MATHEMATICS 2012

Time: 30 minutes **Max. Marks: 20**

SECTION 'A' MULTIPLE CHOICE QUESTION

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

(i) In a right angled triangle side opposite ti < 90° is called:
(A) Hypotenuse (B) Base
(C) Perpendicular (D) None of these

(ii) The range of 42, 55, 50, 53, 60, 35, 40 is:
(A) 50 (B) 27 (C) 40 (D) none of them

(iii) The point through which medians of triangle pass is called: (A) Orthocenter (B) Centroid
(C) Circumcenter (D) In centre

(iv) Solution Set of $\sqrt{2x+3}$ is:
(A) $\frac{1}{2}\sqrt{}$ (B) $-\frac{1}{2}$ (C) { } (D) -1

(v) If $\frac{a}{b}=\frac{c}{d}$, the $\frac{a+b}{b}=\frac{c+d}{d}$ is the property of :
(A) Componendo (B) Dividendo
(C) Alternando (D) Invertendo

(vi) Sin 30° = ----------
(A) Sin 60° (B) cos 60° (C) tan 30° (D) cot 30°

(vii) An angle inscribed in a semi circle is of:
(A) 180° (B) 360° (C) 0° (D) 90°

(viii) $(\sqrt{2}+1)(\sqrt{2}-1)$ (A) 2 (B) 0 (C) 1 (D) $\sqrt{2}$

(ix) If R = {(1 , 2), (2 , 3) (3 , 4) }, Domain R = ----------
(A) { 1 } (B) { 1 , 2 } (C) { 1, 2, 3 } (D) { 2 , 3 }

(x) If $\log_{10} 1000 = y$, the value of y will be:
(A) 10 (B) 3 (C) 5 (D) 0

(xi) Median of 1, 3, 8, 11, 15, 18, 19 is:
(A) 11 (B) 15 (C) 13 (D) None of these

(xii) A Δ B = ---------- (A) A U B (B) A ∩ B
(C) (A ∩ B) – (A U B) (D) (A U B) – (A ∩ B)

(xiii) Multiplicative inverse of a – b is:
(A) a + b (B) – a + b
(C) $\frac{1}{a-b}\sqrt{}$ (D) $\frac{1}{a+b}$

(xiv) $(A')'$ = (A) A (B) A' (C) Φ (D) U

(xv) 4 x 5° = (A) 4 (B) 5 (C) 0 (D) 20

(xvi) $\frac{\log a^{x^3 y}}{z^2}$ =
(A) $\log a^{x3} + \log a^{y} - \log a^{z2}$ (B) $3\log a^{x} + \log a^{y} - 2\log a^{z}$
(C) $3\log a^{x} - \log a^{y} + 2\log a^{z}$ (D) $\frac{3\log a^{x} - 2\log a^{z}}{\log a^{y}}$

(xvii) If a + b = 2 and a – b = 2 then the value of $a^2 + b^2$ is:
(A) – 1 (B) 2 (C) 4 (D) 3/2

(xviii) The H.C.F of $x^4 - y^4$ and $x^2 + b^2$ is:
(A) $x^4 - y^4$ (B) $\frac{x^2+y^2}{x^2-y^2}$
(C) $(x^2 + y^2)(x^2 - y^2)$ (D)

(xix) Scalar Matrix is:
(A) $\sqrt{\begin{bmatrix}3 & 0\\ 0 & 3\end{bmatrix}}$ (B) $\begin{bmatrix}1 & 0\\ 0 & 1\end{bmatrix}$
(C) $\begin{bmatrix}0 & 3\\ 3 & 3\end{bmatrix}$ (D) $\begin{bmatrix}0 & 1\\ 1 & 1\end{bmatrix}$

(xx) $\frac{\tan\varphi}{\sin\varphi}$ = (A) cos Φ (B) sec Φ (C) cot Φ (D) cosec Φ