BRAINWARE UNIVERSITY

Term End Examination 2023
Programme – BBA LL.B.-2022
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) Select which of the following is not based on all the observations?
a) Mean b) Median
c) Mode d) None of these

(ii) Select from following: The number of accidents in a city during 2010 is
a) Discrete variable b) Continuous variable
c) Qualitative variable d) Constant

(iii) A perfect negative correlation is explained by
a) 0 b) +1
c) -1 d) none of these

(iv) Largest value is 60 and smallest value is 40 and number of classes desired is 5 then, select the class interval as
a) 20 b) 4
c) 25 d) 15

(v) The first moment about mean is always identified as
a) 0 b) 1
c) Negative d) None of these

(vi) The Coefficient of Correlation between X and X is explained by
a) -1 to +1 b) +1
c) -1 d) none of these

(vii) Determine from following: Two regression lines are parallel to each other if their slope is
a) Different b) Same
c) Negative d) None of these

(viii) The degree of peakedness is identified as
a) Dispersion b) Skewness
c) Symmetry d) Kurtosis

(ix) The weights of students in a college/ school is recognized as
a) Discrete Variable b) Continuous variable
c) Qualitative variable d) None of these

(x) A time series is predicted as
a) Short-term variations b) Long-term variations
c) Irregular variations d) All of these

(xi) Subset of selected population is recalled as
a) descriptive portion b) elementary portion
c) inferential portion d) Sample

(xii) If the standard deviation of the values 2, 4, 6, 8 is 2.58, then the standard deviation of the values 4, 6, 8, 10 is examined as
a) 0 b) 2.58
c) 5 d) 4.66

(xiii) Choose from the following: Var(2X+3)=?
a) 2Var(X) b) 4Var(X)
c) 2Var(X)+3 d) None of these

(xiv) If P(A)=0.2, P(B)=0.4, P(AUB)=0.6, then identify the events A, B are
a) independent b) mutually exhaustive
c) mutually exclusive d) none of these

(xv) An index number illustrated for a single commodity is called

a) Composite Index
b) Simple Index
c) Index
d) None of these

Group-B

(Short Answer Type Questions) 3 x 5=15

2. Describe with suitable examples the use of statistical methods in business. (3)

3. (3)

Observe the missing frequencies in the following distribution, when it is known that A.M.=11.09

Class Limits	9.3-9.7	9.8-10.2	10.3-10.7	10.8-11.2	11.3-11.7	11.8-12.2	12.3-12.7	12.8-13.2	Total
Frequency	2	5	f_3	f_4	14	6	3	1	60

4. Establish that the correlation coefficient does not depend on the origin or scale of the observations. (3)

5. Describe the various components of time series. (3)

6. The A.M. calculated from the following frequency distribution is known to be 72.5. (3)
Decide the value of x:

Classes	30-39	40-49	50-59	60-69	70-79	80-89	90-99
Frequency	2	3	11	20	X	25	7

OR

Evaluate the mode from the following distribution: (3)

class	10-15	15-20	20-25	25-30	30-35
frequency	6	9	11	7	7

Group-C

(Long Answer Type Questions) 5 x 6=30

7. The students obtained the following marks in mathematics and statistics. Calculate the rank correlation coefficient (5)

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

8. A fair coin is tossed 3 times in succession. Show that the events ‘first toss gives a head’ and ‘second toss gives a head’ are independent. (5)

9. Describe the two types of ‘Ogive’ with figures and examples (5)

10. Find the mean and the standard deviation of the first n natural numbers. (5)

11. Calculate the correlation coefficient: (5)

x	63	60	67	61	69	70
y	61	65	64	63	68	63

12. Evaluate the quantity index number using Fisher's formula for the following data and show that it satisfies the time reversal test. (5)

Commodity	1980		1981	
	Price	Quantity	Price	Quantity
x	6	70	8	120
y	8	90	10	100
z	12	140	16	280

OR

(5)

Using the Food index and the information given below, evaluate the cost of living index number.

Group	Food	Clothing	Fuel & Light	Rent & Rates	Misc
Index	-	310	220	150	300
Weight	60	5	8	9	18

What is a 'seasonal index'?

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