

Roll No.

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Total No. of Pages : 02

Total No. of Questions : 08

B.Sc. Honours (Agriculture) (Sem.-1)

ELEMENTARY MATHEMATICS

Subject Code : BSAG-106-19(B)

M.Code : 76930

Date of Examination : 09-07-21

Time : 2 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE question(s), each question carries 12 marks.

1. a) Find the equation of the line passing through $(-4, -5)$ and perpendicular to the line $4x - 3y = 10$.
b) Find the ratio in which the line joining $(-5, 1)$ & $(1, -3)$ divides the line joining $(3, 4)$ & $(7, 8)$.
2. Find the angle between the diagonals of a parallelogram ABCD whose vertices are A $(0, 2)$, B $(2, -1)$, C $(4, 0)$ and D $(2, 3)$
3. Find the value of p so that the lines $3x + y - 2 = 0$, $px + 2y - 3 = 0$ & $2x - y - 3 = 0$ may intersect at one point.
4. a) Find the equation of circle with center $(0,2)$ and passing through $(3, 6)$
b) Find the equation of circle with radius 5 and which touches the circle $x^2 + y^2 - 2x - 4y - 20 = 0$ externally at the point $(5, 5)$.
5. a) Evaluate $\lim_{x \rightarrow 0} \frac{x^3 - 1}{x + 2}$.
b) Prove that the function $F(x) = \begin{cases} 2x + 3 & x \leq 0 \\ 3(x + 1) & x > 0 \end{cases}$ is continuous at $x = 0$.
6. Find the derivative of $y = (x + 1) / x$ w.r.t x
7. Solve $\int \sqrt{x}(3x^2 + 2x + 3) dx$.

8. a) If $A = \begin{bmatrix} 3 & 4 \\ 1 & 2 \end{bmatrix}$ find the value of $3 |A|$.

b) Let $A = \begin{bmatrix} 2 & 4 \\ 3 & 2 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & 3 \\ -2 & 5 \end{bmatrix}$ find AB .

Note: Any student found attempting answer sheet from any other person(s), using incriminating material or involved in any wrong activity reported by evaluator shall be treated under UMC provisions.

Student found sharing the question paper(s)/answer sheet on digital media or with any other person or any organization/institution shall also be treated under UMC.

Any student found making any change/addition/modification in contents of scanned copy of answer sheet and original answer sheet, shall be covered under UMC provisions.