**(EMC01-0016H)**

- The roots of equation $2^{2x} - 10.2^{x} + 16 = 0$ are

A) 1, 3
B) 1, 8
C) 2, 3
D) 2, 8

**(EMC01-0017M)**

- The solution set of $\sqrt{2x-6} + \sqrt{x+4} = 5$ is

A) {5}
B) {0, 5}
C) {1, 3}
D) {3, 5}

**(EMC01-0018E)**

- Remainder of $x^{64} + x^{27} + 1$ when divided by $x + 1$ is

A) 0
B) 1
C) 2
D) 3

**(EMC01-0019M)**

- $x^2 + x + 1 + 2k(x^2 - x - 1)$ is a perfect square for how many values of $k$ ?

A) 0
B) 1
C) 2
D) 3

**(EMC01-0020E)**

- Both the roots of the equation $x^2 - x - 3 = 0$ are

A) real and rational
B) real and irrational
C) real and equal
D) imaginary roots

**(EMC01-0021E)**

- The value of a for which the equation $2x^2 + 2\sqrt{6}\,x + a = 0$ has equal roots, is

A) $\sqrt{2}$
B) $\sqrt{3}$
C) 2
D) 3

**(EMC01-0022M)**

- If one root of equation $x^2 + ax + 12 = 0$ is 4 while the equation $x^2 + ax + b = 0$ has equal roots, then the value of b is

A) $\frac{4}{7}$
B) $\frac{7}{4}$
C) $\frac{4}{49}$
D) $\frac{49}{4}$

**(EMC01-0023H)**

- One root of $mx^2 - 14x + 8 = 0$ is 6 times the other root. Then *m* is equal to

A) 1
B) 2
C) 3
D) None of these

**(EMC01-0024M)**

- If $\alpha + \beta = 4$ and $\alpha^3 + \beta^3 = 44$, then $\alpha, \beta$ are the roots of the equation

  A) $2x^2 - 7x + 6 = 0$
  B) $3x^2 - 12x + 5 = 0$
  C) $4x^2 + 22x + 15 = 0$
  D) $9x^2 - 27x + 20 = 0$

**(EMC01-0025M)**

- If $\{\alpha, \beta\}$ is the solution set of $2x^2 - 3x + 5 = 0$, then the equation with solution set $\{\alpha^2 + 1, \beta^2 + 1\}$ is

  A) $4x^2 - 3x - 18 = 0$
  B) $4x^2 - 3x + 18 = 0$
  C) $4x^2 - 3x + 18 = 0$
  D) $4x^2 + 3x + 18 = 0$

**(EMC01-0026E)**

- $x = \frac{-b-\sqrt{b^2-4ac}}{-2a}$ is one of the root of:

  A) $ax^2 - bx + c = 0$
  B) $-ax^2 - bx - c = 0$
  C) $ax^2 - bx - c = 0$
  D) $-ax^2 + bx - c = 0$

**(EMC01-0027E)**

- x = 9 is a root of equation:

  A) (x – 7) (x + 3) (x + 1) (x + 5) – 1680 = 0
  B) (x – 7)(x – 3)(x + 1)(x + 5) – 1680 = 0
  C) (x + 7)(x + 3)(x + 1)(x + 5) – 1680 = 0
  D) (a) and (b)

**(EMC01-0028E)**

- An equation, which remains unchanged when x is replace by $\frac{1}{x}$ is:

A) Exponential equation
B) Reciprocal equation
C) Linear equation
D) (a) and (b)

**(EMC01-0029E)**

- Which one is not the imaginary cube root of unity?

A) 1
B) $\frac{-1+\sqrt{3}\,i}{2}$
C) $\frac{-1-\sqrt{3}\,i}{2}$
D) All of these

**(EMC01-0030M)**

- If $\frac{n}{3}$ is an integer, then $\omega^{n^3}+\omega^{3^n}$ =

A) 1
B) $\omega$
C) $\omega^2$
D) 2

| Answer key | |
|---|---|
| 1 | A |
| 2 | A |
| 3 | B |
| 4 | C |
| 5 | B |
| 6 | D |
| 7 | D |
| 8 | C |
| 9 | B |
| 10 | D |
| 11 | D |
| 12 | B |
| 13 | B |
| 14 | A |
| 15 | D |