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NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, (NIET BUSINESS SCHOOL) GREATER NOIDA
PGDM (Standard)

TRIMESTER-III THEORY EXAMINATION (2024-2025)

Subject: Business Statistics

Time: 2Hrs.30 min

Max. Marks:60

General Instructions:

IMP: Verify that you have received question paper with correct course, code, branch etc.

1. This Question paper comprises of three Sections -A, B, & C. It consists of Short type questions & Subjective type questions.
2. Maximum marks for each question are indicated on right hand side of each question.
3. Illustrate your answers with neat sketches wherever necessary.
4. Assume suitable data if necessary.
5. Preferably, write the answers in sequential order.
6. No sheet should be left blank. Any written material after a blank sheet will not be evaluated/checked.

SECTION – A

15

1. Attempt **all** parts:-

- | | |
|--------------------------------------|---|
| 1-a. Define Sample.(CO1,K1) | 1 |
| 1-b. Define Mode. (CO2, K1) | 1 |
| 1-c. Define Probability. (CO3, K1) | 1 |
| 1-d. Define Null hypothesis.(CO4,K1) | 1 |
| 1-e. Define Correlation. (CO5, K1) | 1 |

2. Attempt **all** parts:-

- | | |
|--|---|
| 2.a. Define Primary data and Secondary data. (CO1, K1) | 2 |
| 2.b. The Coefficient of variation is 68%. The standard deviation is 21.1. Find the arithmetic mean. (CO2,K3) | 2 |
| 2.c. Define Binomial distribution. (CO3,K1) | 2 |
| 2.d. Define level of significance.(CO4,K1) | 2 |
| 2.e. Define Regression. (CO5,K1) | 2 |

SECTION – B

15

3. Answer any **three** of the following-

- | | |
|--|---|
| 3-a. Differentiate between Sampling errors and Non-sampling errors. (CO1,K1) | 5 |
| 3-b. Calculate the Median for the following data:(CO2, K3) | 5 |

Class Interval	0-10	10-20	20-30	30-40	40-50
Frequency	10	20	40	20	10

- 3-c. Define Normal distribution and also give its properties. (CO3,K1) 5
- 3-d. A random sample of size 20 from a normal population gives a sample mean 42 and sample standard deviation of 6. Test the hypothesis that the population mean is 44.(Tabulated value is 2.09 at 5% level of significance) (CO4,K3) 5
- 3-e. Define Analysis of variance and also give assumptions of ANOVA. (CO5,K1) 5

SECTION – C

30

Case Let & Application Based

4. Answer any **one** of the following-
- 4-a. Define Statistics and illustrate with suitable example the use of statistics in business and industry. (CO1,K1) 6
- 4-b. Define Classification and also the types of classification. (CO1,K1) 6
5. Answer any **one** of the following- 6
- 5-a. Calculate the mean deviation from mean for the following data: (CO2, K3) 6

Class Interval	2-4	4-6	6-8	8-10
frequency	3	4	2	1

- 5-b. Calculate the Interquartile range, quartile deviation for the following data:(CO2, K3) 6

Age Group	0-20	20-40	40-60	60-80	80-100
Person's	4	10	15	20	11

6. Answer any **one** of the following-

6-a. The overall percentage of failure in a certain examination is 40. What is the probability that out of a group of 6 candidates at least 4 passed the examinations? (CO3,K3) 6

6-b. A sample of 100 dry battery cells tested to find the length of life produced the following results: Mean is 12 hrs and S.D. is 3 hrs. Assuming the data to be normally distributed. Find the percentage of Battery cells expected to have life between 10 hrs and 14 hrs. Given that area (at $z = 0.67$) = 0.2487 (CO3,K3) 6

7. Answer any **one** of the following-

7-a. Define Testing of hypothesis and also the steps used in testing of hypothesis. (CO4,K1) 6

7-b. A Dice was thrown 60 times with the following results: 6

Face	1	2	3	4	5	6
Freq.	6	10	8	13	11	12

Are the data consistent with the hypothesis that the dice is consistent. (CO4, K3)

8. Answer any **one** of the following-

8-a. Calculate the Karl Pearson co-efficient of correlation for the following table: (CO5, K3) 6

Class Interval	10	14	18	22	26	30
frequency	18	12	24	6	30	36

8-b. If two Regression equations of y on x and x on y are as follows: (CO5, K3) 6

$$2y = 32 - x$$

$$\text{and } x = 13 - 0.25y.$$

Find (i) the mean values of x and y (ii) Coefficient of correlation between x and y.