

Unit 7 – Introduction to Trigonometry

Multiple Choice Questions

Q. 1 Multiple choice questions:

Four possible answers are given for the following questions. Tick (✓) the correct answer.

- The union of two non-collinear rays, which have common end point is called:
(a) An angle (b) a degree
(c) A minute (d) a radian
- The system of measurement in which the angle is measured in radians is called:
(a) CGS system
(b) Sexagesimal system
(c) MKS system
(d) Circular system
- $20^\circ = \dots\dots\dots$
(a) $360'$ (b) $630'$
(c) $1200'$ (d) $3600'$
- $\frac{3\pi}{4}$ Radians =
(a) 115° (b) 135°
(c) 150° (d) 30°
- If $\tan\theta = \sqrt{3}$, then θ is equal to:
(a) 90° (b) 45°
(c) 60° (d) 30°
- $\sec^2\theta =$
(a) $1 - \sin^2\theta$ (b) $1 + \tan^2\theta$
(c) $1 + \cos^2\theta$ (d) $1 - \tan^2\theta$
- $\frac{1}{1 + \sin\theta} + \frac{1}{1 - \sin\theta}$
(a) $2\sec^2\theta$ (b) $2\cos^2\theta$
(c) $\sec^2\theta$ (d) $\cos\theta$
- $\frac{1}{2} \operatorname{cosec}45^\circ$
(a) $\frac{1}{2\sqrt{2}}$ (b) $\frac{1}{\sqrt{2}}$
(c) $\sqrt{2}$ (d) $\frac{\sqrt{3}}{2}$
- $\sec\theta \cot\theta =$
(a) $\sin\theta$ (b) $\frac{1}{\cos\theta}$
(c) $\frac{1}{\sin\theta}$ (d) $\frac{\sin\theta}{\cos\theta}$
- $\operatorname{cosec}^2\theta - \cot^2\theta =$
(a) -1 (b) 1
(c) 0 (d) $\tan\theta$
- In degree measurement, 1° is equal to:
(a) $1'$ (b) $60'$
(c) $90'$ (d) $360'$
- In degree measurement, $1'$ is equal to:
(a) $1''$ (b) $60''$
(c) $90''$ (d) $360''$
- How many right angles are there in 360 degrees?
(a) Two (b) four
(c) Six (d) eight
- If 'r' is the radius of a circle, then its circumference is:
(a) $\frac{\pi}{2}r$ (b) πr
(c) $2\pi r$ (d) $4\pi r$
- The radian measure of an angle that form a complete circle is:
(a) $\frac{\pi}{2}$ (b) π
(c) 2π (d) 4π
- 2π radians =
(a) 0° (b) 90°

- (c) 180° (d) 360°
17. π radians =
 (a) 0° (b) 90°
 (c) 180° (d) 360°
18. $1^\circ =$
 (a) 180π radian (b) π radian
 (c) $\frac{\pi}{180}$ radian (d) $\frac{180}{\pi}$ radian
19. 1 radian =
 (a) $(180\pi)^\circ$ (b) $(180)^\circ$
 (c) $\left(\frac{\pi}{180}\right)^\circ$ (d) $\left(\frac{180}{\pi}\right)^\circ$
20. $\frac{\pi}{2}$ radians =
 (a) 30° (b) 45°
 (c) 60° (d) 90°
21. $\frac{\pi}{3}$ radians =
 (a) 30° (b) 45°
 (c) 60° (d) 90°
22. $\frac{\pi}{4}$ radians =
 (a) 30° (b) 45°
 (c) 60° (d) 90°
23. $\frac{\pi}{6}$ radians =
 (a) 30° (b) 45°
 (c) 60° (d) 90°
24. $\frac{3\pi}{2}$ radians =
 (a) 90° (b) 180°
 (c) 270° (d) 360°
25. $1^\circ =$
 (a) 0.0175 radians
 (b) 0.175 radians

- (c) 1.75 radians
 (d) 175 radians
26. A part of circumference of a circle is called:
 (a) radius (b) chord
 (c) sector (d) arc
27. Formula for arc length is:
 (a) $\ell = r\theta$ (b) $r = \ell\theta$
 (c) $\theta = \ell r$ (d) $\ell = \frac{r}{\theta}$
28. Area of a circular sector =
 (a) $r\theta$ (b) $r^2\theta$
 (c) $\frac{1}{2}r\theta$ (d) $\frac{1}{2}r^2\theta$
29. $\frac{1}{\sin\theta} =$
 (a) $\cos\theta$ (b) $\sec\theta$
 (c) $\operatorname{cosec}\theta$ (d) $\cot\theta$
30. $\frac{1}{\cos\theta} =$
 (a) $\sin\theta$ (b) $\sec\theta$
 (c) $\operatorname{cosec}\theta$ (d) $\cot\theta$
31. $\frac{1}{\tan\theta} =$
 (a) $\tan\theta$ (b) $\sec\theta$
 (c) $\operatorname{cosec}\theta$ (d) $\cot\theta$
32. $\sin 45^\circ =$
 (a) 1 (b) $\sqrt{2}$
 (c) $\frac{1}{\sqrt{2}}$ (d) 0
33. $\cos 45^\circ =$
 (a) 1 (b) $\sqrt{2}$
 (c) $\frac{1}{\sqrt{2}}$ (d) 0
34. $\tan 45^\circ =$
 (a) 1 (b) $\sqrt{2}$

- (c) $\frac{1}{\sqrt{2}}$ (d) 0
35. $\text{Cosec}45^\circ =$
 (a) 1 (b) $\sqrt{2}$
 (c) $\frac{1}{\sqrt{2}}$ (d) 0
36. $\text{Sec}45^\circ =$
 (a) 1 (b) $\sqrt{2}$
 (c) $\frac{1}{\sqrt{2}}$ (d) 0
37. $\text{Cot}45^\circ =$
 (a) 1 (b) $\sqrt{2}$
 (c) $\frac{1}{\sqrt{2}}$ (d) 0
38. $\text{Sin}30^\circ =$
 (a) $\frac{1}{2}$ (b) $\frac{\sqrt{3}}{2}$
 (c) 2 (d) $\frac{2}{\sqrt{3}}$
39. $\text{Cos}30^\circ =$
 (a) $\frac{1}{2}$ (b) $\frac{\sqrt{3}}{2}$
 (c) 2 (d) $\frac{2}{\sqrt{3}}$
40. $\text{tan}30^\circ =$
 (a) $\frac{1}{2}$ (b) $\frac{\sqrt{3}}{2}$
 (c) $\sqrt{3}$ (d) $\frac{1}{\sqrt{3}}$
41. $\text{Cot}30^\circ =$
 (a) $\frac{1}{2}$ (b) $\frac{\sqrt{3}}{2}$
 (c) $\sqrt{3}$ (d) $\frac{1}{\sqrt{3}}$
42. $\text{Sec}30^\circ =$
 (a) $\frac{1}{2}$ (b) $\frac{\sqrt{3}}{2}$
- (c) 2 (d) $\frac{2}{\sqrt{3}}$
43. $\text{Cosec}30^\circ =$
 (a) $\frac{1}{2}$ (b) $\frac{\sqrt{3}}{2}$
 (c) 2 (d) $\frac{2}{\sqrt{3}}$
44. $\text{Sin}60^\circ =$
 (a) $\frac{1}{2}$ (b) $\frac{\sqrt{3}}{2}$
 (c) 2 (d) $\frac{2}{\sqrt{3}}$
45. $\text{Cos}60^\circ =$
 (a) $\frac{1}{2}$ (b) $\frac{\sqrt{3}}{2}$
 (c) 2 (d) $\frac{2}{\sqrt{3}}$
46. $\text{tan}60^\circ =$
 (a) $\frac{1}{2}$ (b) $\frac{\sqrt{3}}{2}$
 (c) $\sqrt{3}$ (d) $\frac{1}{\sqrt{3}}$
47. $\text{Cot}60^\circ =$
 (a) $\frac{1}{2}$ (b) $\frac{\sqrt{3}}{2}$
 (c) $\sqrt{3}$ (d) $\frac{1}{\sqrt{3}}$
48. $\text{Sec}60^\circ =$
 (a) $\frac{1}{2}$ (b) $\frac{\sqrt{3}}{2}$
 (c) 2 (d) $\frac{2}{\sqrt{3}}$
49. $\text{Cosec}60^\circ =$
 (a) $\frac{1}{2}$ (b) $\frac{\sqrt{3}}{2}$
 (c) 2 (d) $\frac{2}{\sqrt{3}}$
50. In which quadrant only $\text{Sin}\theta$ and $\text{Cosec}\theta$ are positive?
 (a) I (b) II

- (c) III (d) IV
51. In which quadrant only $\text{Cos}\theta$ and $\text{Sec}\theta$ are positive?
 (a) I (b) II
 (c) III (d) IV
52. In which quadrant only $\tan\theta$ and $\text{Cot}\theta$ are positive?
 (a) I (b) II
 (c) III (d) IV
53. In which quadrant θ lie when $\text{Sin}\theta > 0, \tan\theta < 0$?
 (a) I (b) II
 (c) III (d) IV
54. In which quadrant θ lie when $\text{Cos}\theta < 0, \text{Sin}\theta < 0$?
 (a) I (b) II
 (c) III (d) IV
55. In which quadrant θ lie when $\text{Sec}\theta > 0, \text{Sin}\theta < 0$?
 (a) I (b) II
 (c) III (d) IV
56. In which quadrant θ lie when $\text{Cos}\theta < 0, \tan\theta < 0$?
 (a) I (b) II
 (c) III (d) IV
57. In which quadrant θ lie when $\text{Cosec}\theta > 0, \text{Cos}\theta > 0$?
 (a) I (b) II
 (c) III (d) IV
58. In which quadrant θ lie when $\text{Sin}\theta < 0, \text{Sec}\theta < 0$?
 (a) I (b) II
 (c) III (d) IV
59. $\text{Sin}^2\theta + \text{Cos}^2\theta =$
 (a) $\tan^2\theta$ (b) $\text{Cot}^2\theta$
 (c) 1 (d) 0
60. $1 + \tan^2\theta =$
 (a) $\text{Sin}^2\theta$ (b) $\text{Cos}^2\theta$
 (c) $\text{Cosec}^2\theta$ (d) $\text{Sec}^2\theta$
61. $1 + \text{Cot}^2\theta =$
 (a) $\text{Sin}^2\theta$ (b) $\text{Cos}^2\theta$
 (c) $\text{Cosec}^2\theta$ (d) $\text{Sec}^2\theta$
62. In which quadrant all trigonometric ratios are positive?
 (a) I (b) II
 (c) III (d) IV
63. Fundamental trigonometric ratios are:
 (a) 3 (b) 4
 (c) 5 (d) 6
64. Which one is a quadrant angle?
 (a) 30° (b) 45°
 (c) 60° (d) 90°
65. $\text{Sin}\theta \cdot \text{cosec}\theta =$
 (a) 1 (b) 0
 (c) $\text{Sin}\theta$ (d) $\text{Cos}\theta$
66. $\text{Cos}\theta \cdot \text{Sec}\theta =$
 (a) 1 (b) $\tan\theta$
 (c) 0 (d) $\text{Cot}\theta$
67. $\tan\theta \cot\theta =$
 (a) $\sin\theta$ (b) $\text{Sec}\theta$
 (c) 1 (d) 0
68. Angles between 180° and 270° are in which quadrant?
 (a) I (b) II
 (c) III (d) IV
69. Angles between 0° and 90° are in which quadrant?
 (a) I (b) II
 (c) III (d) IV
70. $\text{Sin}(-310^\circ) = \dots\dots$
 (a) $\text{Sin}310^\circ$ (b) $-\text{Sin}310^\circ$
 (c) $\text{Cos}310^\circ$ (d) $\tan310^\circ$
71. $\text{Sec}(-60^\circ) = \dots\dots$
 (a) $-\text{Sec}60^\circ$ (b) $\text{Sec}60^\circ$
 (c) $\text{Cos}60^\circ$ (d) $\text{Cot}60^\circ$

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|-----|---|-----|---|-----|---|-----|---|-----|---|
| 1. | a | 2. | d | 3. | c | 4. | b | 5. | c |
| 6. | b | 7. | a | 8. | b | 9. | c | 10. | b |
| 11. | b | 12. | b | 13. | b | 14. | c | 15. | c |
| 16. | d | 17. | c | 18. | c | 19. | d | 20. | d |
| 21. | c | 22. | b | 23. | a | 24. | c | 25. | a |
| 26. | d | 27. | a | 28. | d | 29. | c | 30. | b |
| 31. | d | 32. | c | 33. | c | 34. | a | 35. | b |
| 36. | b | 37. | a | 38. | a | 39. | b | 40. | d |
| 41. | c | 42. | d | 43. | c | 44. | b | 45. | a |
| 46. | c | 47. | d | 48. | c | 49. | d | 50. | b |
| 51. | d | 52. | c | 53. | b | 54. | c | 55. | d |
| 56. | b | 57. | a | 58. | c | 59. | c | 60. | d |
| 61. | c | 62. | a | 63. | d | 64. | d | 65. | a |
| 66. | a | 67. | c | 68. | c | 69. | a | 70. | b |
| 71. | b | | | | | | | | |