

## Class-XII

## Sample Questions

1. If  $O(A) = 2 \times 3$ ,  $O(B) = 3 \times 2$ , and  $O(C) = 3 \times 3$ , which one of the following is not defined?

- (a)  $CB+A'$
- (b)  $BAC$
- (c)  $C(A+B)'$
- (d)  $C(A+B')$

2. If  $A$  and  $B$  are two matrices and  $(A+B)(A-B) = A^2 - B^2$ , then

- (a)  $AB = BA$
- (b)  $A^2 + B^2 = A^2 - B^2$
- (c)  $A'B' = AB$
- (d) All of these

3. If  $\cos^{-1}\left(\frac{1}{x}\right) = \theta$ , then  $\tan \theta =$

- (a)  $\frac{1}{\sqrt{x^2 - 1}}$
- (b)  $\sqrt{x^2 + 1}$
- (c)  $\sqrt{1 - x^2}$
- (d)  $\sqrt{x^2 - 1}$

4. The principal value of  $\sin^{-1}\left(-\frac{\sqrt{3}}{2}\right)$  is

- (a)  $-\frac{2\pi}{3}$

(b)  $\frac{-\pi}{3}$

(c)  $\frac{4\pi}{3}$

(d)  $\frac{5\pi}{3}$

5. If  $\tan^{-1} 2x + \tan^{-1} 3x = \frac{\pi}{4}$ , Then  $x =$

(a)  $-1$

(b)  $\frac{1}{6}$

(c)  $-1, \frac{1}{6}$

(d)  $\frac{1}{3}$

6.  $\tan^{-1} \frac{1}{2} + \tan^{-1} \frac{1}{3} =$

(a)  $0$

(b)  $\frac{\pi}{4}$

(c)  $\frac{\pi}{2}$

(d)  $\pi$

7. If the distance between the points  $(a,2)$  and  $(3,4)$  be 8, then  $a =$

(a)  $2+3\sqrt{15}$

(b)  $2 - 3\sqrt{15}$

(c)  $2 \pm 3\sqrt{15}$

(d)  $3 \pm 2\sqrt{15}$

8. Three vertices of a parallelogram taken in order are  $(-1, -6)$ ,  $(2, -5)$  and  $(7, 2)$ . The fourth vertex is

(a)  $(1, 4)$

(b)  $(4, 1)$

(c)  $(1, 1)$

(d)  $(4, 4)$

9. Perpendicular distance of the point  $(3, 4, 5)$  from the  $y$ -axis, is

(a)  $\sqrt{34}$

(b)  $\sqrt{41}$

(c) 4

(d) 5

10. The angle between the straight lines

$$\frac{x+1}{2} = \frac{y-2}{5} = \frac{z+3}{4} \text{ and } \frac{x-1}{1} = \frac{y+2}{2} = \frac{z-3}{-3} \text{ is.}$$

(a)  $45^\circ$

(b)  $30^\circ$

(c)  $60^\circ$

(d)  $90^\circ$



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