MCQs – Ch # 14: F.Sc Part 1

TEXT BOOK OF ALGEBRA AND TRIGONOMETRY CLASS XI

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Choose the correct answer.

1. The solution of the equation $\sin x = \frac{1}{2}$ is

   (a) $\left\{\frac{\pi}{3}+2n\pi\right\}\cup\left\{\frac{2\pi}{3}+2n\pi\right\}, n\in Z$ (b) $\left\{\frac{\pi}{4}+2n\pi\right\}\cup\left\{\frac{5\pi}{4}+2n\pi\right\}, n\in Z$

   (c) $\left\{\frac{\pi}{6}+2n\pi\right\}\cup\left\{\frac{5\pi}{6}+2n\pi\right\}, n\in Z$ (d) none of these

2. The solution of the equation $3\tan^2 x = 1$ is

   (a) $\left\{\frac{\pi}{6}+n\pi\right\}\cup\left\{\frac{5\pi}{6}+n\pi\right\}, n\in Z$ (b) $\left\{\frac{\pi}{3}+2n\pi\right\}\cup\left\{\frac{2\pi}{3}+2n\pi\right\}, n\in Z$

   (c) $\left\{\frac{\pi}{4}+n\pi\right\}\cup\left\{\frac{5\pi}{4}+n\pi\right\}, n\in Z$ (b) none of these

3. The solution of the equation $4\cos^2 x - 3 = 0$ is

   (a) $\left\{\frac{\pi}{6}+2n\pi\right\}\cup\left\{\frac{7\pi}{6}+2n\pi\right\}, n\in Z$ (b) $\left\{\frac{\pi}{3}+n\pi\right\}\cup\left\{\frac{2\pi}{3}+n\pi\right\}, n\in Z$

   (c) $\left\{\frac{\pi}{6}+2n\pi\right\}\cup\left\{\frac{11\pi}{6}+2n\pi\right\}\cup\left\{\frac{5\pi}{6}+2n\pi\right\}\cup\left\{\frac{7\pi}{6}+2n\pi\right\}, n\in Z$ (d) none of these

4. The solution set of the equation $1+\cos x = 0$ is

   (a) $\left\{\frac{\pi}{2}+2n\pi\right\}\cup\left\{\frac{3\pi}{2}+2n\pi\right\}, n\in Z$ (b) $\{\pi+2n\pi\}, n\in Z$

   (c) $\left\{\frac{\pi}{4}+2n\pi\right\}\cup\left\{\frac{5\pi}{4}+2n\pi\right\}, n\in Z$ (d) none of these

5. The solution of the equation $\cos ec^2 x = \frac{4}{3}$ is

   (a) $\left\{\frac{\pi}{3}+2n\pi\right\}\cup\left\{\frac{2\pi}{3}+2n\pi\right\}\cup\left\{\frac{4\pi}{3}+2n\pi\right\}\cup\left\{\frac{5\pi}{3}+2n\pi\right\}, n\in Z$

   (b) $\left\{\frac{\pi}{3}+n\pi\right\}\cup\left\{\frac{2\pi}{3}+n\pi\right\}, n\in Z$ (c) $\left\{\frac{\pi}{4}+2n\pi\right\}\cup\left\{\frac{5\pi}{4}+2n\pi\right\}, n\in Z$ (c) none of these

6. The solution of the equation $\sec^2 x = \frac{4}{3}$ is

   (a) $\left\{\frac{\pi}{3}+2n\pi\right\}\cup\left\{\frac{2\pi}{3}+2n\pi\right\}\cup\left\{\frac{4\pi}{3}+2n\pi\right\}\cup\left\{\frac{5\pi}{3}+2n\pi\right\}, n\in Z$

   (b) $\left\{\frac{\pi}{6}+2n\pi\right\}\cup\left\{\frac{11\pi}{6}+2n\pi\right\}\cup\left\{\frac{5\pi}{6}+2n\pi\right\}\cup\left\{\frac{7\pi}{6}+2n\pi\right\}, n\in Z$

   (c) $\left\{\frac{\pi}{6}+n\pi\right\}\cup\left\{\frac{5\pi}{6}+n\pi\right\}, n\in Z$ (d) none of these

7. The solution of the equation $\cot^2 x = \frac{1}{3}$ is

(a) $\left\{\frac{\pi}{3}+2n\pi\right\}\cup\left\{\frac{2\pi}{3}+2n\pi\right\}, n\in Z$ (b) $\left\{\frac{\pi}{6}+n\pi\right\}\cup\left\{\frac{2\pi}{3}+n\pi\right\}, n\in Z$

(c) $\left\{\frac{\pi}{4}+n\pi\right\}\cup\left\{\frac{3\pi}{4}+n\pi\right\}, n\in Z$ (d) none of these

8. The solution of the $\cot x = \frac{1}{\sqrt{3}}$ in $[0,2\pi]$ is

(a) $\frac{\pi}{6},\frac{5\pi}{6}$ (b) $\frac{\pi}{3},\frac{4\pi}{3}$ (c) $\frac{\pi}{4},\frac{5\pi}{4}$ (d) $\frac{\pi}{2},\frac{3\pi}{2}$

9. The solution of the $\operatorname{cosec} x = 2$ in $[0,2\pi]$ is

(a) $\frac{\pi}{6},\frac{5\pi}{6}$ (b) $\frac{\pi}{3},\frac{4\pi}{3}$ (c) $\frac{\pi}{3},\frac{2\pi}{3}$ (d) $\frac{\pi}{4},\frac{3\pi}{4}$

10. The solution of the $\sec x = -2$ in $[0,2\pi]$ is

(a) $\frac{\pi}{6},\frac{5\pi}{6}$ (b) $\frac{\pi}{3},\frac{4\pi}{3}$ (c) $\frac{2\pi}{3},\frac{4\pi}{3}$ (d) $\frac{\pi}{3},\frac{2\pi}{3}$

11. The solution set of the $\cos x = \frac{1}{2}$ is

(a) $\left\{\frac{\pi}{3}+2n\pi\right\}\cup\left\{\frac{5\pi}{3}+2n\pi\right\}, n\in Z$ (b) $\left\{\frac{\pi}{6}+2n\pi\right\}\cup\left\{\frac{7\pi}{6}+2n\pi\right\}, n\in Z$

(c) $\left\{\frac{\pi}{3}+n\pi\right\}\cup\left\{\frac{5\pi}{3}+n\pi\right\}, n\in Z$ (d) none of these

12. In which quadrant is the solution of the equation $\sin x + 1 = 0$

(a) 1st and 2nd (b) 2nd and 3rd (c) 3rd and 4th (d) none of these

13. In which quadrant is the solution of the equation $\cot x = \frac{1}{\sqrt{3}}$

(a) 1st and 2nd (b) 1st and 3rd (c) 2nd and 4th (d) none of these

14. The solution of the equation $\sin x + \cos x = 0$ is

(a) $\left\{\frac{3\pi}{4}+n\pi\right\}, n\in Z$ (b) $\left\{\frac{5\pi}{6}+n\pi\right\}, n\in Z$ (c) $\left\{\frac{\pi}{2}+n\pi\right\}, n\in Z$ (d) $\left\{\frac{\pi}{3}+n\pi\right\}, n\in Z$

15. The equation containing at least one trigonometric function is called

(a) exponential equation (b) logarithmic equation

(c) trigonometric equation (d) Algebraic equation

16. If $\sin x = 0$ then $x =$

(a) $n\pi, n\in Z$ (b) $n\frac{\pi}{2}, n\in Z$ (c) 0 (d) none of these

17. The number of the solutions of the trigonometric functions is

(a) unique (b) finite (c) infinite (d) zero

18. The equation which contain e^x is called

(a) exponential equation (b) logarithmic equation

(c) trigonometric equation (d) Algebraic equation

19. $\sec x = \tan x$ is a

(a) exponential equation (b) logarithmic equation

(c) trigonometric equation (d) Algebraic equation

20. $\sqrt{x+1} = 5\sqrt{x^2+1}$ is
    (a) exponential equation (b) logarithmic equation
    (c) trigonometric equation (d) Algebraic equation
21. If x satisfies the equation $f(x) = 0$ then x is called the
    (a) order (b) solution (c) power (d) none of these
22. The graph of the trigonometric functions repeats because trigonometric functions are
    (a) simple (b) linear (c) periodic (d) none of these
23. In solving trigonometric equations, first find he solution over the interval whose length is equal to
    (a) unity (b) its period (c) length (d) none of these
24. If a trigonometric equation contains two trigonometric functions then in order to solve this equation we convert this equation to
    (a) a simple equation (b) linear equation
    (c) quadratic equation (d) an equation containing one function
25. A function $f(x)$ is said to be the periodic function if for all x in the domain of f, there exists a smallest positive number p such that $f(x+p) =$
    (a) $f(p)$ (b) $f(x)$ (c) $f(0)$ (d) none of these

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