

### Objective Type Questions

**Q.1** Each questions has four possible answers. Choose the correct answer and encircle it.

\_\_1.  $\sin(\alpha + \beta)$  is equal to:

- (a)  $\sin \alpha \cos \beta + \cos \alpha \sin \beta$
- (b)  $\cos \alpha \cos \beta - \sin \alpha \sin \beta$
- (c)  $\sin \alpha \cos \beta - \cos \alpha \sin \beta$
- (d)  $\cos \alpha \cos \beta + \sin \alpha \sin \beta$

\_\_2.  $\cos(\alpha - \beta)$  is equal to:

- (a)  $\cos \alpha \cos \beta - \sin \alpha \sin \beta$
- (b)  $\cos \alpha \cos \beta + \sin \alpha \sin \beta$
- (c)  $\cos \alpha \sin \beta - \sin \alpha \cos \beta$
- (d)  $\sin \alpha \cos \beta + \cos \alpha \sin \beta$

\_\_3.  $\tan(45^\circ - x)$  is equal to:

- |   |   |
|---|---|
| (a) $\frac{\cos x + \sin x}{\cos x - \sin x}$ | (b) $\frac{1 + \tan x}{1 - \tan x}$           |
| (c) $\frac{1 + \cot x}{1 - \cot x}$           | (d) $\frac{\cos x - \sin x}{\cos x + \sin x}$ |

\_\_4.  $\cos\left(\frac{\pi}{2} + \theta\right)$  is equal to:

- |                   |                    |
|-------------------|--------------------|
| (a) $\cos \theta$ | (b) $-\cos \theta$ |
| (c) $\sin \theta$ | (d) $-\sin \theta$ |

\_\_5.  $\sin(90^\circ - \theta)$  is equal to:

- |                    |                   |
|--------------------|-------------------|
| (a) $-\sin \theta$ | (b) $\sin \theta$ |
| (c) $-\cos \theta$ | (d) $\cos \theta$ |

\_\_6.  $\sin(\pi - x)$  is equal to:

- |               |               |
|---------------|---------------|
| (a) $-\sin x$ | (b) $\sin x$  |
| (c) $\cos x$  | (d) $-\cos x$ |

\_\_7.  $\tan\left(\frac{\pi}{2} + \theta\right)$  is equal to:

- |                    |                    |
|--------------------|--------------------|
| (a) $\tan \theta$  | (b) $\cot \theta$  |
| (c) $-\cot \theta$ | (d) $-\tan \theta$ |

\_\_8.  $\cos(\pi + \theta)$  is equal to:

- |                    |                    |
|--------------------|--------------------|
| (a) $\cos \theta$  | (b) $-\sin \theta$ |
| (c) $-\cos \theta$ | (d) $\sin \theta$  |

- \_\_9.  $\cos\left(\frac{\pi}{2} + \theta\right)$  is equal to:
- (a)  $\cos \theta$  (b)  $\sin \theta$   
(c)  $-\cos \theta$  (d)  $-\sin \theta$
- \_\_10.  $\tan\left(\frac{3\pi}{2} + \theta\right)$  is equal to:
- (a)  $\tan \theta$  (b)  $-\tan \theta$   
(c)  $\cot \theta$  (d)  $-\cot \theta$
- \_\_11.  $\frac{\sin(\alpha + \beta)}{\cos \alpha \sin \beta}$  is equal to:
- (a)  $\tan \alpha - \tan \beta$  (b)  $\tan \alpha + \tan \beta$   
(c)  $\sin \alpha + \sin \beta$  (d)  $\sin \alpha - \sin \beta$
- \_\_12.  $\sin 2\alpha$  is equal to:
- (a)  $\cos^2 \alpha - \sin^2 \alpha$  (b)  $\cos 2\alpha$   
(c)  $1 - \cos^2 \alpha$  (d)  $2\sin \alpha \cos \alpha$
- \_\_13.  $2\cos^2 \frac{\theta}{2}$  is equal to:
- (a)  $1 + \cos \theta$  (b)  $1 - \cos \theta$   
(c)  $1 + \sin \theta$  (d)  $1 - \sin \theta$
- \_\_14.  $\cos(\alpha + \beta) - \cos(\alpha - \beta)$  is equal to:
- (a)  $2 \sin \alpha \cos \beta$  (b)  $2 \cos \alpha \sin \beta$   
(c)  $2 \cos \alpha \cos \beta$  (d)  $-2 \sin \alpha \sin \beta$
- \_\_15.  $\cos A - \cos B$  is equal to:
- (a)  $2\cos \frac{A+B}{2} \cos \frac{A-B}{2}$  (b)  $-2\sin \frac{A+B}{2} \sin \frac{A-B}{2}$   
(c)  $2\sin \frac{A+B}{2} \cos \frac{A-B}{2}$  (d)  $2\cos \frac{A+B}{2} \sin \frac{A-B}{2}$
- \_\_16.  $\sin(A + B) - \sin(A - B)$  is equal to:
- (a)  $2 \sin A \cos B$  (b)  $2 \cos A \cos B$   
(c)  $-2 \sin A \sin B$  (d)  $2 \cos A \sin B$
- \_\_17.  $\cos(A - B) - \cos(A + B)$  is equal to:
- (a)  $2 \sin A \sin B$  (b)  $-2 \sin A \sin B$   
(c)  $2 \cos A \cos B$  (d)  $2 \cos A \sin B$
- \_\_18.  $\sin 5\theta - \sin 2\theta$  is equal to:
- (a)  $2\sin 3\theta \cos 2\theta$  (b)  $2\cos 3\theta \sin 2\theta$   
(c)  $2\cos 3\theta \cos 2\theta$  (d)  $-2\cos 3\theta \sin 2\theta$

- \_\_19.  $\sin 5\theta + \sin \theta$  is equal to:
- (a)  $2\sin 3\theta \cos 2\theta$  (b)  $-2\cos 3\theta \sin 2\theta$   
(c)  $2\cos 3\theta \sin 2\theta$  (d)  $2\sin 3\theta \sin 2\theta$
- \_\_20.  $2\sin 6\theta \cos 2\theta$  is equal to:
- (a)  $\sin 8\theta + \sin 4\theta$  (b)  $\sin 8\theta - \sin 4\theta$   
(c)  $\cos 8\theta + \cos 4\theta$  (d)  $\cos 8\theta - \cos 4\theta$

**Answers**

- |     |   |     |   |     |   |     |   |     |   |
|-----|---|-----|---|-----|---|-----|---|-----|---|
| 1.  | a | 2.  | b | 3.  | d | 4.  | d | 5.  | d |
| 6.  | b | 7.  | c | 8.  | c | 9.  | d | 10. | d |
| 11. | b | 12. | d | 13. | a | 14. | d | 15. | a |
| 16. | d | 17. | a | 18. | c | 19. | a | 20. | a |