17457

BRAINWARE UNIVERSITY

Term End Examination 2024-2025
Programme – BBA LL.B.-2021/BBA LL.B.-2022/BBA LL.B.-2023/BBA LL.B.-2024
Course Name – Business Statistics
Course Code - BBALLB201
(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) The following data show the number of hours worked by 160 statistics students.

Number of Hours	Students
0 - 9	40
10 - 19	50
20 - 29	70

Identify the class width for this distribution

a) 9
b) 10
c) 11
d) Varies from class to class

(ii) The following data show the number of hours worked by 160 statistics students.

Number of Hours	Students
0 - 9	40

10 - 19	50
20 - 29	70

Select the correct option: The number of students working 19 hours or less is

a) 40

b) 50

c) 90

d) 100

(iii) Identify the correct option: A set of all possible outcomes of an experiment is called

a) Combination

b) Sample point

c) Sample space

d) Compound event

(iv) Select the correct option. The first hand and unorganized form of data is called

a) Secondary data

b) Primary Data

c) Organized Data

d) None of these

(v) Select the correct option: The probability of getting a sum 9 from two throws of dice is

a) 1/3

b) 1/9

c) 1/12

d) 2/9

(vi) Select the correct option. When data are collected in a statistical study for only a portion or subset of all elements of interest we are using:

a) A sample

b) A parameter

c) A population

d) Both A parameter and A population

(vii) A speaks truth in 75% of cases and B in 80% of cases. Select the percentage of cases are they likely to contradict each other, narrating the same incident

a) 25%

b) 35%

c) 45%

d) 50%

(viii) Select the correct option. The graph of cumulative frequency from the following is

a) Bar chart

b) Frequency polygon

c) Ogive

d) Histogram

(ix) Choose the correct option. Consumer price index indicates

a) Rise

b) Fall

c) Both Rise and Fall

d) Neither Rise or Fall

(x) Select the correct option. The number of accidents in a city during 2010 is

a) Discrete variable

b) Continuous variable

c) Qualitative variable

d) Constant

(xi) If the standard deviation of the values 2, 4, 6, 8 is 2.58, then calculate the standard deviation of the values 4, 6, 8, 10

a) 0

b) 2.58

c) 5

d) 4.66

(xii) Select the correct option. $Var(2X+3)=$

a) $2Var(X)$

b) $4Var(X)$

c) $2Var(X) 3$

d) None of these

(xiii) Select the correct option: The graph of time series is called

a) Histogram

b) Straight line

c) Historigram

d) Ogive

(xiv) Choose the correct option. The index for the base period is always taken as

a) 200

b) 100

c) 0

d) 1

(xv) Choose the correct option. The _____ index number has a wide scope

a) Quantity Index

b) General Index

c) Price Index

d) Special Index

Group-B
(Short Answer Type Questions)

3 x 5=15

2. Draw a histogram of the following frequency distribution of heights of 100 college students: (3)

Height(cm)	141-150	151-160	161-170	171-180	181-190
Frequency	5	16	56	19	4

3. (3)

Illustrate a Simple Bar chart diagram to represent year wise (5 yearly) students input (in thousand) in a large Indian University.

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

4. Illustrate a straight line trends in least square method from the following: (3)

Years	1980	1981	1982	1983	1984	1985
Average production per month ('000) tons	20	22	21	23	22	24

5. Explain the uses of index numbers. (3)

6. Calculate the average seasonal movements by the method of quarterly total (average) for (3) the following series:

Total production of maruti Cars (in 100 nos.)

Years	I	II	III	IV
		Quarters		
1988	32	34	37	41
1989	34	38	27	33
1990	41	35	35	40

OR

Calculate a straight line trend to the given time series (3)

Year	1980	1981	1982	1983	1984	1985	1986	1987
Average production per month (in 1000 tons)	20	22	21	23	22	24	23	25

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

7. Using the following data establish that Fisher's ideal formula satisfies the factor Reversal (5) test.

Commodity	Price		Number of unit	
	Base Period	Current Period	Base Period	Current Period
		Per Unit		
M	6	10	50	56
N	2	2	100	120
Q	4	6	60	60
R	10	12	30	24
S	8	12	40	36

8. Age at death of 50 persons of a town are as follows: (5)

36, 48, 50, 45, 49, 31, 50, 48, 43, 42, 37, 32, 40, 39, 41, 47, 45, 39, 43, 47, 38, 39, 37, 40, 32, 52, 56, 31, 54, 36, 51, 46, 41, 55, 58, 31, 42, 53, 32, 44, 53, 36, 60, 59, 41, 53, 58, 36, 38, 60.

(a) Tabulate the data in a frequency distribution in 10 number of class intervals, and
(b) Observe the percentage frequency in each class interval;

(c) Also observe the class boundaries and cumulative frequencies from below and from above.

9. When the cost of tobacco was increased by 50% a certain hardened smoker, who maintained his former scale of consumption, said that the rise had increased his cost of living by 5%. Calculate the percentage of his cost of living was due to buying tobacco before the change in price. (5)

10. The following table represents the weights (in kg) of 60 students in a class: (5)

Weight (kg)	40-50	50-60	60-70	70-80	80-90	90-100
Frequency	5	8	15	20	7	5

Calculate the Quartile Deviation (Q.D.).

11. Explain the trend by four yearly moving average of the following. (5)

Year	1960	1961	1962	1963	1964	1965	1966	1967
Value	105	125	115	100	90	85	95	90

Year	1968	1969	1970	1971	1972	1973	1974
Value	85	80	95	90	85	82	80

12. Calculate Karl Pearson's coefficient of correlation between per capita national income and per capita consumer expenditure from the data: (5)

Year	Per capita national income	Per capita consumer expenditure
1980	249	237
1981	251	238
1982	248	236
1983	252	240
1984	258	245
1985	269	255
1986	271	254
1987	272	252
1988	280	258
1989	275	251

OR

(5)

Calculate the correlation coefficient:

x	1	2	3	4	5
y	6	8	11	9	12

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