

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI  
(END SEMESTER EXAMINATION)**

CLASS: MBA  
BRANCH: MBA

SEMESTER : I  
SESSION : MO/19

**SUBJECT: MT407 MANAGEMENT OF MANUFACTURING SYSTEMS**

TIME: 3.00Hrs.

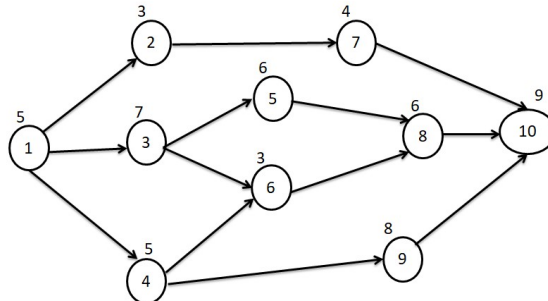
FULL MARKS: 50

**INSTRUCTIONS:**

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
2. Attempt all questions.
3. The missing data, if any, may be assumed suitably.
4. Before attempting the question paper, be sure that you have got the correct question paper.
5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.

- Q.1(a) Discuss the responsibilities of a production Manager. [5]  
Q.1(b) What are the types of layout? Explain them with examples. [5]

- Q.2(a) Consider the assembly network shown in Fig. below which shows the precedence relationships in assembling a product. The number by the side of each node represents the processing time in minutes. The required production volume in 8-hour shift is 24 completed assemblies. [5]



Design an assembly line using RPW method.

- Q.2(b) A firm believes that its annual profit depends on its expenditures for research. The information for the preceding six years is given below. Estimate the profit when the expenditure is 6 units. [5]

Year	1	2	3	4	5	6	7
Expenditure for Research	2	3	5	4	11	5	6
Annual Profit	20	25	34	30	40	31	?

- Q.3(a) Describe the different types of maintenance. [5]  
Q.3(b) Explain two-handed process chart with an example. [5]

- Q.4(a) Annual demand for an item is 4800 units. Ordering cost is Rs. 500 per order. Inventory carrying cost is 24% of the purchase price per unit, per year. The price breaks are shown as: [5]

Quantity	Price (Rs.)
$0 \leq Q_1 < 1200$	10
$1200 \leq Q_2 < 2000$	9
$2000 \leq Q_3$	8

Find the optimal order size.

- Q.4(b) Write short notes on KAIZEN and 5S. [5]

- Q.5(a) Describe Function Analysis System Technique (FAST) diagramming with a small case study. [5]  
Q.5(b) Example the design options for a Transportation network. [5]