SHRI RAMSWAROOP MEMORIAL UNIVERSITY
End Semester Examination (2021-22)-Odd Semester

B.Sc. (Agriculture) – I Year (I Sem)	
Course Name: Elementary Mathematics	Code: BMA 1009
Time: 02 Hours	Max Marks: 50

University Roll No.															
	(To be filled by the Student)														

Note: Please read instructions carefully:

   a) *The question paper has 03 sections and it is compulsory to attempt all sections.*

   b) *All questions of Section A are compulsory; questions in Section B and C contain choice.*

Section A: Very Short Answer Type Questions Attempt all the questions.		BL	CLO	Marks (10)
1.	Find the distance of point $P(6,-6)$ from the origin.	BL 2	CLO 1	02
2.	Evaluate $\lim_{x\to 0} \dfrac{e^x - 1}{x}$.	BL 2	CLO 2	02
3.	Find $\dfrac{d}{dx}\left(\dfrac{1}{\sin x}\right)$.	BL 2	CLO 2	02
4.	Evaluate $\displaystyle\int \dfrac{\sec^2(\log x)}{x}\, dx$.	BL 2	CLO 3	02
5.	Determine the value of $\begin{vmatrix} 2 & 2 & 0 \\ 0 & 4 & 0 \\ 0 & 0 & 6 \end{vmatrix}$.	BL 2	CLO 4	02
Section B: Short Answer Type Questions **Attempt any 03 out of 05 questions.**		**BL**	**CLO**	**Marks** **(24)**
1.	Find the angle between the lines whose slopes are $\dfrac{1}{2}$ and 3.	BL 3	CLO 1	08
2.	Find the Equation of circle passing through $(1,2)$ and center is $(1,-1)$.	BL 3	CLO 1	08
3.	Find the derivative of e^x from the first principle.	BL 3	CLO 2	08
4.	Evaluate $\displaystyle\int (1-x)(2+3x)(5-3x)\,dx$	BL 3	CLO 3	08
5.	Prove that $\begin{vmatrix} 1 & a & b+c \\ 1 & b & c+a \\ 1 & c & a+b \end{vmatrix} = 0$	BL 3	CLO 4	08
Section C: Long Answer Type Questions/Case Study		**BL**	**CLO**	**Marks**

Attempt any 01 out of 03 questions.				**(16)**
1.	Find the area of triangle whose vertices are (4,4), (3,-16) and (3,-2).	BL 3	CLO 1	16
2.	Prove that $\int_{0}^{\frac{\pi}{2}} \frac{\sin x}{\sin x + \cos x} dx = \frac{\pi}{4}$	BL 4	CLO 3	16
3.	Show that $\begin{vmatrix} 1 & a & a^2 \\ 1 & b & b^2 \\ 1 & c & c^2 \end{vmatrix} = (a-b)(b-c)(c-a)$	BL 4	CLO 4	16

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