BRAINWARE UNIVERSITY

Term End Examination 2025-2026
Programme – BBA(DM)-Hons-2023/BBA(DM)-Hons-2024/BBA(DM)-Hons-2025
Course Name – Statistics for Analysis
Course Code - BBD20001
(Semester II)

Full Marks : 60 **Time : 2:30 Hours**

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A
(Multiple Choice Type Question) 1 x 15=15

1. *Choose the correct alternative from the following :*

(i) Which measure of dispersion looks at the middle 50% of the data?

a) Range b) Quartile Deviation
c) Mean Deviation d) Standard Deviation

(ii) What does the first moment of a distribution represent?

a) The total sum of all data points. b) The highest value in the dataset.
c) The average value of the data (Mean). d) A measure of how sharp the peak is.

(iii) What type of bars does a histogram always have?

a) Separate with gaps in between. b) Touching each other.
c) Different widths for each value. d) Arranged in any random order.

(iv) Based on the given data:

X: 10, 12, 15, 18, 20

Y: 15, 20, 22, 25, 37

Identify the type of correlation is observed between the variables **X** and **Y** in the given data.

a) Negative correlation b) Positive correlation
c) No correlation d) Cannot be determined

(v) How do you calculate the mean of a dataset?

a) Add all numbers and divide by how many numbers there are. b) Find the middle number in the dataset.
c) Identify the most frequent number. d) Subtract the smallest number from the largest.

(vi) What does skewness measure in a dataset?

a) The symmetry of the data distribution b) The average value of the dataset

c) The difference between the highest and lowest values
d) The number of values in the dataset

(vii) What does a t-test compare?

a) Two means
b) Two medians
c) Two standard deviations
d) Two variances

(viii) Identify, in a paired (dependent) samples t-test, the main idea is to compare:

a) Means of two independent groups
b) Means of two dependent groups
c) Variability within a single group
d) Proportions within two independent groups

(ix) Solve for a test is conducted for H0: $\mu = 34$, with $\sigma = 5$. A sample of size 100 is selected. The standard error of the sampling distribution is ?

a) 0.05
b) 0.5
c) 5
d) 0.005

(x) Solve the probability of rolling an even number on a fair six-sided die.

a) 1/2
b) 1/3
c) 1/4
d) 1/6

(xi) When three fair coins are tossed, what is the probability of getting at most two heads?

a) 1/8
b) 3/8
c) 1/2
d) 7/8

(xii) When two coins are tossed, what is the probability of getting at least one tail?

a) 1/4
b) 1/2
c) 3/4
d) 1

(xiii) A and B are two individuals. A tells the truth 75% of the time, while B tells the truth 80% of the time. If both of them narrate the same event, what is the probability that they will contradict each other?

a) 25%
b) 35%
c) 45%
d) 50%

(xiv) Determine the probability of rolling a sum of 2 when two dice are rolled.

a) 1/36
b) 1/12
c) 1/18
d) 1/6

(xv) Calculate the probability of drawing a Heart from a standard deck of 52 cards?

a) 1/4
b) 1/52
c) 1/13
d) 1/3

Group-B

(Short Answer Type Questions) 3 x 5=15

2. Construct a Simple Bar chart diagram to represent year wise (5 yearly) students input (in thousands) in a large Indian University. (3)

Year	1960	1965	1970	1975	1980	1985	1990
No. of student	20	27.5	23.5	30.0	16.5	25	35

3. Show that the standard deviation from the following table is 13.56: (3)

x	10	20	30	40	50	60	Total
f	9	18	25	27	14	7	100

4. What is the probability of selecting an odd number from the digits 1, 2, 3, 4, 5, 6? (3)
5. Classify the various types of kurtosis. (3)

6. Calculate the combined mean from the following information: The mean weight of 60 boys and 40 girls in a class are 70 kg and 50 kg respectively. (3)

OR

The average weight of 10 students was found to be 68 kg. later on it was found that one student had reported his weight as 80KG instead of 40KG. Find the corrected weight. (3)

Group-C

(Long Answer Type Questions) 5 x 6=30

7. The following frequency table is given below: (5)

Class	1-2	2-3	3-4	4-5	5-6	6-7
Frequency	12	12	15	18	7	9

Predict the median of the frequency distribution.

8. Write a short note on Random Variable. (5)
9. Explain stratified sampling (5)
10. Determine the linear regression equation of Y on X for the data. (5)

x	1	3	4	6	8	9	11	14
y	1	2	4	4	5	7	8	9

11. Predict the spearman's correlation coefficient. (5)

x	5	6	8	9	12
y	6	8	16	9	19

12. Predict the value of the correlation coefficient from the data given in the following table: (5)

x	43	21	25	42	57	59
y	99	65	79	75	87	81

OR

Predict the spearman's correlation coefficient. (5)

x	1	2	3	4	5

y 6 8 11 9 12

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