

श्री अहिम्मा विश्वविद्यालय इंदौर
(Regular) छात्रों के लिए

Class: BCA IV Semester

Paper: Coordinate Geometry in 3-D.

Attempt all the five questions. Each question carry equal marks.

Q.1 Show that the equations of lines given by
 $\frac{x-1}{2} = \frac{y-2}{3} = \frac{z-4}{4}$ & $\frac{x-3}{3} = \frac{y-3}{4} = \frac{z-4}{5}$
are coplanar.

Q.2 Find the equations of sphere with centre at $(2, 3, -4)$ and touching plane $2x + 6y - 3z + 15 = 0$

Q.3 Find the equation of plane which cuts the paraboloid $x^2 - 2y^2 = 3z$ in conic with centre $(1, 2, 3)$.

Q.4 Prove that six normals can be drawn to an ellipsoid from a given point (x_1, y_1, z_1)

Q.5 Find the reciprocal cone of the cone:
 $\frac{x^2}{a^2} + \frac{y^2}{b^2} + \frac{z^2}{c^2} = 0$