

Model Question Paper

Algebra - Part II

10th Standard

Maths

Reg.No. :

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I. Answer all the questions.

II. Use Blue pen only.

Time : 01:15:00 Hrs

Total Marks : 60

5 x 1 = 5

Section-A

- 1) The remainder when $x^2 - 2x + 7$ is divided by $x + 4$ is
(a) 28 (b) 29 (c) 30 (d) 31
- 2) The quotient when $x^3 - 5x^2 + 7x - 4$ is divided by $x - 1$ is
(a) $x^2 + 4x + 3$ (b) $x^2 - 4x + 3$ (c) $x^2 - 4x - 3$ (d) $x^2 + 4x - 3$
- 3) The GCD of $(x^3 + 1)$ and $x^4 - 1$ is
(a) $x^3 - 1$ (b) $x^3 + 1$ (c) $x + 1$ (d) $x - 1$
- 4) The GCD of $x^2 - 2xy + y^2$ and $x^4 - y^4$ is
(a) 1 (b) $x + y$ (c) $x - y$ (d) $x^2 - y^2$
- 5) The LCM of $x^3 - a^3$ and $(x - a)^2$ is
(a) $(x^3 - a^3)(x + a)$ (b) $(x^3 - a^3)(x - a)^2$ (c) $(x - a)^2(x^2 + ax + a^2)$ (d) $(x + a)^2(x^2 + ax + a^2)$

Section-B

- 6) Simplify the rational expressions into lowest forms. $\frac{5x+20}{7x+28}$
- 7) Multiply $\frac{x^3y^2}{9z^4} \text{ by } \frac{27z^5}{x^1y^2}$
- 8) Simplify $\frac{x+2}{x+3} + \frac{x-1}{x-2}$
- 9) What rational expression should be added to $\frac{x^3-1}{x^2+2}$ to get $\frac{2x^3+x^2+3}{x^2+2}$?
- 10) Find the square root of $121(x - a)^4(x - b)^6(x - c)^{12}$
- 11) Solve $6x^2 - 5x - 25 = 0$
- 12) The sum of a number and its reciprocal is $5\frac{1}{5}$. Find the number.

7 x 2 = 14

Section-C

- 13) Find the GCD of the polynomials $x^4 + 3x^3 - x - 3$ and $x^3 + x^2 - 5x + 3$.
- 14) Find the GCD of the following polynomials $3x^4 + 6x^3 - 12x^2 - 24x$ and $4x^4 + 14x^3 + 8x^2 - 8x$.
- 15) Find the LCM of the following. $x^3 + y^3, x^3 - y^3, x^4 + x^2y^2 + y^4$
- 16) The GCD of $x^4 + 3x^3 + 5x^2 + 26x + 56$ and $x^4 + 2x^3 - 4x^2 - x + 28$ is $x^2 + 5x + 7$.
- 17) The GCD and LCM of two polynomials are $x + 1$ and $x^6 - 1$ respectively. If one of the polynomials is $x^3 + 1$, find the other.
- 18) Divide $\frac{x^3-1}{x^2-25} \text{ by } \frac{x^2-4x-5}{x^2+4x-5}$
- 19) Find the square root of (iii) $(6x^2 - x - 2) (3x^2 - 5x + 2) (2x^2 - x - 1)$
- 20) Find the square root of $x^4 - 10x^3 + 37x^2 - 60x + 36$.

8 x 5 = 40
