

SHRI RAMSWAROOP MEMORIAL UNIVERSITY

End Semester Examination (2021-22)-Odd Semester

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| BBA/B.Com (Hons.) – I Year (I Sem) | |
| Course Name: Basic Mathematics | Code: BMA1003 |
| Time: 02 Hours | Max Marks: 60 |

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| 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 | | BL | CLO | Marks (10) |
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| Attempt all the questions. | | | | |
| 1. | Describe difference between matrix and determinant. | BL1 | CLO2 | 02 |
| 2. | Find the value of the integral $\int e^x \sin x \, dx$. | BL2 | CLO3 | 02 |
| 3. | Find the roots of the following equation: $x^2 + 5x + 6 = 0$ | BL2 | CLO1 | 02 |
| 4. | If $y = 2xe^{3x}$, find first derivative. | BL1 | CLO3 | 02 |
| 5. | Describe simple interest with formulae. | BL1 | CLO4 | 02 |
| Section B: Short Answer Type Questions | | BL | CLO | Marks (30) |
| Attempt any 03 out of 06 questions. | | | | |
| 1. | If α and β are the roots of the equation $2x^2 - 4x + 1 = 0$, the find form the equation the values of $\alpha^2 + \beta$ and $\beta^2 + \alpha$. | BL2 | CLO1 | 10 |
| 2. | Show that the following system of equations is consistent and solve it, $2x + 5y = 1; \quad 3x + 2y = 7$. | BL2 | CLO2 | 10 |
| 3. | Evaluate $\int (5x + 4e^{3x}) \, dx$. | BL2 | CLO3 | 10 |
| 4. | Find the value of x, y, z, w $3 \begin{bmatrix} x & y \\ z & w \end{bmatrix} = \begin{bmatrix} x & 6 \\ -1 & 2w \end{bmatrix} + \begin{bmatrix} 4 & x+y \\ z+w & 3 \end{bmatrix}$ | BL3 | CLO2 | 10 |
| 5. | Find the 18 th term from the end of the Arithmetic Progression $2, 6, 10, 14, \dots, 86$. | BL2 | CLO1 | 10 |
| 6. | Find the simple interest and amount on Rs. 1500 invested at 14% during the period from 6 March, 2006 to 19 May, 2006. | BL3 | CLO4 | 10 |
| Section C: Long Answer Type Questions. | | BL | CLO | Marks (20) |
| Attempt any 01 out of 04 questions. | | | | |

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| 1. | Find adj A, where $A = \begin{bmatrix} 3 & -2 & 3 \\ 2 & 1 & -1 \\ 4 & -3 & 2 \end{bmatrix}$, Also find A^{-1} . | BL4 | CLO2 | 20 |
| 2. | Find the maximum and minimum values of the function $x^4 + 2x^3 - 3x^2 - 4x + 4$. | BL3 | CLO3 | 20 |
| 3. | Find the n^{th} term of series $1, 2a, 3a^2, 4a^3, \dots$. Also find sum of series. | BL3 | CLO1 | 20 |
| 4. | Find the compound interest on Rs. 10,000 for 1 year and 7 months if the interest is payable half yearly at the rate 8% per annum. | BL3 | CLO4 | 20 |
