

B.Com. (Part—II) Semester—IV Examination
BUSINESS STATISTICS

Time : Three Hours]

[Maximum Marks : 80

SECTION—A

Note :—(1) Answer **ALL** the questions.

(2) Choose the correct answer and rewrite it.

1. Statistics is an :

(a) Art	(b) Art and Science
(c) Science	(d) None of the above
2. Following is the function of statistics :

(a) To compare	(b) To forecast
(c) To collect and analyse data	(d) All of the above
3. Data are classified into the categories :

(a) Primary	(b) Primary and Secondary
(c) Secondary	(d) None of these
4. Classification is the first step in :

(a) Distribution	(b) Tabulation
(c) Representation	(d) Collection
5. The following formula of construction of Index No. is constructed by one of the following person :

$$\text{Index No.} = \frac{Sp_1q_1}{Sp_0q_1} \times 100$$

- | | |
|--------------|-------------|
| (a) Laspeyre | (b) Fisher |
| (c) Marshall | (d) Paasche |
6. $\Sigma IW = 7711$ and $\Sigma W = 62$ the weighted Index No. will be :

(a) 12.4	(b) 124
(c) 128	(d) 1.24
 7. Fisher developed one of the following formula for calculation of Index No. :

(a) $\frac{Sp_1}{Sp_0} \times 100$

(b) $\frac{Sp_1q_1}{Sp_0q_1} \times 100$

(c) $\frac{Sp_1q_1}{Sp_0q_0} \times 100$

(d) $\sqrt{\frac{Sp_1q_0}{Sp_0q_0} \times \frac{Sp_1q_1}{Sp_0q_1} \times 100}$

8. If $\Sigma p_1 = 1448$ and $\Sigma p_0 = 1040$. The Index No. will be :
 (a) 1.39 (b) 0.72
 (c) 139.23 (d) 71.82
9. If the mean is 1943.71 and $\Sigma m = 13606$, the value of 'n' will be :
 (a) 10 (b) 7
 (c) 9 (d) 8
10. If $\Sigma m = 972$ and $n = 10$, the average will be :
 (a) 97.2 (b) 9720
 (c) 9.72 (d) 972
11. If the repeated item is 1, 5, 4, 5, 2, 5 the mode will be :
 (a) 1 (b) 4
 (c) 5 (d) None of the above
12. If $n = 104$, then the value of Median will be :
 (a) 50.5 (b) 52.5
 (c) 26 (d) 26.5
13. S.D. = 3.5, $N = 10$, $\Sigma m = 145$. The value of C.V. is :
 (a) 20.13% (b) 24.14%
 (c) 35% (d) 38.13%
14. If $\Sigma d^2 = 488$, $\Sigma m = 300$, $n = 12$, the S.D. is :
 (a) 6.38 (b) 64
 (c) 6.92 (d) 1.27
15. If the value of $a = 41.58$, $z = 45$ and S.D. = 15.30, the value of J will be :
 (a) 0.22 (b) -3.42
 (c) -0.22 (d) 3.42
16. $H = 90$, $L = 10$ co-efficient of Range is :
 (a) 0.80 (b) 0.70
 (c) 0.79 (d) 80
17. The range of the correlation co-efficient is :
 (a) -1 to 0 (b) 0 to 1
 (c) -1 to 1 (d) None of the above
18. When the two variables vary in the opposite direction it is called :
 (a) Negative correlation (b) Positive correlation
 (c) Both (a) and (b) (d) None of the above
19. In correlation both variables are always :
 (a) Random (b) Non-Random
 (c) Same (d) None of the above
20. A perfectly negative correlation is signified by :
 (a) 0 (b) 1
 (c) 0.5 (d) -1

20×1=20

SECTION—B

1. Explain the functions of statistics (any four). 4

OR

Explain the secondary data. 4

2. Compute the chain index number from the following :

Year	:	2013	2014	2015	2016	2017	
Production	:	120	140	136	150	160	4

OR

Construct the Index number by Laspeyre's formula :

$$\sum p_1 q_0 = 174, \sum p_0 q_0 = 146 \quad 4$$

3. Find out Mode for the following information :

$$M = 21.05 \quad a = 22 \quad 4$$

OR

Find out the Arithmetic average from the following series :

Size	:	8	9	10	11	12	13	14	
Frequency	:	5	10	7	12	18	6	5	4

4. Find out the co-efficient of skewness :

$$a = 123.14 \quad z = 123 \quad SD = 3.60 \quad 4$$

OR

Find out the S.D. :

$$\begin{aligned} \sum f dx^2 &= 4607 & \sum f dx &= 311 \\ i &= 10 & n &= 811 \end{aligned} \quad 4$$

5. Find out the probable error based on given information :

$$r = .98 \quad n = 10 \quad 4$$

OR

Find out the co-efficient of correlation :

$$\begin{aligned} \sum f dx dy &= 110 & \sum f dx &= 152 & \sum f dy &= 56 \\ \sum f dx^2 &= 296 & \sum f dy^2 &= 124 & n &= 100 \end{aligned} \quad 4$$

SECTION—C

1. Explain the meaning and characteristics of statistics. 8

OR

Explain the sources of primary data. 8

2. Find out the Index Number by Bowley's formula :

Group	Prices		Quantity	
	2010	2016	2010	2016
Food	12	20	50	120
Rent	10	12	100	80
Arhar Dal	14	15	60	70
Milk	16	18	30	50
Cloth	18	20	40	40

OR

Construct the Laspeyre's Index No. from the following data :

Commodity	Year 2017		Year 2018
	Quantity	Price (Rs.)	Price
E	10 meters	6.00/meter	5.00/meter
F	30 units	2.00/unit	1.80/unit
G	70 kgs	4.00/kg	3.90/kg
H	6 units	1.20/unit	1.00/unit
I	4 Rooms	40.00/room	35.00/room

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3. Find out the Arithmetic Mean from the following series :

Class	Frequency
More than 100	100
More than 200	97
More than 300	78
More than 400	54
More than 500	32
More than 600	13
More than 700	7

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OR

Calculate the median score from the given data :

Score more than :	60	80	100	120	140	160
No. of candidates :	53	51	43	34	24	8

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4. Find out the S.D. :

$$m = 83, 85, 87, 84, 80, 90, 86, 82, 78, 45$$

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OR

Find out the Range and Co-efficient of Range :

Age in years	No. of persons
10-20	15
20-30	15
30-40	23
40-50	22
50-60	25
60-70	10
70-80	5
80-90	10

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5. The following table gives the Ages of Husband and Wife. Calculate the co-efficient of correlation by Karl Pearson's formula :

Age of Husband :	24	26	27	28	30	31	34	35	36	39
Age of Wife :	18	22	23	25	27	27	28	29	30	31

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OR

In the distribution consisting of 10 observations the value of co-efficient of correlation is 0.98. Do you think that the co-efficient of correlation is significant ?

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