MATHEMATICS

DPP

DAILY PRACTICE PROBLEMS

DPP No. 32

Total Marks : 22

Max. Time : 23 min.

Topic : Trigonometric Ratio & Identities

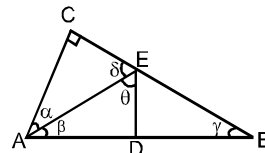| Type of Questions		M.M., Min.
Comprehension (no negative marking) Q.1 to Q.3	(3 marks, 3 min.)	[9, 9]
Single choice Objective (no negative marking) Q.4,5,6	(3 marks, 3 min.)	[9, 9]
Subjective Questions (no negative marking) Q.5	(4 marks, 5 min.)	[4, 5]

COMPREHENSION (Q.No. 1 to 3) :

In the figure below, it is given that $\angle C = 90°$, AD = DB, ED is perpendicular to AB, AB = 20 units and AC = 12 units.

1. Area of triangle AEC is

(A) 24 sq. units   (B) 21 sq. units   (C) 42 sq. units   (D) $\dfrac{21}{2}$ sq. units

2. The value of $\tan(\delta + \beta)$, is

(A) $-\dfrac{117}{44}$ (B) $\dfrac{17}{4}$ (C) $\dfrac{3}{4}$ (D) $\dfrac{5}{4}$

3. The value of $\cos(\alpha + \beta)$, is

(A) $\dfrac{4}{5}$ (B) $\dfrac{3}{5}$ (C) $\dfrac{117}{125}$ (D) $-\dfrac{44}{125}$

4. If $(1 + \tan 1°) . (1 + \tan 2°) . (1 + \tan 3°) ....(1 + \tan 45°) = 2^n$, then 'n' is equal to

(A) 16   (B) 23   (C) 30   (D) none of these

5. The most general solution of $\tan\theta = -1$ and $\cos\theta = \dfrac{1}{\sqrt{2}}$ is :

(A) $n\pi + \dfrac{7\pi}{4}$, $n \in I$ (B) $n\pi + (-1)^n \dfrac{7\pi}{4}$, $n \in I$ (C) $2n\pi + \dfrac{7\pi}{4}$, $n \in I$ (D) none of these

6. If $\cos^2 \dfrac{\pi}{8}$ is a root of the equation $x^2 + bx + c = 0$, where $b, c \in Q$, then the ordered pair (b, c) is:

(A) $\left(1, \dfrac{1}{8}\right)$ (B) $\left(-1, \dfrac{1}{8}\right)$ (C) $\left(1, -\dfrac{1}{8}\right)$ (D) $\left(-1, -\dfrac{1}{8}\right)$

7. Find the greatest & the least values of the expression $(x \in R)$ $\dfrac{1}{\sin^6 x + \cos^6 x}$.

Answers Key

1. (B) 2. (A) 3. (B) 4. (B) 5. (C) 6. (B)

7. max. = 4 , min. = 1