



General Instructions:

- 1) Section A contains 10 questions of 2 marks each
- 2) Section B contains 10 questions of 3 marks each

Section-A

- Q1) Find 2 rational numbers between  $\frac{2}{3}$  and  $\frac{3}{4}$  ✓
- Q2) Locate  $\sqrt{2}$  on the number line. ✓
- Q3) Express  $0.2\overline{35}$  in p/q form. ✓
- Q4) Write the following in decimal form and say what kind of decimal expansion each has
- a)  $\frac{3}{13}$  b)  $\frac{329}{400}$  ✓
- Q5) Rationalise the denominator:  $\frac{5}{\sqrt{3}-\sqrt{5}}$  ✓
- Q6) Simplify  $\frac{32 \times 625 \times 2^4}{2^8}$  ✓
- Q7)  $p(x) = 5x - x^2 + 3$  Find  $p(\frac{1}{2})$  ✓
- Q8) Divide  $x^3 + 1$  by  $x + 1$ . Find the quotient and remainder. ★
- Q9) Check if  $x+2$  is a factor of  $x^3 - 7x + 9$ . ✓
- Q10) Evaluate  $(999)^3$  using suitable identity. ★

Section B :

Q11) a) If  $x + y + z = 0$  then show  $x^3 + y^3 + z^3 = 3xyz$

b) Without actual cubing find  $(-28)^3 + (15)^3 + (13)^3$

Q12) Find possible length and breadth of a rectangle whose area is  $35y^2 + 13y - 12$ .

Q13) Give the geometric representation of  $2x + 11 = 0$  in a) one variable b) two variables.

Q14) Locate  $\sqrt{3}$  on the number line. Write steps of construction.

Q15) Represent  $\sqrt{8.5}$  on the number line. Write steps of construction.

Q16) Divide  $3x^4 - 4x^3 - 3x - 1$  by  $x - 1$ . Find the quotient and remainder.

Q17) Factorise a)  $x^3 - 23x^2 + 142x - 120$

b)  $2x^2 + y^2 + 8z^2 - 2\sqrt{2}xy + 4\sqrt{2}yz - 8xz$

Q18) In which quadrant do the following points lie (1,2) (2,-1) (3,0) (-2,-3).

Verify your answer by locating on the Cartesian plane.

Q19) The taxi fare in a city is as follows. For the first km the fare is Rs 25 and for every subsequent km it is Rs 10. Taking distance covered as  $x$  km and total fare as Rs  $y$ , Write equation and draw its graph.

Q20) Here is a linear equation to convert fahrenheit to celcius.

$$F = \frac{9}{5}C + 32$$

a) If the temperature is  $40^\circ\text{C}$ , then what will be the temperature in  $^\circ\text{F}$ .

b) If the temperature is  $76^\circ\text{F}$  then what will be the temperature in  $^\circ\text{C}$ .

c) Is there a temperature which is numerically equal in  $^\circ\text{C}$  and  $^\circ\text{F}$ .