

ECAT Pre Engineering Entry Test

Sr	Questions	Answers Choice
1	A circle drawn inside a triangle and touching its sides is called _____;	A. Circumcircle B. Incircle C. Escribed circle D. unit circle
2	A circle passing through the vertices of any triangle is called	A. Circumcircle B. Incircle C. Escribed circle D. Unit circle
3	If you are looking someone on the ground from the top of a hill the angle formed is called angle of _____;	A. Elevation B. Depression C. Right angle D. None off these
4	If you are looking a bird in the tree from the ground then the angle formed is called angle of _____;	A. Elevation B. Depression C. Right angle D. None of these
5	In ΔABC if $\gamma = 90^\circ$ then the Pythagoras theorem is	A. $b^2 + c^2 = a^2$ B. $a^2 + b^2 = c^2$ C. $a^2 + c^2 = b^2$ D. None of these
6	If ΔABC is right triangle then the law of Cosines reduces to	A. The Pythagoras Theorem B. The law of Sines C. The law of cosines D. The law of tangents
7	With usual notations $b^2 = a^2 + c^2 - 2ac \cos \gamma$ is called _____;	A. None of these B. Law of sines C. Law of cosines D. Law of tangents
8	In a triangle if $\alpha > 45^\circ, \beta > 30^\circ$ then γ cannot be	A. 90° B. 100° C. 10° D. 120°
9	A triangle has _____ elements	A. 3 B. 4 C. 5 D. 6
10	A triangle which is not right angle is called _____ triangle	A. acute B. Obtuse C. Right D. Oblique
11	graph of trigonometric function $y = \sec x$ does not meet	A. x - axis B. y - axis C. both axis D. None of these
12	graph of sine function is bounded between lines	A. $y \pm 1 = 0$ B. $x \pm 1 = 0$ C. $x \pm y = 0$ D. None of these
13	Range of $y = \sec x$ is	A. $-1 \leq y \leq 1$ B. $y \geq 1$ or $y \leq -1$ C. $y \leq 1$ or $y \geq -1$ D. $-\infty < y < \infty$
14	Range if $y = \cos x$ is	A. $-1 \leq y \leq 1$ B. $-1 < y < 1$ C. $-\infty < x < \infty$ D. None of these
15	$\sin^2 \pi/6 + \sin^2 \pi/3 + \tan^2 \pi/4 =$ _____;	A. 1 B. 2 C. 3 D. 4

16	$\tan 294^\circ = \underline{\hspace{1cm}};$	A. $\tan 24^\circ$ B. $-\tan 24^\circ$ C. $\cot 24^\circ$ D. $-\cot 24^\circ$
17	$\cos 6\theta + \cos 2\theta = \underline{\hspace{1cm}};$	A. $-2\sin 4\theta \sin 2\theta$ B. $2\cos 4\theta \cos 2\theta$ C. $2\sin 4\theta \cos 2\theta$ D. $2\cos 4\theta \sin 2\theta$
18	$\sin 5\theta + \sin 3\theta = \underline{\hspace{1cm}};$	A. $2\sin 4\theta \cos \theta$ B. $2\cos 4\theta \sin \theta$ C. $2\cos 4\theta \cos \theta$ D. $-2\sin 4\theta \sin \theta$
19	$\cos(a + \beta) - \cos(a - \beta) = \underline{\hspace{1cm}};$	A. $2\cos a \cos \beta$ B. $2\sin a \cos \beta$ C. $-2\sin a \cos \beta$ D. $-2\sin a \sin \beta$
20	$\sin(a + \beta) + \sin(a - \beta) = \underline{\hspace{1cm}};$	A. $2\cos a \cos \beta$ B. $2\sin a \cos \beta$ C. $2\cos a \sin \beta$ D. $-2\sin a \sin \beta$
21	$\cos 3a = \underline{\hspace{1cm}};$	A. $3\sin a - 4\sin^3 a$ B. $4\sin a - 3\sin^3 a$ C. $3\cos^3 a - 4\cos a$ D. $4\cos^3 a - 3\cos a$
22	$\sin 3a = \underline{\hspace{1cm}};$	A. $3\sin a - 4\sin^3 a$ B. $4\sin a - 3\sin^3 a$ C. $3\cos^3 a - \cos a$ D. $4\cos^3 a - 3\cos a$
23	$2\cos^2 a/2 = \underline{\hspace{1cm}};$	A. $1 + \sin a$ B. $1 - \sin a$ C. $1 + \cos a$ D. $1 - \cos a$
24	$\cos 2a = \underline{\hspace{1cm}};$	A. $\cos^2 a - \sin^2 a$ B. $2\cos^2 a - 1$ C. $1 - 2\sin^2 a$ D. All of these
25	$\sin(a - 90^\circ) = \underline{\hspace{1cm}};$	A. $\sin a$ B. $\cos a$ C. $-\sin \theta$ D. $-\cos a$
26	$\tan(3\pi/2 + \theta) = \underline{\hspace{1cm}};$	A. $\tan \theta$ B. $\cot \theta$ C. $-\tan \theta$ D. $-\cot \theta$
27	$\cot(3\pi/2 - \theta) = \underline{\hspace{1cm}};$	A. $\tan \theta$ B. $\cot \theta$ C. $-\tan \theta$ D. $-\cot \theta$
28	$\cos(3\pi/2 + \theta) = \underline{\hspace{1cm}};$	A. $\sin \theta$ B. $\cos \theta$ C. $-\sin \theta$ D. $-\cos \theta$
29	$\sin(3\pi/2 - \theta) = \underline{\hspace{1cm}};$	A. $\sin \theta$ B. $\cos \theta$ C. $-\sin \theta$ D. $-\cos \theta$
30	$\tan(\pi - \theta) = \underline{\hspace{1cm}};$	A. $\tan \theta$ B. $\cot \theta$ C. $-\tan \theta$ D. $-\cot \theta$