

Plot No. 2, Knowledge Park-III, Greater Noida (U.P.) –201306

POST GRADUATE DIPLOMA IN MANAGEMENT (2023-24)
END TERM EXAMINATION (TERM - I)

Subject Name: **Statistics for Decision Making**

Time: **02.00 hrs.**

Sub. Code: **PG14**

Max Marks: **40**

Note:

All questions are compulsory. Section A carries 5 marks: 5 questions of 1 mark each, Section B carries 21 marks having 3 questions (with internal choice question in each) of 7 marks each and Section C carries 14 marks one Case Study having 2 questions of 7 marks each.

SECTION - A

Attempt all questions. All questions are compulsory.

1×5 = 5 Marks

Q. 1: (A). Why Arithmetic Mean is supposed to be the best measure of central tendency?

Q. 1: (B). Distinguish between mathematical average and positional average with relevant examples.

Q. 1: (C). Describe simple random sampling method of drawing a representative sample out of population

Q. 1: (D). Explain Conditional and Joint Probability.

Q. 1: (E). What is Binomial Probability Distribution?

SECTION – B

All questions are compulsory (Each question have an internal choice. Attempt any one (either A or B) from the internal choice)

7 x 3 = 21 Marks

Q. 2: (A). 100 Salesmen employed by a company, have booked the following number of orders for a newly introduced FAX machine during the last six months:

No of orders	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Number of salesmen	4	12	25	30	15	8	6

Calculate the Arithmetic Mean and Median of the data and account for the difference, if any.

Or

Q. 2: (B).

If mean and variance of a binomial distribution are 4 and 2 respectively find the probability of (i) exactly 2 successes (ii) less than 2 successes (iii) at least 2 successes

Q. 3: (A).

Calculate the coefficient of correlation by Karl Pearson's method from the following data relating to overhead expenses and the cost of production: also interpretate the result

Overheads in (000's Rs)	80	90	100	110	120	130	140	150	160
Cost of Production (000's Rs)	15	15	16	19	17	18	16	18	19

Or

Q. 3: (B).

In the factories A and B the average weekly wages and standard deviation are as follows:

Factory	Average weekly wages (Rs)	Standard Deviation of Wages	Number of workers
A	460	50	100
B	490	40	80

Find out (i) Which factory pays larger amount as weekly wage. (ii) Which factory shows greater variability in the distribution of wages. (iii) What is the mean and standard deviation of all the workers in two factories taken together.

Q. 4: (A).

The following data related to supply and price, build a regression of price on supply. Also calculate from the regression equation the most likely price when supply is **90**

Supply	80	82	86	91	83	85	89	96	93
Price	145	140	130	124	133	127	120	110	116

Or

Q. 4: (B).

A bag contains 30 balls numbered from 1 to 30. One ball is drawn at random. Find the probability that number of the drawn ball is a multiple of (i) 4 or 9 (ii) 5 or 6

SECTION - C

Read the case and answer the questions

7×02 = 14 Marks

Q. 5: Case Study:

A researcher was interested to understand the trend values of the sales of cars year wise and the researcher is also interested to forecast future trends using statistical methods. Management of the car manufacturer also interested to know the expected future sales if the same trends prevail. The data collected is as follows: further A linear trend is observed during his research.

Year	1997	1998	1999	2000	2001	2002
Sales (000'Rs)	10	12	15	16	18	19

Questions:

Q. 5: (A). fit a linear trend of the car sales with respect to year.

Q. 5: (B). Also find out the trend values for the year **2006 &2008**

Mapping of Questions with Course Learning Outcome

Question Number	COs	Bloom's Taxonomy Level	Marks Allocated
Q. 1:	CO1	L1, L2	5 marks
Q. 2:	CO2	L4, L5	7 marks
Q. 3:	CO3	L4, L5	7 marks
Q. 4:	CO4	L4, L5	7 marks
Q. 5:	CO3, CO4	L5, L6	14 marks