T2-Practical Geometry

Model Question Paper IV

9th Standard

Maths

Reg.No. : | | | | | | |

I. Answer all the questions

Time : 01:15:00 Hrs

Total Marks : 40

Part-A

5 x 1 = 5

1) The degree of the polynomial $4x^2-7x^3+6x+1$

   (a) 2 (b) 1 (c) 3 (d) 0

2) The polynomial $4x^2+2x-2$ is a

   (a) linear polynomial (b) quadratic polynomial (c) cubic polynomial (d) constant polynomial

3) he root of the polynomial equation 3x - 1 = 0 is

   (a) $x=-\frac{1}{3}$ (b) $x=\frac{1}{3}$ (c) x=1 (d) x=3

4) One of the factors of $x^2-3x-10$ is

   (a) x - 2 (b) x +5 (c) x – 5 (d) x – 3

5) If (2x + 1) and (x - 3) are the factors of $ax^2 - 5x + c$, then the values of a and c are respectively

   (a) 2, 3 (b) -2, 3 (c) 2, -3 (d) 1, -3

Part-B

10 x 2 = 20

6) Classify the following polynomials based on their degree

   (i) p(x) = 3 (ii) p(y)=$\frac{5}{2}y^2+1$ (iii) p(x) = $2x^3- x^2+4x+1$ (iv) p(x) $3x^2$ (v) p(x) = x + 3

   (vi) p(x)= –7 (vii) p(x)=x^3+1 (viii) p(x)=$5x^2-3x+2$ (ix) p(x) = 4x (x) p(x) =$\frac{3}{2}$

   (xi) p(x) =$\sqrt{3}x+1$ (xii) p(y) = y^3+3y

7) Write the coefficient of x^2 and x in each of the following.

   $\sqrt{3}x+1$

8) Find the roots of the following polynomial equations x-6 = 0

9) Find the quotient and the remainder when $10x-4x+3x^2$ is divided by x - 2.

10) Determine the value of m if (x-1) is a factor of x^3+5x^2+mx+4.

11) Evaluate each of the following using suitable identities. $(105)^3$

12) If $y-\frac{1}{y}=9$, find the value of $y^3-\frac{1}{y^3}$.

13) From Dharmapuri bus stand if we buy 2 tickets to Palacode and 3 tickets to Karimangalam the total cost is Rs. 32, but if we buy 3 tickets to Palacode and one ticket to Karimangalam the total cost is Rs 27. Find the fares from Dharmapuri to Palacode and to Karimangalam.

14) Expand $(2x-3y)^3$

15) Factorize the following. $x^2-2x-15$

Part-C

5 x 3 = 15

16) State whether the following expressions are polynomials in one variable or not. Give reasons for your answer.

   x-$\frac{1}{x}$

17) Determine whether (x + 1) is a factor of the following polynomials.

   (i) $6x^4+7x^3-5x-4$

   (ii) $2x^4+9x^3+2x^2+10x+15$

   (iii) $3x^3+8x^2+6x-5$

   (iv) $x^3-14x^2+3x+12$

18) Find the quotient the and remainder of the following division.

   $\left(2x^2-3x-14\right)\div(x+2)$

19) If x-$\frac{1}{x}$=3, find the value of $x^3-\frac{1}{x^3}$.

20) Find the expansion of

   (x + 5)(x - 3)(x - 1)

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