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M.Sc. Math
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39) ____ $= \pm\sqrt{\frac{1+\cos\alpha}{2}}$ a- $\cos\alpha$ ✓b- $\cos\frac{\alpha}{2}$ c- $\sin\frac{\alpha}{2}$ d- $\tan\frac{\alpha}{2}$

40) ____ $= \pm\sqrt{\frac{1-\cos\alpha}{2}}$ a- $\cos\alpha$ b- $\cos\frac{\alpha}{2}$ c✓ $\sin\frac{\alpha}{2}$ d- $\tan\frac{\alpha}{2}$

41) ____ $= 2\sin\frac{\alpha}{2}\cos\frac{\alpha}{2}$ a- $\cos\alpha$ ✓b- $\sin\alpha$ c- $\tan\alpha$ d- $\cos 2\alpha$

42) ____ $= \pm\sqrt{\frac{1-\cos\alpha}{1+\cos\alpha}}$ a- $\tan\alpha$ ✓b- $\tan\frac{\alpha}{2}$ c- $\tan 2\alpha$ d- $\tan 3\alpha$

43) ____ $= 3\sin\alpha - 4\sin^3\alpha$ a- $\sin\alpha$ b- $\sin 2\alpha$ ✓c- $\sin 3\alpha$ d- $\sin 4\alpha$

44) ____ $= 4\cos^3\alpha - 3\cos\alpha$ a- $\sin\alpha$ b- $\cos\alpha$ c- $\cos 2\alpha$ ✓d- $\cos 3\alpha$

45) ____ $= \frac{3\tan\alpha - \tan^3\alpha}{\quad}$ a- $\tan\alpha$ b- $\tan 2\alpha$ c- $\tan\frac{\alpha}{2}$ ✓d- $\tan 3\alpha$

46) $\frac{2\tan\alpha}{1+\tan^2\alpha} = \frac{1-3\tan^2\alpha}{\quad}$ a✓ $\sin 2\alpha$ b- $\cos 2\alpha$ c- $\tan 2\alpha$ d- $\tan 3\alpha$.

47) ____ $= \frac{1-\tan^2\alpha}{1+\tan^2\alpha}$ a- $\sin 2\alpha$ ✓b- $\cos 2\alpha$ c- $\tan 2\alpha$ d- $\tan 3\alpha$

48) $\sin(\alpha+\beta) + \sin(\alpha-\beta) =$ _____.

✓a- $2\sin\alpha\cos\beta$ b- $2\cos\alpha\sin\beta$ c- $2\sin\alpha\cos\alpha$ d- $2\cos\alpha\cos\beta$

49) $\sin(\alpha+\beta) - \sin(\alpha-\beta) =$ _____

a- $2\sin\alpha\cos\beta$ b✓ $2\cos\alpha\sin\beta$ c- $2\cos\alpha\cos\beta$ d- $-2\sin\alpha\cos\beta$

50) $\cos(\alpha+\beta) + \cos(\alpha-\beta) =$ _____

a- $2\sin\alpha\cos\beta$ b- $2\cos\alpha\sin\beta$ ✓c- $2\cos\alpha\cos\beta$ d- $-2\sin\alpha\sin\beta$

51) $\cos(\alpha+\beta) - \cos(\alpha-\beta) =$ _____.

a- $2\sin\alpha\cos\beta$ b- $2\cos\alpha\sin\beta$ c- $2\cos\alpha\cos\beta$ ✓d- $-2\sin\alpha\sin\beta$

52) $\sin P + \sin Q =$ _____.

✓a- $2\sin\left(\frac{P+Q}{2}\right)\cos\left(\frac{P-Q}{2}\right)$ b- $2\cos\left(\frac{P+Q}{2}\right)\sin\left(\frac{P-Q}{2}\right)$ c- $2\cos\left(\frac{P+Q}{2}\right)\cos\left(\frac{P-Q}{2}\right)$ d- $2\sin\left(\frac{P+Q}{2}\right)\sin\left(\frac{P-Q}{2}\right)$

53) $\sin P - \sin Q =$ _____

a- $2\sin\left(\frac{P+Q}{2}\right)\cos\left(\frac{P-Q}{2}\right)$ b✓ $2\cos\left(\frac{P+Q}{2}\right)\sin\left(\frac{P-Q}{2}\right)$ c- $2\cos\left(\frac{P+Q}{2}\right)\cos\left(\frac{P-Q}{2}\right)$ d- $-2\sin\left(\frac{P+Q}{2}\right)\sin\left(\frac{P-Q}{2}\right)$

54) $\cos P - \cos Q =$ _____

a- $2\sin\left(\frac{P+Q}{2}\right)\cos\left(\frac{P-Q}{2}\right)$ b- $2\cos\left(\frac{P+Q}{2}\right)\sin\left(\frac{P-Q}{2}\right)$ c✓ $2\cos\left(\frac{P+Q}{2}\right)\cos\left(\frac{P-Q}{2}\right)$ d- $-2\sin\left(\frac{P+Q}{2}\right)\sin\left(\frac{P-Q}{2}\right)$

55) $\cos P - \cos Q =$ _____

a- $2\sin\left(\frac{P+Q}{2}\right)\cos\left(\frac{P-Q}{2}\right)$ b- $2\cos\left(\frac{P+Q}{2}\right)\sin\left(\frac{P-Q}{2}\right)$ c- $2\cos\left(\frac{P+Q}{2}\right)\cos\left(\frac{P-Q}{2}\right)$ d- ✓$-2\sin\left(\frac{P+Q}{2}\right)\sin\left(\frac{P-Q}{2}\right)$

CHAPTER: 11

(i) Domain of $y = \sin x$ is _____ a- $[0,1]$ b✓ $\mathbb{R}$ c- $[-1,1]$ d- $[-1,0]$

(ii) Range of $y = \sin x$ is _____ a- $[-1,0]$ b- $[0,1]$ ✓c- $[-1,1]$ d- $(-1,1)$

(iii) Domain of $y = \cos x$ is _____. ✓a- $\mathbb{R}$ b- $(0,\infty)$ c- $(-\infty,0)$ d- $[-1,1]$

(iv) Range of $y = \cos x$ is _____. a- $[-1,0)$ b- $(0,1]$ c- $(-1,1)$ ✓d- $[-1,1]$

(v) Period of $y = \sin x$ is _____. ✓a- 2π b- π c- $\pi/2$ d- 4π

6) Period of $y=\cos x$ is _____. a- 2π b- π c- $\pi/2$ d- $3\pi/2$

7) Period of $y=\tan x$ is _____. a- 2π b- π c- $-\pi$ d- -2π

8) Period of $y=\cot x$ is _____. a- 2π b- π c- $-\pi$ d- -2π

9) Period of $y=\operatorname{cosec} x$ is _____ a- π b- $-\pi$ c- 2π d- -2π

10) Period of $y=\sec x$ is _____ a- π b- $-\pi$ c- -2π d- 2π

11) Trigonometsic functions are _____. a- 2 b- 3 c- 4 d- 6

12) Trigonometric Functions are defined on _____.
a- X-axis b- Y-axis c- Line d- Unit Circle

13) Period of $\sin 2x$ is _____. a- 2π b- π c- $-\pi$ d- -2π

14) Period of $\tan(\frac{x}{7})$ is _____. a- $\frac{\pi}{7}$ b- 2π c- $\frac{2\pi}{7}$ d- 7π

15) Period of $\sin(\frac{x}{2})$ is _____. a- π b- 2π c- 4π d- $\frac{\pi}{2}$

16) Period of $3\sin(\frac{x}{3})$ is _____. a- 2π b- $\frac{2\pi}{3}$ c- 6π d- $\frac{3\pi}{2}$

17) If $f(x+p)=f(x)$ then f is called _____ function.
a- Algebraic b- Exponential c- Periodic d- Redical.

18) Domain of $y=\tan x$ is _____.
a- $\mathbb{R}$ b- $(-\infty,\infty)$ c- $\mathbb{R}\wedge x\neq\frac{(2n+1)\pi}{2}, n\in z$ d- $(\frac{-\pi}{2},\frac{\pi}{2})$

19) Range of $y=\tan x$ is _____.
a- $\mathbb{R}$ b- $(-\frac{\pi}{2},\frac{\pi}{2})$ c- $[-\frac{\pi}{2},\frac{\pi}{2}]$ d- $[0,\pi]$

20) Domain of $y=\cot x$ is _____.
a- $\mathbb{R}$ b- $\mathbb{R}, x\neq(2n+1)\frac{\pi}{2}$ c- $\mathbb{R}\wedge x\neq n\pi\ n\in z$ d- $(-\frac{\pi}{2},\frac{\pi}{2})$

21) Domain of $y=\operatorname{Cosec} x$ is _____.
a- $\mathbb{R}$ b- $(-\infty,\infty)$ c- $\mathbb{R}\wedge x\neq n\pi, n\in z$ d- $\mathbb{R}, x=(2n+1)\frac{\pi}{2}\ n\in z$

22) Range of $y=\sec x$ is _____.
a- $y\leq 1$ b- $y\geq 1$ c- $y\leq -1$ d- $y\leq -1\wedge y\geq 1$

23) Period of $\tan 4x$ is _____. a- π b- 4π c- $\pi/4$ d- $\pi/8$

24) Period of $\cos(\frac{x}{5})$ is _____. a- 5π b- 10π c- $\frac{\pi}{5}$ d- $\frac{2\pi}{5}$

CHAPTER: 12

1) In any $\triangle ABC$, $\alpha+\beta+\gamma=$ _____ a- 90° b- 180° c- 270° d- 360°

2) Triangle which is not right is called a- Obique b- Cyclic c- skew d- Plane

3) Angle above eye level is called Angle of _____.
a- Depression b- Elevation c- incident d- Refraction.

4) Angle below eye level is called Angle of _____.
a- Depression b- Elevation c- Sector d- incident.