BRAINWARE UNIVERSITY

Term End Examination 2024-2025
Programme – B.Com.(AFB)-Hons]-2023/B.Com.(AFB)-Hons]-2024
Course Name – Business Statistics
Course Code - BBF20001
(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)　Select the correct option. The weights of students in a college/ school is a

    a) Discrete Variable　　　　　　　　　　b) continuous variable
    c) Qualitative variable　　　　　　　　　d) None of these

(ii)　Select the correct option. Which of these represent qualitative data

    a) Height of a student　　　　　　　　　b) Liking or disliking of (500) persons of a product

    c) The income of a government servant in a city　　d) Yield from a wheat plot

(iii)　Select the correct option. While constructing Frequency Distribution, the number of classes used depends upon

    a) Range of Data　　　　　　　　　　　b) Number of Observation
    c) Size of Class　　　　　　　　　　　　d) None of These

(iv)　Select from the following Measure of Averages which is not based on all the values given in the data set

    a) Arithmetic Mean　　　　　　　　　　b) Geometric Mean
    c) Median　　　　　　　　　　　　　　　d) Mode

(v)　Identify the measure of central tendency that is most affected by extreme values (outliers)

    a) Unimodal　　　　　　　　　　　　　b) Bimodal
    c) Multimodal　　　　　　　　　　　　d) No mode

(vi)　If a data set has the same mean, median, and mode, it is likely to be:

    a) Skewed　　　　　　　　　　　　　　b) Symmetrical
    c) Bimodal　　　　　　　　　　　　　　d) None of these

(vii) Determine Which of the following is not a measure of central tendency

    a) Percentile   b) Quartile

    c) Standard deviation   d) Mode

(viii) Write the correct option: If the fourth order central moment is zero then the distribution is

    a) Leptokurtic   b) Pyrokurtic

    c) Platykurtic   d) Mesokurtic

(ix) Choose which of the following formula is used to find dispersion when we have an open-end classes for grouped data.

    a) Range   b) Standard deviation

    c) Mean deviation   d) Quartile deviation

(x) Select the correct option: In Correlation both variables are always

    a) Random   b) Non-Random

    c) Same   d) None of these

(xi) Select the correct option: Two regression lines are parallel to each other if their slope is

    a) Different   b) Same

    c) Negative   d) None of these

(xii) Identify the correct option: The best fitting trend is one for which the sum of squares of error is

    a) Zero   b) Minimum (Least)

    c) Maximum   d) None of these

(xiii) Examine if A and B are mutually exclusive events , then

    a) $P(A \cap B) = P(A).P(B)$ b) $P(A \cap B) = P(A) + P(B)$

    c) $P(A \cap B) = 0$ d) None of these.

(xiv) Choose the correct option. Suppose three coins are tossed simultaneously, Calculate the chances of getting at least one head.

    a) 1/8   b) 7/8

    c) 2/8   d) 4/8

(xv) In a class, 60% of students are girls and the rest are boys. If 70% of the girls passed the exam and 80% of the boys passed, Calculate the probability that a randomly chosen student passed the exam.

    a) 0.6   b) 0.68

    c) 0.7   d) 0.74

Group-B
(Short Answer Type Questions)   3 x 5=15

2. If two lines of regression are x+4y+1=0 and 4x+9y+7=0 then what is the value of y when x=-3.   (3)

3. The weights (in kg) of 6 students are 50, 55, 60, 65, 70, and 75. Calculate the coefficient of variation (CV).   (3)

4. For the following data, compute the harmonic mean: (3)

X	2	5	7	10	12

f	3	5	4	6	2

5. Select a suitable chart to represent cumulative frequency of less than type for the following data (3)

Family Size	2	3	4	5	6	7	8	9	10
Frequency	9	12	21	26	17	9	3	2	1

6. Let E and F are events of a experiment such that P(E) = 3/10 P(F) =1/2 and P(F|E) =2/5. (3)
   Estimate the value of P(E ∩ F)

OR

A standard deck of playing cards contains 52 cards. Estimate the probability of drawing a (3)
heart from the deck.

Group-C
(Long Answer Type Questions)   5 x 6=30

7. Calculate the correlation coefficient: (5)

x	10	12	13	16	17	20	25
y	19	22	24	27	29	33	37

8. Write short notes on skewness and kurtosis.   (5)

9. Represent the cumulative frequency of the following data using suitable diagram.   (5)

Weight(in kg.)	50-52	53-56	57-58	59-70	71-75
Number of persons	4	15	20	12	3

10. Estimate the arithmetic median and mode of the frequency distribution given below.   (5)

Class limit	1-10	11-20	21-30	31-40	41-50	51-60	61-70	Total
Frequency	8	15	25	20	16	10	6	100

11. Estimate the missing frequency (f) if the mean of the following frequency distribution is (5) 50.

Class Interval	Frequency (f)
0 - 20	5
20 - 40	8
40 - 60	f
60 - 80	12
80 - 100	7
Total frequency N=40	

12. Three urns are there containing white and black balls; first urn has 3 white and 2 black (5) balls, second urn has 2 white and 3 black balls and third urn has 4 white and 1 black balls. Without any biasing one urn is chosen from that one ball is chosen randomly which was white. Estimate the probability that it came from the third urn.

OR

It is observed that 50% of mails are spam. There is a software that filters spam mail (5) before reaching the inbox. It accuracy for detecting a spam mail is 99% and chances of tagging a non-spam mail as spam mail is 5%. If a certain mail is tagged as spam Estimate the probability that it is not a spam mail.

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