Second Semester B.Com. Degree Examinations

APRIL/MAY 2019

(2018 - 19 Syllabus)

COMMERCE

Paper COB 430: MATHEMATICS FOR BUSINESS

Time: 3 hrs.] *[Max. Marks: 80*

SECTION - A

I. Answer any THREE questions. FIVE marks each: 3 x 5 = 15

1. Find the compound interest and amount of ₹ 45,670 for 8 years at 8.5% p.a.
2. Solve the equation by using formula method.
   $5x^2 - 13x + 8 = 0$
3. Solve the equation by using Cramer's rule.
   $5x - y = 9$
   $3x + y = 7$
4. Simplify: $\frac{3^3(27)^5 \times 9^{-4}}{3^2 \times 729}$
5. What is progression? Mention the types of progression.

SECTION - B

II. Answer any TWO **questions.** *TEN marks each:* 2 x 10 = 20

6. a) What is index? Write down the laws of Indices.
   b) Name any 5 types of sets with an example.
7. The difference between TD and BD on a bill due 6 months at 4% is ₹ 240. Find the TD, BD, PV, FV and amount receivable on a bill.
8. a) Solve the equation by using Elimination Method.
   $3x + 4y = 2$
   $5x + 7y = 0$
   b) Find the 10^{th} term of the A.P 3, 8, 13, ...
9. a) If $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$ $A = \{3, 4, 5, 6\}$ $B = \{1, 2, 3, 4\}$
   Find *i)* $A - B$ *ii)* B' *iii)* $A \cup B$
   b) Find the inverse of the matrix $A = \begin{bmatrix} 8 & 4 \\ 2 & 2 \end{bmatrix}$

Contd..... 2

SECTION – C

III. Answer any THREE questions. FIFTEEN marks each: 3 x 15 = 45

10. a) What do you mean by Matrix? Explain any 10 types of matrix with an example.

    b) Difference between ratio and proportion.

11. a) Solve the equation by using substitution method.

$$3x+2y=9$$
$$x+3y=10$$

    b) If $A=\begin{bmatrix}3 & 2\\ 4 & 2\end{bmatrix}$ $B=\begin{bmatrix}6 & 5\\ 3 & 2\end{bmatrix}$ Find AB

    c) Find the 3rd proportion from the following

$$60:120::x:480$$

12. a) If $U=\{0, 1, 2, 3, 4, 5, 6, 7, 8\}$, $A=\{1, 2, 5, 7\}$, $B=\{4, 5, 8, 0\}$ verify De – Morgan law.

    b) The sum of the 4 consecutive number is 166. Find them.

13. a) Solve the equation by using cross multiplication method.

$$6x-7y+12=0$$
$$7x-4y-11=0$$

    b) Find the 6th term of G.P of 5, 15, 45, ...?

    c) If $a = 2$, $d = 4$ and $n = 12$. Find the T_n and S_n?

14. a) A shop keeper made a profit of 15% on an article which sold for ₹ 23,000. Find the production cost.

    b) Mahesh is elder than Rudra by 5 years. After 5 years the ratio of their age would be 5:4. Find their present age.

    c) Prove that

$$\frac{5^{2n+3}+3(25)^n}{(25)^{n+2}-4(5)^{2n+3}}=\frac{128}{125}$$

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