**Q.No.1 Encircle the correct option. Cutting, over writing and use of lead pencil is not allowed. 10**

**i.** The real roots of the the equation x2/3 + x1/3 – 2 = 0 are

**(a)** 1, 8 **(b)**  1, 8 **(c)** 1, 8 **(d)** 1,8

**ii.** The equation 7x2 – 6x + 1 = 0 has one root

**(a)** **(b)** **(c)** **(d)** None of these

**iii.** The number of real roots of 22x2 – 7x + 7 = 4

**(a)** 2 **(b)** 0 **(c)** 4 **(d)** 3

**iv.** The extraneous roots can be obtained from

**(a)** radical equations **(b)** biquadratic equations **(c)** cubic equations **(d)** None of these

**v.** The expression  is a polynomial, named as

**(a)** Cubic or binomial **(b)** Quadratic or tetranomial

**(c)** Cubic or trinomial **(d)** Quadratic or binomial

**vi.** Which of the following is the most suitable substitution to reduce the equation  into quadratic

equation?

**(a)**  **(b)**  **(c)**  **(d)** 

**vii.** 

**(a)**  **(b)** – 1 **(c)** 1 **(d)** 0

**viii.** One of the solutions of the equation  is,

**(a)**  **(b)**  **(c)**  **(d)** 

**ix.** The degree of the polynomial  is

**(a)** 4 **(b)** 5 **(c)** 6 **(d)** 8

**x.** If  is a factor of  then 

**(a)** –2 **(b)** 3 **(c)** –3 **(d)** 2

**Q. No. 02 Attempt any 15 short questions. 2 × 15 = 30**

**i.** State the Remainder theorem.

**ii.** Show that x + a is a factor of xn + an, where n is an even integer.

**iii.** Use Factor theorem to determine  + 2 is a factor of 23 + 2 – 4 + 7.

**iv.** Write properties of four fourth roots of Unity.

**v.** Show that product of three cube roots of unity is unity.

**vi.** Find three cube roots of – 27.

**vii.** Evaluate +

**viii.** Show that: x3 – y3 = (x – y)(x – y)(x – 2y).

**ix.** Prove that: −−−

**x.** Solve the equation 5x5 – 5x = 0.

**xi.** Solve:

**xii.** Solve: 2x + 2 – x + 6 – 20 = 0.

**xiii.** Solve by using factorization.

**xiv.** Find the roots of 15x2 + 2ax – a2 = 0.

**xv.** Write four types of radical equations.

**xvi.** Find the roots of equation (x2 + 6x – 27)(x2 – 2x – 35) = 385.

**Q. No. 03**

**(a)** Solve the equation: . **05**

**(b)** Find the values of a and b if – 2 and 2 are the roots of the polynomial x3 – 4x2 + ax + b. **05**

**Key 1.d 2.a 3.a 4.a 5.c 6.b 7.d 8.b 9.b 10.b**