Reg. No. ☐☐☐☐☐☐☐☐

II Semester B.Voc. Degree Examination, September - 2021
RETAIL MANAGEMENT
Mathematics for Business
(CBCS Scheme Freshers and Repeaters 2017-2018 and Onwards)
Paper : 2.3

Time : 3 Hours

Maximum Marks : 70

Instructions to Candidates:

Answer **ALL** sections. Answer should be written in **English** only.

SECTION - A

1. Answer any **FIVE** of the following. (5×2=10)

   a. What is negative index?

   b. Simplify $16^{\frac{3}{4}}$.

   c. Find the simple interest on Rs. 2000/- for 6 months at 8% p.a.

   d. What is a square matrix?

   e. Solve for x

      $x + 3(3x + 1) = 13$

   f. What is compound Ratio?

   g. Find the 5th term of the AP 15,18,21.........

SECTION - B

Answer any **THREE** of the following. Each carries **6** marks. (3×6=18)

2. Insert 3 Arithmetic Mean between 3 and 15.

3. Mr. Raghav has to receive Rs. 5,000/- at the end of each yer for years. Calculate the present value of the annuity assuming 10% p.a. rate of interest?

4. A man cycling at a speed of 16 kms per hour, reaches a town in 24 hours. How much time does he takes to cover the same distance if his speed increases to 20 kms per hour?

[P.T.O.

5. Solve by formula method

$$15x^2 + 16x - 15 = 0 \cdot$$

6. If $A = \begin{bmatrix} 1 & 5 & 6 \\ 7 & -2 & 8 \end{bmatrix}$, $B = \begin{bmatrix} 0 & -5 & 2 \\ 1 & 7 & 4 \end{bmatrix}$ find 3A+4B.

SECTION - C

Answer any **THREE** of the following. Each question carries **14** marks.   **(3×14=42)**

7. a. Solve by Cramers Rule

$$5x - 3y = 24$$
$$-7x + 11y = 14$$

   b. $A = \begin{bmatrix} 4 & 2 \\ 6 & 4 \end{bmatrix}$, $B = \begin{bmatrix} 8 & 4 \\ 6 & 2 \end{bmatrix}$ show that $(AB)^t = B^t A^t$

8. a. Solve by elimination method.

$$7x - 5y = 11$$
$$3x + 2y = 13$$

   b. The sum of two numbers is 107 and their difference is 17. Find the numbers.

9. a. A,B and C shared Rs. 2,800/- among them in the ratio of 5:6:3 respectively. If Rs. 200/- is added to each, what will be the new ratio?

   b. The monthly income of Amit and Arun are in the ratio of 7:8 and their monthly expenditure are in the ratio of 11:13. If each save Rs. 3,000/- per month, find their monthly income.

10. a. Find

   i. True Discount.

   ii. Bankers Discount and

   iii. Banker's Gain on a bill of Rs. 4,000/- drawn on 27th May for 4 months and was discounted on 19th July at 5% p.a.

   b. Find the amount of annuity if payments of Rs. 2,000/- is made at the end of each year for 4 years at the rate of 10% p.a.

11. a. Find the sum of the GP 3,12,48......upto 8 terms.

   b. If the 24th term of an AP is 280 and the 11th term of the same AP is 150, find the 20th term.