Maths By AG Sir

DPP-4

Q.1 The sign of the product sin 2 sin 3 sin 5 is -

(A) Negative (B) Positive

(C) 0 (D) None of these

Q.2 In a triangle ABC, angle A is greater than angle B. If the measures of angles A and B satisfy the equation $3 \sin x - 4 \sin^3 x - k = 0$, $0 < k < 1$, then the measure of angle C is -

(A) $\frac{\pi}{3}$ (B) $\frac{\pi}{2}$

(C) $\frac{2\pi}{3}$ (D) $\frac{5\pi}{6}$

Q.3 If $A = \cos^2\theta + \sin^4\theta$, then for all values of θ

(A) $1 \le A \le 2$ (B) $13/16 \le A \le 1$

(C) $3/4 \le A \le 13/16$ (D) $3/4 \le A \le 1$

Q.4 Least value of the expression

$9\sec^2\theta + 4\operatorname{cosec}^2\theta$, is-

(A) 6 (B) 1 (C) 36 (D) 25

Q.5 The maximum value of

$\sin(\theta + \pi/6) + \cos(\theta + \pi/6)$ is attained at

(A) $\frac{\pi}{12}$ (B) $\frac{\pi}{6}$ (C) $\frac{\pi}{3}$ (D) $\frac{\pi}{2}$

Q.6 The maximum value of $12 \sin\theta - 9 \sin^2\theta$ is

(A) 3 (B) 4

(C) 5 (D) None of these

Q.7 Minimum value of $5 \sin^2\theta + 4 \cos^2\theta$ is

(A) 1 (B) 2 (C) 3 (D) 4

Q.8 If $\sin\theta + \operatorname{cosec}\theta = 2$ then the value of $\sin^8\theta + \operatorname{cosec}^8\theta$ is equal to-

(A) 2 (B) 2^8

(C) 2^4 (D) None of these

Q.9 Minimum value of $5 \sin^2\theta + 4 \cos^2\theta$ is

(A) 1 (B) 2 (C) 3 (D) 4

Q.10 $\tan 10^\circ \tan 50^\circ \tan 70^\circ$ is equal to :

(A) $\sqrt{3}$ (B) $\frac{1}{2}$

(C) 3 (D) $\frac{1}{\sqrt{3}}$

Q.11 If $3\pi/4 < \alpha < \pi$, then

$\sqrt{2\cot\alpha + \frac{1}{\sin^2\alpha}}$ is equal to

(A) $1 + \cot\alpha$ (B) $-1 - \cot\alpha$

(C) $1 - \cot\alpha$ (D) $-1 + \cot\alpha$

Q.12 If in the following inequations angles are in radians, then which of the following is true.

(A) $\sin 1 < \sin 2 < \sin 3$

(B) sin 1 > sin 2 > sin 3

(C) sin 2 > sin 1 > sin 3

(D) sin 2 < sin 1 < sin 3

Q.13 Minimum value of f (x) = 256 $\sin^2 x$ + 324 $\text{cosec}^2 x$, $\forall\ x \in R$ is

(A) 576 (B) 580 (C) 584

(D) None

Q.14 The value of $\sum_{r=0}^{9} \sin^2 \frac{\pi r}{10}$ is equal to-

(A) $\frac{9}{2}$ (B) $\frac{7}{2}$

(C) 5 (D) None of these

Q.15 The ratio of the maximum value to minimum value of 2 cos 2θ + cos θ + 1 is -

(A) 32 : 7 (B) 32 : 9 (C) 4 : 1 (D) 2 : 1

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Answer Key

Qus.	1	2	3	4	5	6	7	8	9	10	11	12	13
Ans.	A	C	D	D	A	B	D	A	D	D	B	C	B
Qus.	14	15											
Ans.	C	A											

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