

Rizvi College of Engineering
Term Test II

Marks-20

Time-45 minutes

Note:-All questions are compulsory

1. If α, β are the roots of equation $z^2 \sin^2 \theta - z \sin 2\theta + 1 = 0$ prove that (7)
 $\alpha^n + \beta^n = 2 \cos n\theta \operatorname{cosec}^n \theta$

2. Show that $\frac{\sin 5\theta}{\sin \theta} = 16 \cos^4 \theta - 12 \cos^2 \theta + 1$ (7)

3. If $u = (1 - 2xy + y^2)^{-\frac{1}{2}}$, prove that $x \frac{\partial u}{\partial x} - y \frac{\partial u}{\partial y} = y^2 u^3$. (6)