MATHEMATICS 2011

Time: 30 minutes   Max. Marks: 20

SECTION "A" (COMPULSORY)
(MULTIPLE CHOICE QUESTIONS)

Instruction: This paper of Mathematics (Class x–New Model) consists of two separate question papers, the first paper (Section "A") consists of M.C.Q's. This paper of 30 minutes duration will be given to you first of all and collected back as soon the time is over. Then you will be given the next paper of 2 ½ Hours consisting of short-Answer Questions (Section "B") and detailed-Answer Questions (Section "C")

General Instruction:

Section A: This section consists of 20 Multiple Choice Questions (M.C.Q's) and all are to be answered.

Section B: This section consists of 15 short answer questions out of which 10 are to be answered.

Section C: This section consists of 5 detailed answer questions out of which 3 questions are to be answered.

SECTION 'A' MULTIPLE CHOICE QUESTION (MCQ's)

1. **Choose the correct answer for each from the given options:** (20)

(i) In a right angled triangle, the side opposite to the right angle is -----------.
  - (a) Perpendicular
  - (b) Hypotenuse
  - (c) Diagonal
  - (d) Base ✓

(ii) If S.D. of a series is 4, its variance is -----------.
  - (a) 2   (b) 20   (c) 36   (d) 16 ✓

(iii) $1 + \tan 45° = \sec^2$ -----------.
  - (a) 30°   (b) 90°   (c) 60°   (d) 45° ✓

(iv) The mean proportion of 14 and 56 is -----------.
  - (a) 12   (b) 24   (c) 28 ✓   (d) 36

(v) If $x + 5 : x + 7 = 5 : 7$ then x = ---------
  - (a) 0 ✓   (b) 1   (c) −1   (d) 2

(vi) If $\sqrt{x-2} = -4$ then the solution set of x = ---------.
  - (a) ±4   (b) 18   (c) {φ}   (d) non of them ✓

(vii) {0, 1, 2, 3, ...} is the set of -----------.
  - (a) Prime number
  - (b) Even number
  - (c) Whole number ✓
  - (d) Odd number

(viii) If $\log_4 x = -3/2$, x = -----------.
  - (a) 1/8 ✓   (b) 8   (c) 1/6   (d) 1/9

(ix) $[-1 (-1)^5]2 = $ -----------.
  - (a) −1   (b) 1 ✓   (c) 0   (d) 2

(x) $x^4 + 64$ can be made a perfect square by adding -------.

  - (a) 4x2   (b) $8x^2$ (c) $2x^2$ (d) $16x^2$ ✓

(xi) Sin 60o = -----------.
  - (a) 1/2   (b) $\frac{\sqrt{3}}{2}$ ✓   (c) $\frac{1}{\sqrt{3}}$ (d) $\frac{1}{\sqrt{2}}$

(xii) If $A = \begin{bmatrix} 1 & 2 \\ 3 & P \end{bmatrix}$ is a singular matrix, find the value of P =
  - (a) 5   (b) 6 ✓   (c) 1   (d) −1

(xiii) The median of [0, 2, 4, 6, 8, 9] is -----------.
  - (a) 4   (b) 6   (c) 8   (d) 5 ✓

(xiv) The angle inscribed in a major arc is a/an ----------- angle.
  - (a) Acute angle ✓
  - (b) Right angle
  - (c) Obtuse angle
  - (d) Adjacent angle

(xv) $\frac{a}{\sqrt{a}} = $ -----------.   (a) a   (b) $\frac{1}{\sqrt{a}}$ (c) $\sqrt{a}$ ✓   (d) a^2

(xvi) The degree of polynomial $x^2 + xy^2 + y$ is -----------.
  - (a) 2   (b) 3 ✓   (c) 4   (d) 1

(xvii) The characteristics of 0.00234 is -----------.
  - (a) 2   (b) $\bar{2}$ (c) 3   (d) $\bar{3}$ ✓

(xviii) $(x − 6)(x − 4) = $ -----------.
  - (a) $x^2 + 10x − 24$
  - (b) $x^2 − 10x − 24$
  - (c) $x^2 + 10x + 24$
  - (d) $x^2 − 10x + 24$ ✓

(xix) The line touching at a point of a circle is called -----------.
  - (a) Diameter   (b) Chord   (c) Radius   (d) Tangent

(xx) If the sum of 10 observations is 125, its mean is -----------.
  - (a) 5   (b) 50   (c) 12.5 ✓   (d) 75