

ONE MARK TEST

P. ELANGOVAN, B.T. Assistant (Mathematics)

GOVERNMENT HIGHER SECONDARY SCHOOL

KOLIYANUR – VILLUPURAM DISTRICT



ENGLISH MEDIUM

LESSON – 6

TEST - 2

- 1 If $\sin \theta = \cos \theta$, then $2 \tan^2 \theta + \sin^2 \theta - 1$ is equal to
(A) $-\frac{3}{2}$ (B) $\frac{3}{2}$ (C) $\frac{2}{3}$ (D) $-\frac{2}{3}$
- 2 A tower is 60 m high. Its shadow is x metres shorter when the sun's altitude is 45° than when it has been 30° , then x is equal to
(A) 41.92 m (B) 43.92 m (C) 43 m (D) 45.6 m
- 3 The angle of elevation of a cloud from a point h metres above a lake is β . The angle of depression of its reflection in the lake is 45° . The height of location of the cloud from the lake is
(A) $\frac{h(1 + \tan \beta)}{1 - \tan \beta}$ (B) $\frac{h(1 - \tan \beta)}{1 + \tan \beta}$ (C) $h \tan(45^\circ - \beta)$ (D) none of these
- 4 If the ratio of the height of a tower and the length of its shadow is $\sqrt{3} : 1$, then the angle of elevation of the sun has measure
(A) 45° (B) 30° (C) 90° (D) 60°
- 5 If $x = a \tan \theta$ and $y = b \sec \theta$ then
(A) $\frac{y^2}{b^2} - \frac{x^2}{a^2} = 1$ (B) $\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$ (C) $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$ (D) $\frac{x^2}{a^2} - \frac{y^2}{b^2} = 0$
- 6 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, $10\sqrt{3}$

- 7 $a \cot \theta + b \operatorname{cosec} \theta = p$ 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) $b - a$
- 8 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
- 9 $\tan \theta \operatorname{cosec}^2 \theta - \tan \theta$ is equal to
(A) $\sec \theta$ (B) $\cot^2 \theta$ (C) $\sin \theta$ (D) $\cot \theta$
- 10 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) $2ab$