TILAK MAHARASHTRA VIDYAPEETH, PUNE
BACHELOR OF BUSINESS ADMINISTRATION (B.B.A.)
LOGISTICS AND SUPPLY CHAIN MANAGEMENT/
AVIATION MANAGEMENT
EXAMINATION: JUNE - 2024
SEMESTER - I
Sub.: Mathematics for Managers (BBA23-AVLS 114)

Date : 07/06/2024	Total Marks : 60	Time: 2.00 pm to 4.30 pm

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

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

1. Following is not a multiple of 5
   a) 61   b) 65
   c) 80   d) 90

2. Derivative of $10 x^9$ with respect to x is
   a) $90x^8$ b) 96
   c) 16y   d) 10 x

3. Integration of 20 with respect to y is
   a) 100p   b) 20 y
   c) 16p   d) 80y

4. value of $^{15}P_1$
   a) 25   b) 18
   c) 395   d) 15

5. Value of $^8C_5$
   a) 96   b) 32
   c) 56   d) 23

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

1. Multiplication of odd number with odd number is even
   a) True   b) False

2. Addition of odd number with odd number is even
   a) True   b) False

3. positive number multiplied with positive number gives negative number
   a) True   b) False

4. $P (A \cup B) = P(A) + P(B) - P (A \cap B)$
   a) True   b) False

5. $(a +b) (a - b) = a^2 -b^2$
   a) True   b) False

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

1. Write a note on Combination using example
2. Write a note on Permutation with help of an example Combination
3. Explain benefits of Venn diagram
4. Write a note on Arithmetic Progression
5. Write a note on Geometric Progression

Q. 4.   **Answer in detail (Any Two)**   **(20)**
  1. Explain procedure of finding inverse matrix
  2. Find different types of sets with help of an example
  3. Write a note on any one application of derivative
  4. Write a note on any one application of Integration

Q. 5.   **Case study**   **(15)**
             Question
  1. In an examination 70% of the candidates passed in Economics, 65% in Geography, 27% failed in both the subjects and 372 passed in both the subjects. Find the total number of students 10 Marks

  2. a) Find 11 th , 15 th term of the following series 4 , 8, 12, 16
     b): Find sum of FIRST 8 terms of following series: 1, 3, 9 , 27

  3. $A = \{ x / x^2 -4x + 4 \}$
     $B = \{ x / x^2 -6x + 9\}$
     Find A U B

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