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## BRAINWARE UNIVERSITY

Term End Examination 2023  
Programme – BBA(HM)-2022  
Course Name – Statistics for Business Decisions  
Course Code - BBAHMC202  
( 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 the correct option. In chain base method, the base period is
- a) Fixed  
b) Not fixed  
c) Constant  
d) Zero
- (ii) Select the correct option. Which of the following is not a measure of central tendency?
- a) Percentile  
b) Quartile  
c) Standard deviation  
d) Mode
- (iii) Select the correct option. Standard deviation is calculated from the Harmonic Mean (HM)
- a) Always  
b) Sometimes  
c) Never  
d) None of these
- (iv) Select the correct option. Subset of selected population is called
- a) descriptive portion  
b) elementary portion  
c) inferential portion  
d) sample
- (v) Choose the correct option. An index number computed for a single commodity is called
- a) Composite Index  
b) Index  
c) Simple Index  
d) None of these
- (vi) Select the correct option. In a Pie calculate the angles for each sectors by the following formula
- a)  $\frac{\text{component Part}}{\text{Total}} \times 100$   
b)  $\frac{\text{component Part}}{\text{Total}} \times 360^\circ$

- c)  $\frac{\text{component Part}}{\text{Total}} \times \pi$  d) None of these
- (vii) Select the correct option. Questionnaire survey method is used to collect  
 a) Secondary data b) Qualitative variable  
 c) Primary data d) None of these
- (viii) Select the correct option. Population census is conducted through  
 a) Sample survey b) Accounting  
 c) Investigation d) Complete enumeration
- (ix) Choose the correct option. Suppose two coins are tossed simultaneously, evaluate the chances of getting at least one tail?  
 a) 1/7 b) 2/7  
 c) 3/7 d) 4/7
- (x) Select the correct option. A Histogram is a set of adjacent  
 a) Squares b) rectangles  
 c) Triangles d) none of these
- (xi) Select the correct option. If  $b_{xy} < 0$  and  $b_{yx} < 0$ , then evaluate r is  
 a)  $> 0$  b)  $< 0$   
 c)  $= 0$  d) None of these
- (xii) Select the correct option. The grouped data is also called  
 a) Raw Data b) Primary Data  
 c) Secondary data d) Qualitative data
- (xiii) Choose the correct option. Consumer price index indicates  
 a) Rise b) Fall  
 c) Both Rise and Fall d) Neither Rise or Fall
- (xiv) Select the correct option. When regression line passes through the origin then  
 a) Regression coefficient is zero b) Correlation is zero  
 c) Intercept is zero d) Association is zero
- (xv) 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

**Group-B**

(Short Answer Type Questions)

3 x 5=15

2. Describe advantages of mode in statistics. (3)
3. Describe the uses of index numbers. (3)

4. Show that the standard deviation from the following table is 13.56: (3)

x	10	20	30	40	50	60	Total
f	9	18	25	27	14	7	100

5. Calculate price index numbers from the following data, using (i) weighted aggregative formula and (ii) weighted arithmetic mean of price relatives formula: (3)

Price (Rs.) per unit

Commodity	Unit	Base Price	Current Price	Weight
M	Quintal	80	110	14
N	Kg.	10	15	20
Q	Dozen	40	56	35
R	Litre	50	95	15
S	Lb.	12	18	16

6. Calculate index numbers by the (i) method of aggregates, (ii) method of relatives (using arithmetic mean) from the following: (3)

Commodity	Base price	Current price
Rice	35	42
Wheat	30	35
Pulse	40	38
Fish	107	120

**OR**

A four-digit number is formed by the digits 1, 2, 3, 4 with no repetition, Evaluate the probability that the number is (i) odd, (ii) divisible by 4. (3)

**Group-C**

(Long Answer Type Questions)

5 x 6=30

7. Describe the functions of statistics. (5)

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) Obtain the percentage frequency in each class interval;
- (c) Also find the class boundaries and cumulative frequencies from below and from above

9. Draw a pie chart diagram to represent the following data relation to cost of manufacture: (5)

Item	Cost in Rs.
Cost of Materials	38400
Cost of Labour	30720
Direct expenses	11520
Factory Overhead	15360

10. The probability that a contractor will get a plumbing contract is  $\frac{2}{3}$  and the probability that he will not get an electric contract is  $\frac{5}{9}$ . If the probability of getting at least one contract is  $\frac{4}{5}$ , show that the probability that he will get both the contracts is  $\frac{14}{45}$ . (5)

11. Explain the trend by five 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. Evaluate the median: (5)

Weekly wages	60-69	70-79	80-89	90-99	100-109	110-119	Total
No of workers	5	15	20	30	20	8	98

Evaluate the quartile deviation and its coefficient.

(5)

Height	125- 135	135- 140	140- 155	155- 165	165- 175	175- 185
No. of students	2	7	24	27	13	3

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