Roll No 222367 (To be filled in by the candidate)

MATHEMATICS **(Academic Sessions 2009 – 2011 , 2010 – 2012 and 2011 – 2013)**

PAPER – I (Objective Type) 212-(INTER PART – I) Time Allowed : 30 Minutes

GROUP – I **PAPER CODE = 2193** Maximum Marks : 20

Note : Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle in front of that question with Marker or Pen ink. Cutting or filling two or more circles will result in zero mark in that question. Write the letter A, B, C or D in the column (write correct option) against each question also. If there is a contradiction in the bubble and hand written answer, bubble option will be considered correct.

1-1	If a, A , b are in A.P, then 2A = : (A) $\frac{a+b}{2}$ (B) a + b (C) a – b (D) $\frac{a-b}{2}$
2	The period of $\tan \frac{x}{7}$ is : (A) π (B) 7π (C) $\frac{\pi}{7}$ (D) $\pi + 7$
3	Solution of equation $\tan x = \frac{1}{\sqrt{3}}$ lie in : (A) I and II quadrant (B) I and III quadrant (C) II and IV quadrant (D) I and IV quadrant
4	Multiplicative inverse of - 3i is : (A) 3i (B) $\frac{1}{3}i$ (C) $-\frac{1}{3}i$ (D) – 3i
5	Partial fractions of $\frac{1}{(x+1)(x^2-1)}$ will be of the form : (A) $\frac{A}{x+1} + \frac{Bx+C}{x^2-1}$ (B) $\frac{A}{x+1} + \frac{B}{x-1} + \frac{C}{x+1}$ (C) $\frac{A}{x+1} + \frac{B}{(x+1)^2} + \frac{C}{x-1}$ (D) $\frac{A}{x-1} + \frac{Bx+C}{(x+1)^2}$
6	${}^nP_n$ = : (A) n! (B) (n + 1)! (C) 0 (D) n
7	If A and B are Disjoint Sets then $A \cap B$ = : (A) 0 (B) 1 (C) 2 (D) ϕ
8	$\tan 2\alpha$ = : (A) $\frac{2\tan\alpha}{1-\tan^2\alpha}$ (B) $\frac{2\tan\alpha}{1+\tan^2\alpha}$ (C) $\frac{\tan\alpha}{1-\tan^2\alpha}$ (D) $\frac{\tan\alpha}{1+\tan^2\alpha}$
9	The value of $\sin\left(\cos^{-1}\frac{\sqrt{3}}{2}\right)$ is : (A) $\frac{1}{\sqrt{2}}$ (B) $\frac{\sqrt{3}}{2}$ (C) 1 (D) $\frac{1}{2}$
10	In any triangle ABC with usual notation $\frac{a^2+b^2-c^2}{2ab}$ = : (A) $\cos\alpha$ (B) $\cos\beta$ (C) $\cos\gamma$ (D) $\sin\gamma$