CB
60:40

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BACHELOR OF BUSINESS ADMINISTRATION (B.B.A.)
EXAMINATION : DECEMBER- 2022
SEMESTER - III
Sub. : Business Mathematics (BBA15- 314)

Date : 23/12/2022 **Total Marks : 60** **Time: 2.00pm to 4.30pm**

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

Q. 1. Choose the most appropriate option. **(05)**

1. 5+3i, then 3 is called _____ .
   a) Complex number b) Real number
   c) Imaginary number d) Pure number
2. A set containing no element is called ____ set .
   a) Null b) Row
   c) Singleton d) column
3. a, a+d, a+2d are three terms of _____ progression .
   a) Arithmetic progression b) Harmonic progression
   c) Geometric progression d) Exponential progression
4. 3x+10y=29, 3x+2y=13 solution is _____ .
   a) (-2, 3) b) (3, 2)
   c) (-3 ,2) d) (3, -2)
5. y co-ordinate is zero point lie on _____ axis .
   a) x-axis b) z-axis
   c) y-axis d) plain

Q. 2. State True / False **(05)**

1. 1,2,3, ... is G.P.
   a) True b) False
2. A is a matrix then 2A is scalar matrix .
   a) True b) False
3. A polynomial having three terms is binomial .
   a) True b) False
4. A set containing only one element is called singleton set.
   a) True b) False
5. 6x - 21 = 0 is second degree equation.
   a) True b) False

Q. 3. Write Short notes on (Any Three) **(15)**

1. Matrices
2. Sequence
3. Polynomials
4. Complex number
5. Rules of logarithm

Q. 4. Answer in detail (Any Two) **(20)**

1. If $A = \begin{bmatrix} 2 & -3 \\ 3 & 4 \end{bmatrix}$ $B = \begin{bmatrix} 4 & 5 \\ 3 & -2 \end{bmatrix}$ $C = \begin{bmatrix} 3 & -1 \\ 0 & 6 \end{bmatrix}$ find 3A + 4B – 2C.

2. If Z 1= 3x+2i , Z2= x-5i then find the value of (Z1+Z2) (Z1-Z2) ,(Z1*Z2) (Z1/Z2) also draw the argand diagram for each.

3. Solve 5x + 2y = 8 and 9x - 5y = 23.

Q. 5. Case study (Any One) **(15)**

1. Given matrix A $A = \begin{bmatrix} 3 & 0 & 7 \\ 4 & 2 & 5 \\ 3 & 1 & 2 \end{bmatrix}$

   i) Estimate $|A|$
   ii) Find Miners
   iii) Find adjoint matrix
   iv) Estimate Inverse of given matrix.

2. Solve the given system of equations by Cramer's rule –

   X + y + z = 3
   X + 2y + 3z = 4
   X + 4y + 9z = 6

   i) Find Δx
   ii) Find Δy
   iii) Find Δz
   iv) Estimate the values of x,y,z.