**0101E938**      Candidate's Seat No :_____

## IMBA (FM/HRPA/BM/BEM) Sem.-1 Examination
### BEM/BBA/FM/HR/BBA_CC-104
### BM
### January-2024

**Time : 2-30 Hours]**                                    **[Max. Marks : 70**

**Q.1**   How many different words can be formed using the letters of the following words   **14**
without repetition:
   a) MATHEMATICS
   b) INSTITUTION
   c) CONVOCATION
   d) RAKSHABANDHAN

**Q.2**   If f: R→R, f (x) = $3x^2+5$ and g: R→R, g(x) = 2x-3, find fog,gof. Also and fog( 1) gof (-3)   **14**

OR

**Q.2**   The total cost and the total revenue of the company that produces and sell x units of a   **14**
particular products are respectively C(x) = 5x =350 and R(x) = $50x-x^2$. find
1) Breakeven values
2)The value of x that produces loss

**Q.3**   How many 3 digit number can be formed from using the digit of the number 3412,   **14**
where no digits is to be repeated out of them
1) How many are odd
2) How many are greater than 200
3) How many are smaller than 400
4) How many are between 200 and 400

OR

**Q.3**   Find the sum of the series 99+95+91+87+.... to 20 terms.   **14**

**Q.4**   If (8,0) is the circumcenter of a triangle whose vertices are (a,-5), (10,5) and (3,b), then   **14**
find the value of a and b?

OR

**Q.4**   Evaluate   **14**

$$\lim_{x \to 2} \frac{4x+3}{x-2}$$

**Q.5**   Define the following terms :   **14**

a) Cartesian product
b) One-One function
c) Polynomial function
d) Arthmetic Progression
e) Bijective function