

ONE MARK TEST

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ENGLISH MEDIUM

LESSON – 6

TEST - 1

- 1 $a \cot \theta + b \operatorname{cosec} \theta = p$ and $b \cot \theta + a \operatorname{cosec} \theta = q$ then $p^2 - q^2$ is equal to
(A) $a^2 - b^2$ (B) $b^2 - a^2$ (C) $a^2 + b^2$ (D) $b - a$
- 2 If $(\sin \alpha + \operatorname{cosec} \alpha)^2 + (\cos \alpha + \sec \alpha)^2 = k + \tan^2 \alpha + \cot^2 \alpha$, then the value of k is equal to
(A) 9 (B) 7 (C) 5 (D) 3
- 3 The value of $\sin^2 \theta + \frac{1}{1 + \tan^2 \theta}$ is equal to
(A) $\tan^2 \theta$ (B) 1 (C) $\cot^2 \theta$ (D) 0
- 4 Two persons are standing ' x ' metres apart from each other and the height of the first person is double that of the other. If from the middle point of the line joining their feet an observer finds the angular elevations of their tops to be complementary, then the height of the shorter person (in metres) is
(A) $\sqrt{2} x$ (B) $\frac{x}{2\sqrt{2}}$ (C) $\frac{x}{\sqrt{2}}$ (D) $2x$
- 5 The angle of depression of the top and bottom of 20 m tall building from the top of a multistoried building are 30° and 60° respectively. The height of the multistoried building and the distance between two buildings (in metres) is
(A) 20, $10\sqrt{3}$ (B) 30, $5\sqrt{3}$ (C) 20, 10 (D) 30, $10\sqrt{3}$
- 6 If $5x = \sec \theta$ and $\frac{5}{x} = \tan \theta$, then $x^2 - \frac{1}{x^2}$ is equal to
(A) 25 (B) $\frac{1}{25}$ (C) 5 (D) 1

- 7 The electric pole subtends an angle of 30° at a point on the same level as its foot. At a second point ' b ' metres above the 1st, the depression of the foot of the pole is 60° . The height of the pole (in metres) is equal to
 (A) $\sqrt{3} b$ (B) $\frac{b}{3}$ (C) $\frac{b}{2}$ (D) $\frac{b}{\sqrt{3}}$
- 8 If $\sin \theta + \cos \theta = a$ and $\sec \theta + \operatorname{cosec} \theta = b$, then the value of $b(a^2 - 1)$ is equal to
 (A) $2a$ (B) $3a$ (C) 0 (D) $2ab$
- 9 $(1 + \tan \theta + \sec \theta)(1 + \cot \theta - \operatorname{cosec} \theta)$ is equal to
 (A) 0 (B) 1 (C) 2 (D) -1
- 10 $\tan \theta \operatorname{cosec}^2 \theta - \tan \theta$ is equal to
 (A) $\sec \theta$ (B) $\cot^2 \theta$ (C) $\sin \theta$ (D) $\cot \theta$