jee-main-maths-13-04-2023-shift-2

EE24BTECH11030 - J.KEDARANANDA

1) The random variable X follows binomial distribution B (n, p), for which the difference of the mean and the variance is 1. If $2P(x = 2) = 3P(x = 1)$, then $n^2P(X > 1)$ is equal to

a) 16 b) 11 c) 12 d) 15

2) Let the centre of a circle C be (α , β) and its radius $r < 8$. Let $3x + 4y = 24$ and $3x - 4y = 32$ be two tangents and $4x + 3y = 1$ be a normal to C. Then $(\alpha - \beta + r)$ is equal to

a) 5 b) 6 c) 7 d) 9

3) Let N be the foot of perpendicular from the point P (1, -2, 3) on the line passing through the points (4,5,8) and (1,-7,5). Then the distance of N from the plane $2x - 2y + z + 5 = 0$ is

a) 6 b) 7 c) 9 d) 8

4) All words, with or without meaning, are made using all the letters of the word MONDAY. These words are written as in a dictionary with serial numbers. The serial number of the word MONDAY is

a) 328 b) 327 c) 324 d) 326

5) Let (α , β) be the centroid of the triangle formed by the lines $15x - y = 82$, $6x - 5y = -4$ and $9x + 4y = 17$. Then $\alpha + 2\beta$ and $2\alpha - \beta$ are the roots of the equation

a) $x^2 - 13x + 42 = 0$ b) $x^2 - 10x + 25 = 0$ c) $x^2 - 7x + 12 = 0$ d) $x^2 - 14x + 48 = 0$