BRAINWARE UNIVERSITY

Term End Examination 2023-2024
Programme – B.Com.(AFB)-Hons]-2023
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) Choose from given options, the exact period of using the word statistics-
a) a decade b) a century
c) two centuries d) five centuries

(ii) Name the greatest contributors In the development of statistical methods.
a) Economists b) Mathematicians
c) Businessmen d) Scientists

(iii) Choose the name of real giant in the development of statistics.
a) Fisher b) Gauss
c) Bowley d) Karl Pearson

(iv) Define correct nature of statistics.
a) Art b) Science
c) Both Art and Science d) none of these

(v) State factors on which scope of the survey depends.
a) the objective b) availability of time
c) resources d) all of these

(vi) Show the units of analysis includes in statistics.
a) rates b) ratios and percentage
c) coefficients d) none of these

(vii) Deonstrate the use of Secondary data in statistical analysis.
a) should never be used b) should be used after careful scrutiny
c) no scrutiny is required d) in scrutiny name of the person collected it only to be seen

(viii) Infer the Number of questions that are included in questionaaire.

a) 5
b) 20
c) 15
d) as small as possible keeping in view the purpose of survey

(ix) Primary data are always

a) more reliable than secondary data
b) less reliable compared to secondary data
c) depends on the care with which data have been collected
d) depends on the agency collecting the data

(x) Classification is the process of arranging data in

a) different columns
b) different rows
c) different columns and rows
d) grouping of related facts in different classess

(xi) Apply your concepts to calculate Mid point of a class.

a) adding upper and lower limits by 2
b) by deducting upper limits from lower limits
c) by dividing the difference of upper limit and lower limit by 2
d) by adding upper limit and lower limit and dividing it by 2

(xii) Identify from the given options the correct one where Sum of the deviations of individual observations is zero.

a) mode
b) median
c) geometric mean
d) none of these

(xiii) Identify average not affected by extreme observations

a) mode
b) median
c) geometric mean
d) arithmetic mean

(xiv) Identify positional measure of central tendency

a) geometric mean
b) median
c) harmonic mean
d) arithmetic mean

(xv) Choose the best measure of average for qualitative data

a) arithmetic mean
b) geometric mean
c) median
d) none of these

Group-B

(Short Answer Type Questions) 3 x 5=15

2. From your basic understanding, explain the concept of mean absolute deviation and show its steps of calculation. (3)

3. Explain steps of estimating correlation coefficient using Karl Pearsons method. (3)

4. Calculate standard deviation of the following observations (3)

3, 6, 7, 2, 8, 4

1.5. *Calculate mean value of following data* (3)

Xi	*10*	*15*	*25*	*40*	*50*
Fi	*4*	*6*	*10*	*7*	*3*

6. **Prove that Sigma(fixi - $\bar{x}$bar)=0) = 0** (3)

OR

Critically evaluate the criteria's required for judging useful method of central tendency calculation (3)

Group-C

(Long Answer Type Questions) 5 x 6=30

7. Define equally likely cases and independent events with suitable example. (5)

8. **Calculate mean deviation from mean from the following data:** (5)

Class	**0 -10**	**10 -20**	**20 -30**	**30-40**	**40 -50**	**50 -60**	**60 -70**
Frequency	**8**	**12**	**10**	**8**	**3**	**2**	**7**

9. In 2010 out of total 2000 workers in a factory, 1550 were members of trade union. The number of women workers employed was 250, out of which 200 did not belong to any trade union. (5)
In 2020, the number of union workers was 1725 of which 1600 were men. The number of non-union workers was 380, among which 155 were women.

10. Three unbiased coins are tossed. Calculate the probability of getting at most one head (5)

11. **The monthly profits in rupees of 100 shops are distributed as follows:** (5)

Profit per shop	**0 - 100**	**100 - 200**	**200 - 300**	**300 - 400**	**400 - 500**	**500 – 600**
No. of shops	**12**	**18**	**27**	**20**	**17**	**6**

Judge Modal value using appropriate diagram.

12. 1. Number of passengers carried on each of 50 journeys by an aircraft with a sitting capacity of 100. (5)

10	18	61	63	72	71	82	25	45	66	68	95	46
31	41	56	33	78	65	72	74	89	67	68	32	83
49	35	37	43	55	57	69	72	84	69	92	75	
68	75	42	45	39	11	37	38	62	89	72	92	

a. If 65 passengers is smallest profitable load, then decide whether this journey is profitable or not.

Show average capacity utilized

OR

Critically evaluate mode as a measure of central tendency (5)