Chapter - 8

Introduction to Trigonometry

(Assertion and Reasoning Questions)

In the following questions, a statement of assertion (A) is followed by a statement of reason (R). Mark the correct choice as:

(a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

(b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

(C) Assertion (A) is true but reason (R) is false.

(d) Assertion (A) is false but reason (R) is true.

Q.1. Assertion (A) : The value of $\sin 60^0 \cos 30^0 + \sin 30^0 \cos 60^0$ is 1
Reason (R) : $\sin 90^0 = 1$ and $\cos 90^0 = 0$

Q.2. Assertion (A) : The value of $2\tan^2 45^0 + \cos^2 30^0 - \sin^2 60^0$ is 2.
Reason (R) : value of $\tan 45^0 = 1$, $\cos 30^0 = \sqrt{3}/2$ and $\sin 60^0 = \sqrt{3}/2$.

Q.3. Assertion (A) : If $x = 2\sin^2\theta$ and $y = 2\cos^2\theta + 1$ then the value of $x + y = 3$.
Reason (R) : For any value of θ, $\sin^2\theta + \cos^2\theta = 1$

Q.4. Assertion (A) : sinA is the product of sin A.
Reason (R) : The value of $\sin\theta$ increases as θ increases.

Q.5. Assertion (A) : In a right ΔABC, right angled at B, if $\tan A = 1$, then $2\sin A.\cos A = 1$
Reason (R) : cosecA is the abbreviation used for cosecant of angle A.

Q.6. Assertion (A) : In a right ΔABC, right angled at B, if $\tan A = 12/5$, then $\sec A = 13/5$.
Reason (R) : cotA is the product of cot and A.

Q.7. Assertion (A) : If $x\sin^3\theta+y\cos^3\theta = \sin\theta\cos\theta$ and $x\sin\theta = y\cos\theta$, then $x^2+y^2=1$.
Reason (R) : For any value of θ, $\sin^2\theta+\cos^2\theta=1$

Q.8. Assertion (A) : $(\cos^4A-\sin^4A)$ is equal to $2\cos^2A-1$.
Reason (R) : The value of cosθ decreases as θ increases.

Q.9. Assertion (A) : If $\cos A+\cos^2A=1$ then $\sin^2A+\sin^4A=1$.
Reason (R) : $\sin^2A+\cos^2A=1$, for any value of A.

Q.10. Assertion (A) : $\sin(A+B)=\sin A + \sin B$
Reason (R) : For any value of θ, $1+\tan^2\theta = \sec^2\theta$

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ANSWER KEY

Q.1 : (b)	**Q.2** : (a)	**Q.3** : (a)	**Q.4** : (d)
Q.5 : (b)	**Q.6** : (c)	**Q.7** : (a)	**Q.8** : (b)
Q.9 : (a)	**Q.10** : (d)		