Reg. No.

BCMCMC 131

**I Semester B.Com. Degree Examination,
October/November 2019**

(Choice Based Credit Scheme)

(2019-20 Batch onwards)

COMMERCE

Quantitative Techniques – I

Time : 3 Hours]   [Max. Marks : 80

Instructions :

1. *Non-programmable calculator may be used.*

2. *Logarithm tables will be provided on request.*

3. *Provide working notes wherever necessary.*

SECTION – A

Answer **any four** of the following :   **(4 × 4 = 16)**

1. What is Arithmetic Mean? State the properties of Arithmetic Mean.

2. What are cost of living index numbers? What are their uses?

3. The deposit of Rs. 5,000 grows at the rates of 6.5%; 7%; 7.75% and 8.75% in four subsequent years. Find the average growth rate.

4. A trader sells products at a profit of 75%. If the cost further increases by 25% but he sells at the same price. Find the decrease in the percentage of profit.

5. The selling price of the article sold is Rs. 3,240. The trade discount and cash discount are 20% and 10% respectively. Find the marked price.

6. 'A' can do a piece of a work in 10 days and 'B' can do the same work in 15 days. In how many days can the work be completed if 'A' and 'B' work together?

SECTION – B

Answer **any four** of the following :

$(4 \times 8 = 32)$

7. Explain the steps in the construction of Index numbers.

8. Compute Geometric Mean and Harmonic Mean of the following data :

Week days	Mon.	Tue.	Wed.	Thur.	Fri.	Sat.	Sun.
Expenditure (Rs.)	150	75	125	180	120	220	250

9. Compute price index number for the following data using (a) Simple average of price relatives by arithmetic mean (b) Simple average of price relatives by geometric mean.

Commodity	A	B	C	D	E
Price in 2017	5	10	8	3	4
Price in 2018	6	15	10	6	7

10. (a) A certain sum of money amount to Rs. 6,200 in 3 years and Rs. 7,000 in 5 years. Find the principal and rate of simple interest.

    (4)

    (b) Every month, a person deposits Rs. 2,000 in his R/D a/c for 2 years. At 5% simple interest p.a. what would be the amount at the end of second year.

    (4)

11. (a) Distribute Rs. 1,05,000 among A, B and C such that the ratios of shares of A and B is 5 : 4 and that of B and C is 3 : 2.

    (4)

    (b) Two numbers are in the ratio of 4 : 3. If 20 is deducted from both their ratio becomes 8 : 5. Find the numbers.

    (4)

12. 6 men each working 8 hrs a day can finish a work in 20 days. How many men are required to finish 5 times of the work in 15 days each working 8 hrs a day?

SECTION – C

Answer **any two** of the following :

$(2 \times 16 = 32)$

13. Calculate Mean, Median and Mode of the following :

Marks	30–40	40–50	50–60	60–70	70–80	80–90	90–100
No. of students	5	12	20	25	40	20	8

14. A factory produces two types LED bulbs 'A' and 'B'. A survey reveals the following :

Life in hours	200–400	400–600	600–800	800–1000	1000–1200	1200–1400
Model A	5	16	13	7	5	4
Model B	2	7	12	19	9	1

Find (a) which model has more average life (b) which model has more consistent?

15. Construct Laspeyre's, Paasche's and Fisher's index numbers for the following data :

Commodity	Price		Value	
	2017	2018	2017	2018
A	5	6	50	72
B	7	10	84	90
C	10	12	80	120
D	4	6	20	30
E	8	10	56	80

16. (a) At certain rate of interest compounded quarterly a sum doubles in 5 years. Find (i) Nominal rate of interest (ii) Effective rate of interest. **(8)**

(b) 5 men and 8 women can finish a work in 6 days but 8 men and 10 women can finish it in 4 days. How many days will 16 men and 20 women take to finish the work? **(8)**

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