TIME – 1 Hour   **Total Marks – 50**

Instructions:

- All questions are compulsory. Space is given for attempting each subjective question.
- No marks will be awarded in case of cutting / overwriting or use of lead pencil.
- Use of programmed calculator is not allowed, Normal scientific calculator is allowed.
- Write roll number in the above specified place only and don't write examination centre.

Question-1   Encircle the correct option. (1 x 5 = 5)

a. The number of methods to solve quadratic equation is/are _____

(i)   1   (ii)   2   (iii)   3   (iv)   4

b. In the ratio $a:b$ 'a' is called _____

(i)   Relation   (ii) antecedent   (iii)   consequent   (iv)   none of these

c. The observations that divide a data set into four equal parts are called

(i)   Deciles   (ii)   quartiles   (iii)   percentiles   (iv)   medians

d. A circle can pass through how many collinear points

(i)   One   (ii)   two   (iii)   three   (iv)   four

e. The degree measure of $\frac{2\pi}{3}$ is

(i)   90 degrees   (ii)   60 degrees   (iii)   120 degrees   (iv)   30 degree

Question-2   Fill in the blanks.   (1 x 5 = 5)

a. standard form of quadratic equation is _____

b. In ratio a:b 'b' is called _____

c. $Sec^2\theta - 1 = $ _____

d. The Area of a circle having diameter d is equal to _____.

e. The line intersecting a circle is called_____ of a circle.

Question3:Answer the question in the space provided.

a. Differentiate between Natural logarithm and ordinary logarithm.   (3 *Marks*)

b. Differentiate between median, right bisector and altitude?   (3 *Marks*)

c. Differentiate between Rational and Irrational numbers.   (2 *Marks*)

d. Differentiate among mean, median and mode   (3 *Marks*)

e. Differentiate between "Direct variation" and "Inverse variation"   (3 *Marks*)
   with one example each

Question-4:   Solve the question in the space provided.

   a. Solve $5^{1-x} + 5^{1+x} = 26$ (4 *Marks*)

   b. Find the nature of roots of equation $7x^2 + 8x + 16 = 0$ (3 *Marks*)

   c. If 2 is added in each number of the ratio $2 : 3$, we get a new ratio $3 : 4$. Find the numbers.
                                        (3 *Marks*)

d. If $A = \{1,2,3...,10\}$ $B = \{2,3,5,7\}$ Find $A' - B'$ (3 Marks)

e. What is the circular measure of the angle between the hands of the clock at 3 O'clock

(2 Marks)

f. Find the mod of 4, 5, 5, 3, 5, 2, 4, 2 (2 Marks)

g. Verify the identity $cos\theta = -\frac{2}{3}$ and terminal arm of the angle θ is in quadrant II; find the values of other trigonometric ratios. (4 Marks)

h. Using synthetic division solve the equation $3x^3 - 11x^2 + 5x + 3 = 0$ when 3 is one root of the equation. (5 Marks)