

Mathematics Assignment 3(1)

Class XI

Chapter 3– Trigonometric Functions

Multiple Choice Questions

1. If $y = \cos x$, then what is the maximum value of y ?

- a. 1
- b. -1
- c. π
- d. 2π

2. What is the period of the trigonometric function given by $f(x) = 2 \sin(5 x)$?

- a. $\pi / 5$
- b. $2 \pi / 5$
- c. 5π
- d. π

3. What is the amplitude of the function $f(x) = -3\cos(\pi x)$?

- a. 3
- b. -3
- c. π
- d. 2

4. Which of the following functions has the greatest period?

- a. $f(x) = 20 \sin(2x - \pi/2)$
- b. $f(x) = -\sin(\pi x)$
- c. $f(x) = 2 \sin(0.1 x)$
- d. $f(x) = -\sin(0.1 \pi x)$

5. What is the range of the function $f(x) = -4 \cos(2x - 3)$?

- a. $(0, 4)$
- b. $[0, 4]$
- c. $(-4, 4)$
- d. $[-4, 4]$

6. What is the phase shift of the function $f(x) = 7 \sin(2x - \pi / 3)$?

- a. $\pi / 3$
- b. $\pi / 6$
- c. $-\pi / 6$
- d. $-\pi / 3$

7. What is the range of the function $f(x) = -6 \cos(\pi x - \pi/2) + 2$?

- a. $[-6, 6]$
- b. $[-4, 8]$
- c. $[0, 8]$
- d. $[-6, 0]$

8. What is the amplitude of $f(x) = 4 \sin(x) \cos(x)$?

- a. 4
- b. 3
- c. 2
- d. 1

9. What is the period of $f(x) = 0.5 \sin(x) \cos(x)$?

- a. 0.5
- b. 2π
- c. $\pi / 2$
- d. π

10. What is the amplitude of $f(x) = \sin(x) + \cos(x)$?

- a. $\sqrt{2}$
- b. $\sqrt{2} / 2$
- c. $2\sqrt{2}$
- d. 2

11. Which of the following points is in the unit circle?

- a. $(-\sqrt{2}/2, -\sqrt{2}/2)$
- b. $(\sqrt{2}/3, -\sqrt{2}/3)$
- c. $(1/2, 1/2)$
- d. $(3/2, 2/3)$

12. A point is in Quadrant-III and on the Unit Circle. If its x-coordinate is $-4/5$, what is the y-coordinate of the point?

- a. $3/5$
- b. $-3/5$
- c. $-2/5$
- d. $5/3$

13. Find the point on the Unit Circle associated with the rotation $-9\pi/2$

- a. $(0, -1)$
- b. $(0, 1)$
- c. $(1, 0)$
- d. $(-1, 0)$

14. Find the point on the Unit Circle associated with the angle $5\pi/3$

- a. $(1/2, 1/2)$
- b. $(-\sqrt{3}/2, 1/2)$
- c. $(1/2, -\sqrt{3}/2)$
- d. $(-\sqrt{3}/2, -1/2)$

15. If point (a, b) is on the Unit Circle associated with the rotation t , which of the following is not correct?

- a. $\sin(t) = b$
- b. $\cos(t) = a$
- c. $\sin(-t) = -a$
- d. $\cos(-t) = -a$

16. If point (a, b) is on the Unit Circle associated with the rotation t and point (c, d) is also on the Unit circle associated with rotation $t + \pi$, then which of the following is correct?

- a. $c = -a$ and $d = -b$
- b. $c = -a$ and $d = b$
- c. $c = a$ and $d = b$
- d. $c = a$ and $d = -b$

17. If point (a, b) is on the Unit Circle associated with the rotation t , then the point on the Unit circle associated with rotation $t + \pi/2$, has the following coordinates

- a. (b, a)
- b. $(-b, a)$
- c. $(-b, -a)$
- d. $(-a, b)$

18. If $0 < t < \pi / 2$ and $\sin t = 0.35$, then $\cos(t + \pi) = ?$

- a. 0.94
- b. -0.94
- c. 0.81
- d. -0.81

19. If $\tan(t) = 13$, then $\cot(-t) = ?$

- a. 13
- b. $1 / 13$
- c. $-1 / 13$
- d. -13

20. $\cos(x) + \cos(\pi - x) = ?$

- a. $2 \cos(x)$
- b. $\cos(x) - \sin(x)$
- c. $\cos(x) + \sin(x)$
- d. 0

21. If $0 < t < \pi/2$ and $\sin t = 0.65$, what is $\sin(t + \pi) ?$

- a. -0.65
- b. 0.65
- c. 0.35
- d. 0.76

22. If $\cos(-t) = 0.34$, what is $\cos(t) ?$

- a. -0.34
- b. 0.66
- c. 0.34
- d. -0.66

23. If $\sin(-t) = 0.54$, what is $-\sin(t) ?$

- a. 0.54
- b. -0.54
- c. -0.46
- d. 0.46

24. Which of the following is not the same as $\tan(t)$?

- a. $-\tan(-t)$
- b. $\tan(t + 2\pi)$
- c. $\tan(t + \pi)$
- d. $\tan(t + \pi / 2)$

25. Which of the following is not correct?

- a. $\sin(x) = -\sin(-x)$
- b. $\sec(-t) = \sec(t)$
- c. $\sin(\pi + x) = \sin(x)$
- d. $\cos(\pi - x) = -\cos(x)$

26. If $\sin t = 0.6$ and $\cot t > 0$, then $\sin(2t) = ?$

- a. - 0.96
- b. 0.48
- c. 0.96
- d. - 0.48

27. If $\cos t = 0.8$, then $\cos(2t) = ?$

- a. 0.28
- b. 0.4
- c. 1.0
- d. 1.6

28. If $\tan x = 5$, then $\tan(2x) = ?$

- a. 10
- b. - 5 / 12
- c. 1 / 10
- d. 5 / 12

29. If $\cos t = 3/4$, and $\sin t < 0$, then $\sin(3t) = ?$

- a. $\sqrt{7} / 16$
- b. $-5\sqrt{7} / 16$
- c. $-3\sqrt{7} / 4$
- d. $5\sqrt{7} / 16$

30. If $\cos t = 1/3$ and $3\pi/2 < t < 2\pi$ in quadrant IV, then $\sin(4t) = ?$

- a. $8\sqrt{2} / 3$
- b. $-8\sqrt{2} / 3$
- c. $-56\sqrt{2} / 243$
- d. $56\sqrt{2} / 81$

31. If $\sin t = 1/5$ and $0 < t < \pi/2$, then $\cos(4t) = ?$

- a. 0.3464
- b. 0.8
- c. 0.6928
- d. - 0.6928

32. Find all angles θ such that $-2\pi < \theta < 2\pi$ and $\cos \theta = \sqrt{2} / 2$

- a. $\{-7\pi/4, -\pi/4, \pi/4, 7\pi/4\}$
- b. $\{-\pi/4, -3\pi/4, \pi/4, 3\pi/4\}$
- c. $\{-5\pi/4, \pi/4, 3\pi/4\}$
- d. $\{\pi/4, \pi/4, 3\pi/4\}$

Answers

1. a	2. b	3. a	4. c	5. d	6. b	7. b	8. c
9. c	10. a	11. a	12. b	13. d	14. c	15. d	16. a
17. b	18. b	19. c	20. d	21. a	22. c	23. a	24. d
25. c	26. c	27. a	28. b	29. b	30. d	31. c	32. a