

VIVEKANANDA COLLEGE

ALIPURDUAR

Internal Assessment - 2023

3rd Semester

Sub- Mathematics

Full Marks: 10

Time: 30 minutes

1. If the roots of the equation $x^3 - px^2 + qx - r = 0$ are in H.P, Show that the mean root is $\frac{3r}{q}$.
2. Find the value of k to r which the system of equations $x + y + z = 2$, $2x + y + 3z = 1$, $x + 3y + 2z = 5$, $3x - 2y + z = k$ is solvable & then solve it.

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Internal Assessment - 2023

5th Semester, DSE

Sub- Mathematics

Full Marks: 10

Time: 30 minutes

1. Show that the vectors $(-1, 2, 1)$; $(3, 0, -1)$; $(-5, 4, 3)$ are linearly dependent.
2. Prove that every cyclic group is commutative but the converse is not true.