

**First Semester B.B.M.(N) Degree Examination,
October/November 2019**

(Revised New Scheme)

Management

QUANTITATIVE ANALYSIS – I

Time : 3 Hours]

[Max. Marks : 80

Instructions to Candidates : Answers should be written in English only.

SECTION – A

1. Answer any **TEN** sub-questions from the following. Each sub-question carries 2 marks : **(10 × 2 = 20)**
- (a) What do you mean by finite sets?
 - (b) Define square matrix.
 - (c) What do you mean by linear equation?
 - (d) What is a prime number? Give an example.
 - (e) If $A = \begin{bmatrix} 4 & -1 \\ 3 & 0 \end{bmatrix}$ and $B = \begin{bmatrix} 7 & 2 \\ 6 & 1 \end{bmatrix}$. Find $A + B$.
 - (f) What is ratio?
 - (g) What do you mean by bankers gain?
 - (h) What is compound interest?
 - (i) Find the simple interest on Rs. 25,000 for 2 years 6 months at 12.5% p.a.
 - (j) Find the value of 'X', $10 : 25 :: X : 30$.
 - (k) What is geometric progression?
 - (l) What is a row matrix?



SECTION – B

Answer any **THREE** questions from the following. Each question carries 5 marks: **(3 × 5 = 15)**

- 2. Find the sum of all integers between 155 and 850 which are divisible by 6.
- 3. Solve formula method $3x^2 - 16x + 5 = 0$.

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4. If 8th term and 20th term of an AP are 22 and 46 respectively, find the AP and hence 18th term.
5. On what sum of money will be the simple interest amount to Rs. 42 in 3½ years of 3% p.a.
6. Monthly incomes of Ram and Shyam are in the ratio of 4 : 5 and their monthly expenses are in the ratio of 7 : 9. Their savings are Rs. 800 and Rs. 600 respectively. Find out their incomes.

SECTION – C

Answer any **THREE** questions from the following. Each question carries 15 marks : (3 × 15 = 45)

7. (a) Solve for x and y :
$$x + 2y - 4 = 0$$
$$3x + y - 7 = 0$$

(b) Find the difference between compound interest and simple interest on Rs. 6,000 for 5 years at 8% p.a.
8. (a) If $U = \{0, 3, 4, 5, 9, 8, 7, 1, 11\}$, $A = \{1, 5, 8, 7\}$, $B = \{3, 8, 11, 4\}$, $C = \{7, 1, 8, 0\}$. Find :
(i) $A' \cap B'$
(ii) $A \cup B$
(iii) $A \cup (B \cup C)'$
(iv) $A \cap (B \cup C)'$.
(b) If $A = \begin{bmatrix} 1 & 2 & -3 \\ 5 & 0 & 2 \\ 1 & -1 & 1 \end{bmatrix}$ and $B = \begin{bmatrix} 3 & -1 & 2 \\ 4 & 2 & 5 \\ 2 & 0 & 3 \end{bmatrix}$ find AB & $B+A$.
9. (a) Solve the equation using Cramer's rule
$$\begin{matrix} 2x + 3y - 1 = 0 \\ 3x - y + 2 = 0 \end{matrix}$$

(b) If the sum of three terms of a GP is 14 and their product is 64. Find the numbers.

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10. (a) Find present value, true discount, bankers discount and bankers gain on a bill of Rs. 10,500 due for 9 months at 12% p.a.
- (b) Two quantities are in the ratio 3 : 4 and if 10 is subtracted from each of them the reminders are in the ratio of 1 : 3. What are the two quantities?

11. (a) Find X, if
$$\begin{bmatrix} 1 & 2 & 3 \\ 2 & X & 3 \\ 3 & 4 & 3 \end{bmatrix} = 0.$$

- (b) A man borrowed Rs. 62,500 from a bank. After 2 years he paid Rs. 67,600 in full settlement of his debt. Find the rate off compound interest.

