

Name. _____			Printed Pages:01	
Student Admn. No.: _____				
School of Business Backlog Examination, June 2023 [Programme: BBA] [Semester: II] [Batch:]				
Course Title: Business Mathematics			Max Marks: 100	
Course Code: F010203TA			Time: 3 Hrs.	
Instructions:	1. All questions are compulsory. 2. Assume missing data suitably, if any.			
SECTION-A (15 Marks) 5 Marks each				
1.	Describe inverse matrix? List any four properties of it	K2	CO1	5
2.	Explain simple interest and compound interest? Explain the concepts with hypothetical example.	K2	CO2	5
3.	If $A = \{1, 2, 3, 4\}$, then calculate the number of non-empty subsets of A?	K3	CO3	5
SECTION-B (40 Marks)		10 Marks each		
4.	Explain the different types of matrices with examples.	K2	CO1	10
5.	If a set A has 3 elements and B has 6 elements, then find the minimum number of elements in $A \cup B$.	K3	CO3	10
6.	Determine dy/dx , where $x = a(\theta + \sin\theta)$ and $y = a(1 - \cos\theta)$	K3	CO4	10
7.	Distinguish between the following: (a) Arithmetic mean and Harmonic mean (b) Additive and Multiplicative time series model OR	K4/	CO4	10
	The cost function for the manufacture of x number of goods by a company is $C(x) = x^3 - 9x^2 + 24x$. Find the level of output at which the marginal cost is minimum. Further, if the selling price of a unit is $2x^3 + 9x^2$, find the average profit.	K5	CO5	
SECTION-C (45 Marks)		15 Marks each		
8.	Determine dy/dx , when $y = (2x^2 - 6)(3x^3 + 8)$.	K5	CO4	15
9.	Radha gave ₹ 10,000 to Sanjay at 10% per annum interest. determine the amount after five years, if :	K5	CO2	15
	(i) Interest is simple interest. (ii) Interest is compound interest.			
10	Determine the compound interest on ₹ 8,000 for 5 years at 6% per annum; interest compounded : (i) Semi-annually (ii) Monthly In compound interest table value of $(1 + 0.03)^{10}$ is 1.343916 and $(1 + 0.005)^{60}$ is 1.348850 OR	K5	CO2	15
	A firm is selling 100 units at a price of Rs 250. However, to sell 110 units, they need to cut the price down to Rs 240. What is the level of marginal revenue at this higher level of sales?		CO5	

