Reg. No. | | | | | | | | | |

BBABMC 234

Choice Based Credit System III Semester B.B.A. Degree Examination, April/May 2022
(2020-2021 Batch Onwards)
BUSINESS STATISTICS AND MATHEMATICS
Group – I

Time : 3 Hours Max. Marks : 80

Instructions : *1) Non programmable **calculators** may be used.*
*2) Logarithm tables will be provided on **request**.*

SECTION – A

Answer **any 4** questions. **Each** question carries **4** marks. **(4×4=16)**

1. What is classification ? Mention different types of classification.

2. What is correlation ? Explain positive correlation with example.

3. Draft a blank table to show the population of a town in three different years (2018-19, 2019-2020, 2020-2021) according to literacy and Religion (Hindu, Muslim and Christian.)

4. Compute Arithmetic mean from the following data :

X	53	58	63	68	73	78
F	10	22	44	14	8	2

5. The marked price of an article is Rs. 13,000. Calculate the selling price after 6% trade discount and 3% cash discount.

6. Find the equated due date of payments of the following bills.
   Rs. 250 due on 10th June.
   Rs. 400 due on 20th July
   Rs. 1,000 due on 11th Aug.

7. In a bivariate data the two regression co-efficients are – 7.3 and – 0.11. Find the correlation co-efficient.

P.T.O.

SECTION – B

Answer **any 4** questions. **Each** question carries **8** marks. **(4×8=32)**

8. What is time series ? Explain the different components of time series.

9. Calculate standard deviation from the following data :

Class	Frequency
0 – 10	21
10 – 20	19
20 – 30	18
30 – 40	15
40 – 50	13
50 – 60	8
60 – 70	4
70 – 80	2

10. Calculate Spearman's Rank correlation.

X	Y
14	84
16	78
17	70
18	75
19	66
20	67
21	62
22	58
23	60
20	70

11. Calculate four yearly moving averages for the following time series.

Year	Value
2008	110
2009	104
2010	98
2011	105
2012	109
2013	129
2014	115
2015	110
2016	114
2017	122
2018	130
2019	127

12. a) A sum of Rs. 5,000 is deposited for 4 years at 12% simple interest p.a. What would be the amount ?

    b) Divide Rs. 1,800 among A and B in the ratio of 3 : 5.

13. a) Find the present value of perpetuity due of Rs. 6,000 at 15% p.a.

    b) Calculate the present value of an annuity immediate Rs. 9,000 for 6 years the interest being 5% p.a. compounded annually.

14. Find the compound interest on a sum of Rs. 8,000 for 2 years at the rate of 8% p.a. compounded half yearly.

SECTION – C

Answer **any 2** questions. **Each** question carries **16** marks. **(2×16=32)**

15. Calculate Karl Pearson's co-efficient of correlation.

Age of women	Age of men			
	20 – 25	25 – 30	30 – 35	35 – 40
15 – 20	20	10	3	2
20 – 25	4	28	6	4
25 – 30	–	5	11	–
30 – 35	–	–	2	–
35 – 40	–	–	–	5

16. Calculate the two Regression equations from the data given below and estimate :

a) Expenditure of a person if their income is 300.

b) Income of a person if their expenditure is 200.

Income	Expenditure
280	150
460	340
520	480
250	220
320	250
450	400
290	200
340	350
600	520
700	600

17. The following are the figures of production in thousand quintals of a cement factory

Year	Production
2014	77
2015	81
2016	88
2017	94
2018	94
2019	96
2020	98
2021	99

a) Fit a straight line trend by the method of least squares.

b) Estimate the production for the year 2020.

18. Calculate Geometric mean and Harmonic mean from the following data :

Marks	Number of Students
10 – 20	4
20 – 30	6
30 – 40	10
40 – 50	7
50 – 60	3
60 – 70	5