{30}{35}$

iii.  $\frac{56}{63}$

OR

Find the value of:

i.  $\frac{1}{6}$  of 42

ii.  $\frac{1}{4}$  of 32

iii. One tenth of 100

(3)

Q. 20. Simplify:  $(5 + \sqrt{5}) \times (5 - \sqrt{5})$

OR

Rationalize the denominator:  $\frac{1}{2 + \sqrt{3}}$

(3)

Q. 21. Define the following.

i. linear polynomial

ii. quadratic polynomial

OR

Find the value of the polynomial  $x^2 + 2x + 1$  for the following.

i.  $x = 1$

ii.  $x = -1$

(3)

Q. 22. Simplify: i.  $2^{2/3} \cdot 2^{1/3}$

ii.  $\frac{11^{3/2}}{11^{1/4}}$

OR

Find the value: i.  $(125)^{1/3}$

ii.  $(64)^{1/2}$

(4)

Q. 23. Verify that 2 and 0 are zeroes of the polynomial  $x^2 - 2x$

OR

Find the Remainder of polynomial  $x^3 - ax^2 + 6x - a$  on dividing by  $(x - a)$ .

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