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BRAINWARE UNIVERSITY

Term End Examination 2025-2026
Programme – BBA-Hons-2023/BBA-Hons-2024/BBA(BA)-Hons-2024/BBA-Hons-2025/BBA(BA)-Hons-2025
Course Name – Business Statistics
Course Code - BBA10001/BBB10001
(Semester I)

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) If the points on a scatter plot are scattered randomly with no clear pattern, identify about the relationship between the two variables.

a) A strong positive correlation b) A strong negative correlation
c) A weak positive correlation d) No correlation

(ii) Identify the Karl Pearson's coefficient of correlation measures from the options given below.

a) The strength and direction of a linear relationship between two variables b) The strength and direction of a non-linear relationship between two variables
c) The average value of two variables d) The difference between two variables

(iii) Identify the correct term to complete the following statement: The correlation coefficient, developed by Karl Pearson, measures the strength and direction of a _________ relationship between two variables.

a) Nonlinear b) Linear
c) Quadratic d) Exponential

(iv) Select the correct option . A correlation coefficient of +0.85 indicates:

a) A strong positive linear relationship b) A weak positive linear relationship
c) No relationship between variables d) A strong negative relationship

(v) Identify the median of the following dataset: 3, 5, 7, 9, 11, 12, 13, 15, 17.

a) 9 b) 11
c) 12 d) 13

(vi) Identify the Mode of the following dataset: 3, 7, 8, 8, 9, 10, 10, 10, 11.

a) 8 b) 9
c) 10 d) 11

(vii) List the most appropriate measure of central tendency for a highly skewed distribution.

a) Mean b) Median

c) Mode
d) Geometric mean

(viii) List the central tendency measure that represents the most frequently occurring value.

a) Mean
b) Median
c) Mode
d) Range

(ix) Identify, which of the following is an example of data measured on an ordinal scale?

a) Eye color (blue, green, brown)
b) Temperature in Celsius
c) Rankings in a race (1st, 2nd, 3rd)
d) Weight of an object

(x) Identify Which type of variable is "weight of a person"?

a) Nominal
b) Ordinal
c) Interval
d) Ratio

(xi) Choose the correct option. Bag contain 10 black and 20 white balls, One ball is drawn at random. Evaluate the probability that ball is black.

a) 1
b) 1/3
c) 2/3
d) 0

(xii) Identify the formula for Bayes' theorem is:

a) P(A|B) = P(B|A) * P(A) / P(B)
b) P(A|B) = P(A) * P(B) / P(A ∩ B)
c) P(A|B) = P(B|A) * P(A) / P(B|A) + P(B|¬A) * P(¬A)
d) P(A|B) = P(B|A) * P(A) + P(B|¬A) * P(¬A)

(xiii) A jar contains 10 red marbles and 15 blue marbles. If one marble is drawn at random, identify the probability of getting a red marble or a blue marble.

a) 10/25
b) 15/25
c) 25/35
d) 25/25

(xiv) Define Type 2 error.

a) False Positive
b) True Positive
c) False Negative
d) True Negative

(xv) Choose the characteristic that distinguishes random sampling from non-random sampling.

a) Sample size
b) Cost effectiveness
c) Probability of selection
d) Time required

Group-B

(Short Answer Type Questions) 3 x 5=15

2. A survey was conducted to analyze the number of books read by students in a month. The following data was collected: (3)

3, 5, 7, 2, 8, 6, 4

a) Calculate the mean number of books read by the students.

b) Calculate the standard deviation of the number of books read.

3. 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

4. There are 5 green 7 red balls. Two balls are selected one by one without replacement. Identify the probability that first is green and second is red. (3)

5. The students obtained the following marks in mathematics and statistics. Show that the rank correlation coefficient is 0.818. (3)

Marks in Mathematics	78	36	98	25	75	82	90	62	65	39
Marks in Statistics	84	51	91	60	68	62	86	58	53	47

6. Appraise the concept and significance of hypothesis testing. (3)

OR

Summarize null and alternative hypothesis briefly with examples. (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	17	14	2	10	15	10

Predict the mode of the frequency distribution.

8. In a class of 30 students, 18 are boys and 12 are girls. One student is chosen at random to be a monitor. Calculate the probability that the monitor is: a) A girl b) Not a boy (5)
9. Calculate the **median** for the following frequency distribution: (5)

Class	10-20	20-30	30-40	40-50	50-60
Frequency	5	10	12	8	5

10. Estimate the rank correlation coefficient. (5)

Marks in Accountancy	43	44	46	40	44	42	45	42	38	40	42	57
Marks in Statistics	29	31	19	18	19	27	27	29	41	30	26	10

11. Using the data below, compute the regression equation of Y on X. (5)

X	Y
6	9
2	11
10	5
4	8
8	7

12. **Three coins are tossed simultaneously.** (5)

1. **Evaluate the probability of getting at least one head?** (2 marks)
2. **Evaluate the probability of getting exactly two heads.** (3 marks)

OR

A bag contains 10 green marbles and 15 yellow marbles. If one marble is drawn at random and it is found to be yellow, calculate the probability that the next marble drawn is also yellow, assuming that the first marble is not replaced? (5)

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