Graphic Era HILL UNIVERSITY
Established by an Act of the State Legislature of Uttarakhand (Adhiniyam Sankhya 12 of 2011)
University under section 2(f) of UGC Act, 1956

Mid Term (Odd) Semester Examination October 2024

Roll no.....

Name of the Course and semester: BCA, 3rd Semester
Name of the Paper: Probability and Statistics
Paper Code: TBC305
Time: 1.5hour

Maximum Marks: 50

Note:

(i) Answer all the questions by choosing any one of the sub questions
(ii) Each question carries 10 marks.

Q1.

a. Find the mode of the following frequency distribution: (10 Marks) (CO1)

Size(x)	1	2	3	4	5	6	7	8	9	10	11	12
Frequency	3	8	15	23	35	40	32	28	20	45	14	6

OR

b. Find the simple and weighted arithmetic mean of the first n natural numbers, the weights being the corresponding numbers. (CO1)

Q2.

a. Define the following terms: (10 Marks) (CO1)
(i) Method of collecting Primary data
(ii) Harmonic Mean
(iii) Geometric Mean
(iv) Exhaustive Events
(v) Laplace 2nd Principle/ Addition theorem of prob

OR

b. State Baye's theorem of probability. Three Urns contain 6 red, 4 black; 4 red, 6 black; 5 red and 5 black balls respectively. One of the Urns is selected at random and a ball is drawn from it. If the ball drawn is red find the probability that it is drawn from the first Urn? (CO1)

Q3.

a. With the usual notations, find p for a binomial variate X, if $n = 6$ and $9P(X = 4) = P(X = 2)$ (10 Marks) (CO2)

OR

b. Define Poisson distribution. Given that the probability of some person will be suffering from blood cancer is 0.0001, if 5000 persons are examined find the probability of following: (CO2)
(i) Exactly 2 persons will be suffering
(ii) At most 2 persons will be suffering
(iii) At least 1 person will be suffering

Graphic Era HILL UNIVERSITY

Mid Term (Odd) Semester Examination October 2024

Q4. (10 Marks)

a. Probability that A will solve a problem is 1/3 and that B will solve it is 1/7 find the probability that the problem will be solved? (CO1)

OR

b. Define the following terms: (CO2)
(i) Discrete random variable
(ii) Probability mass function

Q5. (10 Marks)

a. Find the mean and variance of the random variable X where X is numbers of heads in a single toss of a fair coin. (CO2)

OR

b. Define binomial distribution. A coin is tossed 10 times find the probability of following events
(i) Exactly 7 Head occur
(ii) At least 1 head occur
(iii) At least 7 head occur (CO2)