SE – 423

II Semester B.Voc. Examination, September 2020
(CBCS) (Repeaters)
(2016 – 17 & Onwards)
RETAIL MANAGEMENT
Paper – 2.3 : Mathematics for Business

Time : 3 Hours Max. Marks : 70

Instructions : *1) Answers should be written in **English only**.*
*2) Answer **all** Sections.*

SECTION – A

1. Answer **any five** of the following : **(5×2=10)**
   a) Simplify $x^{13} \div x^5$.
   b) Simplify $(5a^3b^4)^0$.
   c) Find G.M. between 4 and 16.
   d) What is a Bill of Exchange ?
   e) Divide ₹ 1,000 between 'A' and 'B' in the ratio 2 : 3.
   f) What do you mean by an equation ?
   g) What is a diagonal matrix ?

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SECTION – B

Answer **any three** of the following : **(3×6=18)**

2. Simplify $\left[\frac{(a+b)^{2/3}(a-b)^{3/2}}{\{(a+b)(a-b)^3\}^{1/2}}\right]^6$.

3. The 4^{th} term and 8^{th} term of a G.P. are 24 and 384 respectively. Find the 5^{th} term.

4. In what time will ₹ 1,200 amounts to ₹ 1,323 at 5% CI ?

5. If 40 men can do a piece of work in 90 days, how many men will be required to do the same work in 50 days ?

6. Solve for x : $\frac{2x-7}{2x-1} = \frac{x-3}{x+3}$.

P.T.O.

SECTION – C

Answer **any three** of the following : **(3×14=42)**

7. a) Find the sum of all integers between 200 and 500 which are divisible by 5.

   b) The sum of 3 numbers in G.P. is –21 and their product is 125. Find them.

8. a) Find (i) T.D. (ii) B.D. (iii) B.G. on a bill of ₹ 20,000 due 3 months hence 5% p.a.

   b) Find the rate of interest for ₹ 200 to earn ₹ 80 as SI for 5 years.

9. a) 30 Kg of commodity A and 26 Kg of commodity B together cost ₹ 7,100 and 25 Kg of commodity A and 13 Kg of commodity B together cost ₹ 5,050. Find the cost price of each.

   b) Solve by formula method : $9m^2 - 3m - 2 = 0$.

10. a) Two brothers have their annual income in the ratio of 8 : 5 while annual expenditure in the ratio of 5 : 3. If they save ₹ 1,200 and ₹ 1,000 p.a. respectively, find their annual incomes.

    b) If $A = \begin{bmatrix} 2 & 3 & 5 \\ 4 & 5 & 9 \end{bmatrix}$ $B = \begin{bmatrix} 8 & 2 & 7 \\ 12 & 3 & 9 \end{bmatrix}$. Find (i) A – B (ii) B – A.

11. a) If $A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$ $B = \begin{bmatrix} 2 & 4 \\ 3 & 2 \end{bmatrix}$. Find (i) AB′ (ii) A′B

    b) Solve by Cramer's rule :

    $3x - y = 6$

    $2x - 15 = -3y$.

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