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PART - A: (Multiple Choice Questions) (1 x 10 =10 Marks) Q.1 Answer ALL questions	B. B. A(Second Semester) Examinations, August – 2021 20BBA205 – Business Mathematics					
O. 1 Answer ALL questions a. $3x - 4+7 = 0$, then $x = ?$ (i) $-1(A)$ (ii) $+1$. (iii) 0 (iv) 2 b. From 8 gentlemen and 4 ladies, a committee of 5 is to be formed. In how many ways can this be done so as to include at least one lady? (i) 736 (ii) 736 (ii) 728 (iii) 280 (iv) 792 c. How many 10 digits numbers can be written by using the digits 1 and 2 (i) $^{10}C_1 + {}^{6}C_2$ (i) $^{10}C_1 + {}^{6}C_2$ (ii) 210 (iii) $^{10}C_2$ (iv) 10! d. Among 14 players, 5 are bowlers. In how many ways a team of 11 may be formed with at least 4 bowlers? (i) 265 (ii) 263 (iii) 264 (iv) 275 e. Cramer's Rule is also known as	The figures	in the right hand 1	margin indicate marks.			
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	j. Compound Interest is always	the	Simple Interest.			
(iii) Greater than (iv) None of the above	(i) Lesser than	(ii)	Equal to			
	(iii) Greater than	(iv)	None of the above			

PART – B: (Short Answer Questions) (2 x 5=10 Marks)

Q.2. Answer ALL questions

- *a.* What do you mean by sides of an equation?
- b. What is liquidity of Matrices?
- c. What is partial differentiation?
- *d*. Calculate consumer's surplus if the demand function d(q) = 50 2x and supply function s(p) = 20.
- *e*. Define perpetual annuity and give example.

PART – C: (Long Answer Questions) (6 x 5=30 Marks)

Marks

Answer ANY FIVE questions

3.	What are Indices? Explain the laws of Indices	
4.	The denominator of a fraction exceeds the numerator by 5 and if 3 be added to both, numerator and denominator of the fraction, it becomes $3/4$. Find the fraction.	
5.	Solve: $13x + 6y + z = 52$, $5x + 7y + 9z = 38$ and $10x + 20y + 30z = 100$.	6
6.	Find the determinant of $\begin{bmatrix} 1 & 3 & 2 \\ 2 & 1 & 3 \\ 3 & 1 & 2 \end{bmatrix}$	6
7.	Differentiate $f(x) = (6x^{2} + 2x)(x^{3} + 1)$	
8.	2. Integrate: $\int [(\log x)^2 / x] dx$ (use integration by substitution)	
9.	A city is bonded for Rs.50,000.What sum must be set aside annually as a sinking fund, to cancel the debt in 20 years, provided money is worth 5%.	
10.	Find the maxima and minima of the following function:	6
	$f(x) = x^3 - 18x^2 + 96x$	

--- End of Paper ---