MULTIPLE CHOICE QUESTIONS

1. If $\sin(\theta + 36°) = \cos\theta$ where θ and $(\theta + 36°)$ are acute angles, then value of θ is

   (*a*) $36°$ (*b*) $54°$ (*c*) $27°$ (*d*) $90°$

2. If $3\cos\theta = 2\sin\theta$ then the value of $\dfrac{4\sin\theta - 3\cos\theta}{2\sin\theta + 6\cos\theta}$ is:

   (*a*) $\dfrac{1}{8}$ (*b*) $\dfrac{1}{3}$ (*c*) $\dfrac{1}{2}$ (*d*) $\dfrac{1}{4}$

3. In Fig. 8.39, ΔABC is right angled at B and $\tan A = \dfrac{4}{3}$. If $AC = 15$ cm the length of BC is:

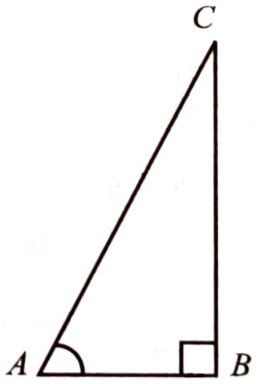

Fig. 8.39.

(*a*) 4 cm (*b*) 3 cm (*c*) 12 cm (*d*) 9 cm

4. If $\tan A = \cot B = \frac{15}{7}$ then $A + B$ is equal to:

(*a*) zero (*b*) $90°$ (*c*) $< 90°$ (*d*) $> 90°$

5. In Fig. 8.40, $AD = 3$ cm, $BD = 4$ cm ad $CB = 12$ cm then $\tan\theta$ equals:

(*a*) $\frac{3}{4}$

(*b*) $\frac{5}{12}$

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

(*d*) $\frac{12}{5}$

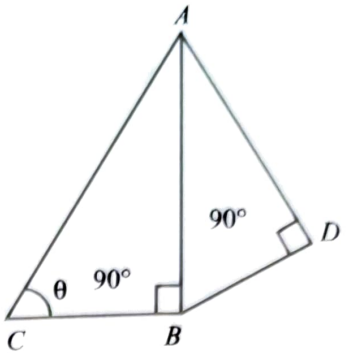

Fig. 8.40.

6. If $\sin\theta = \frac{1}{2}$, then the value of $\sin\theta\,(\sin\theta - \operatorname{cosec}\theta)$ is

(*a*) $\frac{3}{4}$ (*b*) $\frac{-3}{4}$ (*c*) $\frac{\sqrt{3}}{2}$ (*d*) $\frac{-\sqrt{3}}{2}$

7. The value of $\sin^2 30° + \cos^2 45° + \cos^2 30°$ is:

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

8. ΔABC is right angled at C, then value of $\cos(A + B)$ is

(*a*) 0 (*b*) Not defined (*c*) -1 (*d*) 1

9. If $\sin\phi = \frac{1}{3}$, then the value of $2\cot^2\phi + 2$ is euqal to:

(*a*) 6 (*b*) 9 (*c*) 4 (*d*) 18

10. Which of the following is not defined?

(*a*) $\sin 90°$ (*b*) $\tan 0°$ (*c*) $\cot 90°$ (*d*) $\operatorname{cosec} 0°$

11. $(\sec A + \tan A)(1 - \sin A)$ is equal to:

(*a*) $\sec A$ (*b*) $\tan A$ (*c*) $\sin A$ (*d*) $\cos A$

12. The value of $\frac{\cot 45°}{\sin 30° + \cos 60°}$ is equal to:

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

13. $\sin(60° + \theta) - \cos(30° - \theta)$ is equal to

(*a*) $2\cos\theta$ (*b*) $2\sin\theta$ (*c*) 0 (*d*) 1

14. If $\sin A + \sin^2 A = 1$, then the value of $\cos^2 A + \cos^4 A$ is

(*a*) 2 (*b*) 1 (*c*) -2 (*d*) 0

15. Given that $\tan\theta = \frac{1}{\sqrt{3}}$, the value of $\frac{\operatorname{cosec}^2\theta - \sec^2\theta}{\operatorname{cosec}^2\theta + \sec^2\theta}$

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

16. If $\sec x + \tan x = p$, then $\sec x$ is equal to:

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

17. $\frac{(1 + \tan^2 \theta)}{\cos^2 \theta} =$

(a) $\frac{1}{\sin^2 \theta - \cos^2 \theta}$ (b) $\sec^4 \theta$ (c) 1 (d) $\frac{1}{\sqrt{2}}$

18. In fig. 8.41, if D is mid-point of BC, the value of $\frac{\cot x^\circ}{\cot y^\circ}$ is

(a) 2

(b) $\frac{1}{4}$

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

(d) $\frac{1}{2}$

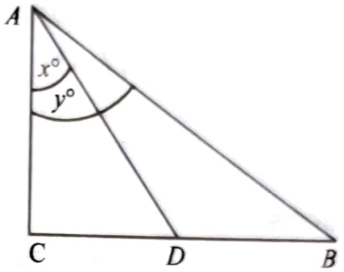

Fig. 8.41.

19. If $\sec\theta + \tan\theta = x$, then the value of $\sec\theta - \tan\theta$ in terms of x is:

(a) x^2 (b) $\frac{1}{x}$ (c) x^3 (d) $\frac{x}{2}$

20. Expressing $\sin A$ in terms of $\cot A$

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

21. If $\sin \theta - \cos \theta = 0$, then the value of $(\sin^4 \theta + \cos^4 \theta)$ is:

(a) 1 (b) $\frac{3}{4}$ (c) $\frac{1}{2}$ (d) $\frac{1}{4}$

22. If $\tan \theta + \cot \theta = 2$, ($\theta$ is acute) the value of $\tan^2 \theta + \cot^2 \theta$ is;

(a) 0 (b) 1 (c) 4 (d) 2

23. Given that $\sin \alpha = \frac{1}{2}$ and $\cos \beta = \frac{\sqrt{3}}{2}$, the the value of $\alpha + \beta$ is

(a) 30° (b) 45° (c) 60° (d) 90°

24. $\cos 1^\circ . \cos 2^\circ . \cos 3^\circ ..... \cos 180^\circ$ is equal to:

(a) 1 (b) 0 (c) – 1 (d) $\frac{1}{2}$

25. The value of the expression $\sec^2 50^\circ - \cot^2 40^\circ - \sin^2 45^\circ$ is equal to

(a) 2 (b) $\frac{1}{2}$ (c) 1 (d) 0

26. The values of $\sin^2 15 + \sin^2 25 + \sin^2 65 + \sin^2 75$ is

(a) 1 (b) 2 (c) 0 (d) 3

27. In the given Fig. 8.42, $\angle ACB = 90°$, $\angle BDC = 90°$, $CD = 4$ cm, $BD = 3$ cm, $AC = 12$ cm. $\cos A - \sin A$ is equal to

(a) $\frac{5}{12}$ (b) $\frac{5}{13}$

(c) $\frac{7}{12}$ (d) $\frac{7}{13}$

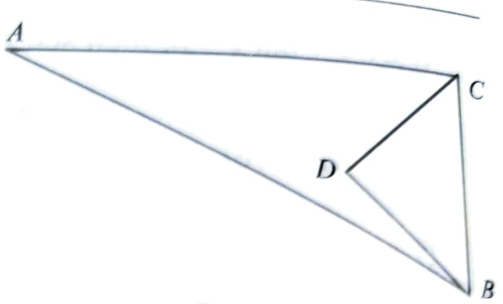

Fig. 8.42.

Answers:

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