(SUBJECTIVE TEST)

DO ANY 10 QUESTIONS

40 MARKS	1:30 HRS

Qns: 1
(4M)

Find the value of

$$\left(1+\cos\frac{\pi}{8}\right)\left(1+\cos\frac{3\pi}{8}\right)\left(1+\cos\frac{5\pi}{8}\right)\left(1+\cos\frac{7\pi}{8}\right)$$

Qns: 2 →
(4M)

Solve (find value of x ; (not general solution))

$$2\tan^2 x + \sec^2 x = 2 \quad ; \quad 0 < x \le 2\pi$$

Qns: 3 →
(4M)

Find the value of $\sin(20°)\sin(40°)\sin(60°)\sin(80°)$

Qns: 4 →
(4M)

Find the value of $\cos\left(\frac{\pi}{5}\right) \cdot \cos\left(\frac{2\pi}{5}\right)\cos\left(\frac{4\pi}{5}\right)\cos\left(\frac{8\pi}{5}\right)$

Qns: 5 →
(4M)

Find the value of

$$\cos^4\left(\frac{\pi}{8}\right) + \cos^4\left(\frac{3\pi}{8}\right) + \cos^4\left(\frac{5\pi}{8}\right) + \cos^4\left(\frac{7\pi}{8}\right)$$

Qns: 6 →
(4M)

Find the value of $\sin(18°)$ and $\cos(36°)$

Qns: 7 →
(4M)

Find the value of $\tan(22°30')$

Qns: 8 →
(4M)

If $\cos(\alpha+\beta) = \frac{4}{5}$ and $\sin(\alpha-\beta) = \frac{5}{13}$, where α lie between 0 and $\frac{\pi}{4}$. Find the value of $\tan(2\alpha)$

Qns: 9 →
(4M)

Show that $\tan(9°) - \tan(27°) - \tan(63°) + \tan(81°)$
$$= 4$$

Qu. 10 →

(4M) If angle θ is divided in to two parts such that the tangent of one part is 'k' times the tangents g order, and ϕ is their difference, then show that

$$\sin\theta = \left(\frac{k+1}{k-1}\right)\sin\phi$$

Qu. 11 →

(4M) $3\left[\sin^4\left(\frac{3\pi}{2}-\alpha\right) + \sin^4\left(3\pi+\alpha\right)\right] - 2\left[\sin^6\left(\frac{\pi}{2}+\alpha\right) + \sin^6\left(5\pi-\alpha\right)\right]$

Qu. 12 →

(4M) If A lies in the 2nd quadrant and $3\tan A + 4 = 0$, then find the value of

$$2\cot A - 5\cos A + \sin A$$

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