



QP CODE: 23125869



23125869

Reg No :

Name :

**B.A DEGREE (CBCS) REGULAR / IMPROVEMENT / REAPPEARANCE
EXAMINATIONS, MAY 2023**

Second Semester

B.A Corporate Economics Model III

Core Course - EC2CRT06 - MATHEMATICS FOR ECONOMICS- II

2017 ADMISSION ONWARDS

0BF1B122

Time: 3 Hours

Max. Marks : 80

Part A

*Answer any **ten** questions.*

*Each question carries **2** marks.*

1. Find the derivative of $(x^2 + 1)(x + 3)$
2. If $xy = c^2$ find $\frac{dy}{dx}$
3. If $y=e^{2x}$ find y_2 .
4. Distinguish between assignment and transportation problems.
5. What are unbalanced assignment problems?
6. Define basic feasible solution in transportation problem.
7. Write a short note on Vogel's method.
8. What are unbalanced problems?
9. Find the rank of the matrix $\begin{pmatrix} 5 & 2 & 1 \\ 0 & 1 & 3 \\ 2 & 1 & 0 \end{pmatrix}$
10. Define singular and non singular matrix.
11. Define subset of a set.
12. What do you mean by complement of a set?

(10×2=20)





Part B

Answer any **six** questions.

Each question carries **5** marks.

13.
$$\frac{2x^2 + 3x + 5}{\sqrt{x}}$$
 Find the derivative of

14. If $x^3 + y^3 = a^3$ find $\frac{dy}{dx}$

15. Solve the assignment problem

	1	2	3	4
A	10	12	19	11
B	5	10	7	8
C	12	14	13	11
D	8	15	11	9

16. Find the initial feasible solution to the transportation problem given below by North west corner rule .

	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	

17. Explain elementary transformations.

18. Find the inverse of the matrix $\begin{pmatrix} 2 & -3 \\ 4 & -1 \end{pmatrix}$

19. Explain subset and superset.

20. Represent $(A^c \cap B^c)$ using venn diagram.

21. If $A=\{2,3,5,8\}$, $B=\{1,2,3,4\}$, $C=\{1,3,5,7,8\}$ find $(A \times B) \cap (B \times C)$

(6×5=30)

Part C

Answer any **two** questions.

Each question carries **15** marks.





22. Differentiate $\frac{(3x + 1)(x - 2)}{(x - 1)(3x + 2)}$

23. Five different machines can do any of the five required jobs with different profits resulting from each assignment as shown below.

	A	B	C	D	E
1	30	37	40	28	40
2	40	24	27	21	36
3	40	32	33	30	35
4	25	38	40	36	36
5	29	62	41	34	39

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. Reduce the matrix $\begin{pmatrix} 1 & 2 & 0 & -1 \\ 3 & 4 & 1 & 2 \\ -2 & 3 & 2 & 5 \end{pmatrix}$ into canonical form.

(2×15=30)

