

Test Code: AD-X-01-17

INSTRUCTIONS

1. This paper has **15** questions.
2. All questions are compulsory.
3. Each question has four options, out of which **ONLY ONE** is correct.
4. Each question carries 4 marks.
5. The paper carries negative marking. 1 marks will be deducted for each wrong answer.

Maximum Time: 30 Minutes

Total Marks: 60

Name: _____

Roll Number: _____

- Q1. If $\sin x = \frac{4}{5}$, $\sec x =$
- A) $\frac{5}{4}$ B) 5 C) $\frac{3}{5}$ D) $\frac{5}{3}$
- Q2. For an angle A, which does not exceed 90° , comment on the statements below:
Assertion: $\tan A$ will never be greater than 1.
Reason: Both $\sin A$ and $\cos A$ will never be greater than 1.
- A) Assertion is correct and the Reason is the correct explanation
B) Both Assertion and Reason are correct but the Reason is not the correct explanation
C) Assertion is correct but Reason is wrong
D) Assertion is wrong but Reason is correct
- Q3. In triangle ABC, right-angled at B, if $\tan A = \sqrt{3}$, find the value of $\sin A \cos C + \cos A \sin C$
- A) $\frac{\sqrt{3}}{2}$ B) $\frac{1}{2}$ C) 1 D) $2\sqrt{3}$
- Q4. In ΔPQR , right angled at Q, $QR = 8 \text{ cm}$ and the perimeter of the triangle is 24 cm . Determine the value of $\sin P$.
- A) $\frac{3}{5}$ B) $\frac{4}{5}$ C) $\frac{3}{4}$ D) None of these
- Q5. $\sec 68^\circ$ is equivalent to
- A) $\sec 32^\circ$ B) $\cos \text{ec } 32^\circ$ C) $\sec 22^\circ$ D) $\cos \text{ec } 22^\circ$
- Q6. Which of the following values are not defined?
- I. $\cot 0^\circ$
II. $\tan 90^\circ$
III. $\text{co sec } 90^\circ$
IV. $\sec 0^\circ$
V. $\sec 90^\circ$
- A) All of these B) I, II and V
C) I, II, III and IV D) II and V

- Q7. $\frac{2 \tan 30^\circ}{1 + \tan^2 30^\circ} =$
 A) $\sin 30^\circ$ B) $\cos 30^\circ$ C) $\tan 30^\circ$ D) $\cot 30^\circ$
- Q8. Which of the following identities is false?
 A) $\sec^2 \theta - 1 = \tan^2 \theta$ B) $\cos^2 \theta = 1 - \sin^2 \theta$
 C) $\sec \theta + \tan \theta = \frac{1}{\sec \theta - \tan \theta}$ D) $\operatorname{cosec}^2 \theta + 1 = \cot^2 \theta$
- Q9. $\tan 1^\circ \tan 2^\circ \tan 3^\circ \dots \tan 89^\circ =$
 A) Undefined B) 89
 C) 0 D) None of these
- Q10. If the angle of elevation of a bird sitting on top of a tree as seen from a point at a distance of 10 m from the base of the tree is 60° , then the height of the tree is:
 A) $\frac{10}{\sqrt{3}} m$ B) $10\sqrt{3} m$ C) 10 m D) 30 m
- Q11. The angles of elevation from two points at distances m and n in a horizontal line through the base of the tower, of the top of the tower are complementary to each other. Then, the height of the tower is
 A) $m + n$ B) mn C) \sqrt{mn} D) $2mn$
- Q12. The angle of elevation of the top of a flag post from a point on a horizontal ground is found to be 30° . On walking 6 m towards the post, the angle of elevation will
 A) Increase B) Decrease
 C) Remain constant D) Cannot be determined
- Q13. If $B = 15^\circ$, then value of $4 \sin 2B \cdot \cos 4B \cdot \sin 6B$ equals
 A) 2 B) 4 C) 1 D) 1/2
- Q14. Which out of the following identities is false?
 A) $\tan^2 \theta - \frac{1}{\cos^2 \theta} = -1$ B) $\cos^2 \theta + \frac{1}{1 + \cot^2 \theta} = 1$
 C) $\cot^2 \theta - \frac{1}{\sin^2 \theta} = 1$ D) $\frac{1}{1 + \sin \theta} + \frac{1}{1 - \sin \theta} = 2 \sec^2 \theta$
- Q15. If $\tan x = \sin 45^\circ \cos 45^\circ + \sin 30^\circ$, then $x =$
 A) 30° B) 45° C) 60° D) None of these