Maximum Mar

Time: 70 min.

Note: Attempt onlv four questions.

Q:2   Find the expansion of $f(x, y) = \cos x \cos y$ in power of x & y upto the 3rd degree terms.

Q;4   Trace the curve : $y^2(a^2 + x^2) = x^2(a^2 - x^2)$.

2:5   Find the area lying within the cardioid $r = a(1 + \cos\theta)$ and outside the circle $r = \dfrac{3}{2}a$.

Q:3 Find the length of an arc of the parabola $y^2 = 4ax$ measured from the vertex to one extremity of the latus rectum 05

$x_1'^3(y-y_1) + (y_1)'^3(x-x_1) = 0$

Q:4 Evaluate $\int_0^a \int_0^x \int_0^{x+y} e^{x+y+z}\, dz\, dy\, dx$ 05

$x = a\sec^2 t$

$P = (1 + \ldots)$ $\rho = |x_1'^2 y_1 + y$