

# Trig Class 11 NCERT

## Multiple Choice Questions: Trigonometric Functions

### Introduction to Trigonometric Functions

1. What is  $\sin 45^\circ$ ?

- a)  $\frac{1}{\sqrt{2}}$
- b)  $\frac{\sqrt{3}}{2}$
- c)  $\frac{1}{2}$
- d)  $\sqrt{3}$

2. If  $\tan \theta = 1$ , what is the value of  $\theta$ ?

- a)  $30^\circ$
- b)  $45^\circ$
- c)  $60^\circ$
- d)  $90^\circ$

3. Which of the following is the correct value of  $\cos 60^\circ$ ?

- a)  $\frac{\sqrt{3}}{2}$
- b)  $\frac{1}{2}$
- c)  $\frac{\sqrt{2}}{2}$
- d)  $\sqrt{3}$

4. If  $\sin \theta = \frac{3}{5}$ , what is  $\cos \theta$  in the first quadrant?

- a)  $\frac{4}{5}$
- b)  $\frac{3}{4}$
- c)  $\frac{1}{5}$
- d)  $\frac{5}{4}$

5. The value of  $\tan 30^\circ$  is:

- a)  $\sqrt{3}$
- b)  $\frac{1}{\sqrt{3}}$
- c) 1
- d)  $\frac{1}{2}$

### Signs of Trigonometric Functions

6. In which quadrant is  $\cos \theta$  negative and  $\sin \theta$  positive?

- a) First
- b) Second
- c) Third
- d) Fourth

7. If  $\theta$  is in the third quadrant, what is the sign of  $\tan \theta$ ?

- a) Positive
- b) Negative
- c) Zero

- d) Undefined

8. Which of the following is true in the second quadrant?

- a)  $\sin \theta > 0$  and  $\cos \theta < 0$
- b)  $\sin \theta < 0$  and  $\cos \theta > 0$
- c)  $\sin \theta > 0$  and  $\tan \theta > 0$
- d)  $\cos \theta > 0$  and  $\tan \theta < 0$

9. In the fourth quadrant, which trigonometric function is positive?

- a) Sine
- b) Cosine
- c) Tangent
- d) Cosecant

10. The value of  $\sin(-\theta)$  is:

- a)  $\sin \theta$
- b)  $-\sin \theta$
- c)  $\cos \theta$
- d)  $-\cos \theta$

### Domain and Range of Trigonometric Functions

11. The range of  $\sin x$  is:

- a)  $[-2, 2]$
- b)  $[-1, 1]$
- c)  $(-\infty, \infty)$
- d)  $[0, 1]$

12. Which of the following is the domain of  $\tan x$ ?

- a) All real numbers
- b) All real numbers except  $n\pi$
- c) All real numbers except  $\frac{\pi}{2} + n\pi$
- d) All real numbers except  $2n\pi$

13. The range of  $\cos x$  is:

- a)  $[-1, 1]$
- b)  $[0, 1]$
- c)  $(-\infty, \infty)$
- d)  $[-2, 2]$

### Trigonometric Functions of Sum and Difference of Two Angles

14. Which of the following is the correct formula for  $\cos(a + b)$ ?

- a)  $\cos a \cos b - \sin a \sin b$
- b)  $\cos a \sin b + \sin a \cos b$
- c)  $\sin a \sin b - \cos a \cos b$
- d)  $\cos a \cos b + \sin a \sin b$

15. If  $\sin 45^\circ = \frac{\sqrt{2}}{2}$  and  $\cos 45^\circ = \frac{\sqrt{2}}{2}$ , find  $\sin(45^\circ + 45^\circ)$ .

- a) 1
- b)  $\frac{1}{\sqrt{2}}$
- c)  $\frac{\sqrt{2}}{2}$
- d)  $\sqrt{2}$

## Answer Key

1. a
2. b
3. b
4. a
5. b
6. b
7. a
8. a
9. b
10. b
11. b
12. c
13. a
14. a
15. a

## Answer Key

1. a
2. b
3. b
4. a
5. b
6. b
7. a
8. a
9. b
10. b
11. b
12. c
13. a
14. a
15. a