DCBC202

Reg. No. | | | | | | | | |

II Semester B.Com./LSCM/TTM/IAS (NEP) Degree Examination,
October - 2022
COMMERCE
Business Mathematics
(CBCS Scheme 2022)

Time : 2½ Hours **Maximum Marks : 60**

Instructions to Candidates:

All the answers should be written in English only.

Section - A

Answer any **five** of the following questions. Each question carries **two** marks. **(5×2=10)**

1. a. What are Integers?

   b. Find the smallest number which, when divided by 12, 25 and 16 leaves 5 as remainder.

   c. Sovle for $x; 7(x-3)-3(x+4)=7$.

   d. If $A=\begin{bmatrix}1 & 2 & 3\\ 2 & 3 & 4\end{bmatrix}$ $B=\begin{bmatrix}0 & 1 & 2\\ 3 & 2 & 6\end{bmatrix}$ find A+B.

   e. Find the value of x if 10:40 = 50:x.

   f. Find the simple interest on Rs. 4,500 for 123 days at 5% p.a.

   g. Find the 20th term of AP 15, 12, 9, 6 .....

Section - B

Answer any **four** of the following questions. Each question carries **five** marks. **(4×5=20)**

2. Solve the equation.

   $x^2-8x+25=x(x-4)-25(x-5)-16$.

3. Simplify $\frac{(32)^6\times(27)^2}{(64)^5\times(9)^3}$.

4. Find the compound Interest on Rs. 5,000 at 5% p.a. for 4 years.

5. Is 512 a term of the series 1,2,4,8.....

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

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Section - C

Answer any **two** of the following questions. Each question carries **twelve** marks. (2×12=24)

7. a. Solve using Cramer's Rule

$$4x-2y=8$$
$$3x+y=-4$$ (6)

b. Mr. A gets a sum of money from his father and deposits in a bank. It amounted to Rs. 1,624 in four years and Rs. 1,736 in 6 years. Find the sum and rate of simple interest. (6)

8. a. Find the True discount, Banker's Discount and Banker's Gain on a bill of Rs. 10,900 due in 9 months at 5% per annum. (6)

b. A father is 30 years older than his son. After 4 years he will be 6 years more than twice the age of his son. Find their present age. (6)

9. a. A sum of 3 numbers in AP is 27 and their product is 585. Find the numbers. (6)

b. Evaluate $|A|=\begin{vmatrix}23 & 6 & 11\\ 36 & 5 & 26\\ 63 & 13 & 37\end{vmatrix}$. (6)

Section - D

Answer any **one** of the following questions which carries **six** marks. (1×6=6)

10. Mr. X wants to purchase a house for Rs 48,00,000 with a down payment of Rs. 8,00,000. If he can pay off the balance at 12% p.a. in 3 years, what is his EMI?

11. A company employs 60 workers from contractor A or B comprising of Age groups as under.

Category	I (25 years)	II (30 years)	III (40 years)
Contractor A	25	20	15
Contractor B	20	30	10

The rate of labour applicable for categories I, II and III are Rs. 1,200, Rs. 1,000 and Rs. 600 respectively. Using matrix find which contractor is preferable over the other and why.