



Institute of Management
JK LakshmiPat University
Jaipur

END TERM EXAMINATION 2018

Programme: BBA II Semester
MM: 50 Marks

Sub: Foundation of Mathematics
Time: 3 Hours
Subject code: QT09

Instructions: Attempt any three questions from Section A. Section B is compulsory.

Section A

Q1. A. In a group of 50 people, 35 speak Hindi, 25 speak both Hindi and English and all the people speak at least one of two languages. How many people speak only English and not Hindi? How many people speak English?

B. A. If $A = \begin{pmatrix} X+3 & 2Y+X \\ Z-1 & 4A+6 \end{pmatrix}$ and $B = \begin{pmatrix} 0 & -7 \\ 3 & 2a \end{pmatrix}$

What will be the values of X, Y and Z.

(4+6 marks)

Q2. A. The 7th term and 10th terms of an H.P are respectively $\frac{2}{5}$ and $\frac{2}{7}$, find the 1st and the nth terms of H.P.

B. Mr. X repays a loan of Rs. 3,250 by paying Rs. 20 in the first month and then he increases the payment by Rs. 15 every month. How long did he take to clear this loan?

(5+5 marks)

Q3. Differentiate the following expressions

A. $Y = X^X$, Find dY/dX

B. Evaluate- $\int e^x \sin X$

(5+5 marks)

Q4. A. $Y = 2X^2 + 3/\log X$, find dY/dX

B Evaluate $\int X^3/(X+1)$

(5+5 marks)

Q5. A. Solve the following equations with the help of Matrix, Find value of x, y and z.

$$3x + y + 2z = 3; 2x - 3y - z = 4; x + 2y + z = 4$$

B limit $(8x^3 - 1)/(6x^2 - 5x + 1)$, Find the value of function.
 $x \rightarrow 1/2$

(6+4Marks)

Section B

1. The total cost of manufacturing three types of motor car is given by the following table:

	Labour (hours)	Materials	Sub-Contracted work (units)
Car A	40	100	50
Car B	80	150	80
Car C	100	250	100

Labour costs Rs. 12 per hour, units of material cost Rs. 5 each and a unit of subcontracted work costs Rs. 7. Find the total cost of manufacturing 3,000; 2,000 and 1000 vehicles of type A, B and C respectively.

1. 2. A function $f(x)$ is defined as follows-

$$F(x) = \left\{ \begin{array}{l} 2x+6, \text{ (if } x=0, x=-3, -3 < x < 0) \\ 6, \text{ (} 0 < x < 2) \\ 2x-6, \text{ (if } x=2, x=5, 2 < x < 5) \end{array} \right\}$$

- Draw a graph of the function
- Find $F(2.5)$