19101924

BA DEGREE (CBCS) EXAMINATION, MAY 2019

Second Semester

B.A Corporate Economics Model III

Core Course - **EC2CRT06 - MATHEMATICS FOR ECONOMICS- II**

2017 ADMISSION ONWARDS

16A5EC1A

Maximum Marks: 80   **Time: 3 Hours**

Part A

Answer any **ten** questions.

Each question carries **2** marks.

1. Find the derivative of $\dfrac{x}{logx}$

2. If x+y=a find $\dfrac{dy}{dx}$

3. If y=e^{2x} find y_2

4. Discuss any method of solving assignment problems

5. How will you solve maximisation problems using assignment techniques?

6. Distinguish between basic feasible solution and optimal solution of a transportation problem

7. Write a short note on North west corner rule

8. What are unbalanced problems?

9. Define singular and non singular matrix

10. Define inverse of a matrix

11. Define subset of a set

12. Represent $(A \cup B)^c$ using venn diagram

(10×2=20)

Part B

Answer any **six** questions.

Each question carries **5** marks.

13. Find the differential coefficient of $(2x-1)^2$

14. Differentiate $(x-1)(3x-1)$

15. Distinguish between assignment problems and transportation problems

16. Explain MODI method of testing optimality of a solution

17. Reduce the matrix A= $\begin{pmatrix} 1 & 2 & 3 \\ 2 & 1 & 3 \\ 3 & 2 & 1 \end{pmatrix}$ to row equivalent canonical form and also find the rank of A

18. Explain elementary transformations

19. Different types of sets

20. Define union and intersection of sets with example

21. If A={1,2,3,5}, B={2,3,4}, C={1,2,3,4} find $(A \cap B) \times (A \cap C)$

(6×5=30)

Part C

Answer any **two** questions.

Each question carries **15** marks.

22. If y= $x^2 \log x$, prove that $x^2 y_2 - x y_1 = 2x^2$

23. A company is faced with the problem of assigning six different jobs.The costs are estimated as follows(hundreds of rupees)

	1	2	3	4	5
A	2.5	5	1	6	1
B	2	5	1.5	7	3
C	3	6.5	2	8	3
D	3.5	7	2	9	4.5
E	4	7	3	9	6
F	6	9	5	10	6

24. Find the initial feasible solution to the transportation problem using lowest cost entry method

	A	B	C	D	Supply
I	6	4	1	5	14
II	8	9	2	7	16
III	4	3	6	2	5
Demand	6	10	15	4	

25. Find the rank of the matrix A by reducing to its row equivalent Canonical form

$$\begin{pmatrix} 4 & 0 & 2 & 6 \\ 2 & 1 & 3 & 1 \\ 0 & 1 & 2 & -2 \end{pmatrix}$$

(2×15=30)