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B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

June / July 2024 Semester End Main Examinations

Programme: B.E.   Semester: VI

Branch: Industrial Engineering & Management   Duration: 3 hrs.

Course Code: 22IM6HSFPD   Max Marks: 100

Course: Facilities Planning and Design

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

			UNIT - I	CO	PO	Marks
1	a)		Discuss the major factors that influence the selection of a plant location.	CO1	PO1	**12**
	b)		Propose a suitable location for a utensil manufacturing company among the 3 locations identified. The cost particulars are provided in the table given below.	CO2	PO1	**08**

Particulars	A	B	C
Fixed Cost	2 Lakh	2.5 lakhs	3 lakhs
Variable Cost	₹ 60	₹ 30	₹ 20

i) Propose the range for which location is best
ii) Propose a best location to manufacture 6000 units
iii) If selling price is ₹150, what is the profit/loss?

			UNIT - II	CO	PO	Marks
2	a)		Explain the purpose of an Activity Relationship Chart in the context of plant layout design.	CO1	PO1	**10**
	b)		With a suitable illustration, outline Nadler's Ideal System's Approach to plant layout design.	CO2	PO1	**10**

OR

3	a)		Discuss the key factors to be considered in space planning for a plant layout.	CO1	PO1	**10**
	b)		Explain Reed's procedure for plant layout. How does it compare to Immer's Basic Steps?	CO2	PO1	**10**

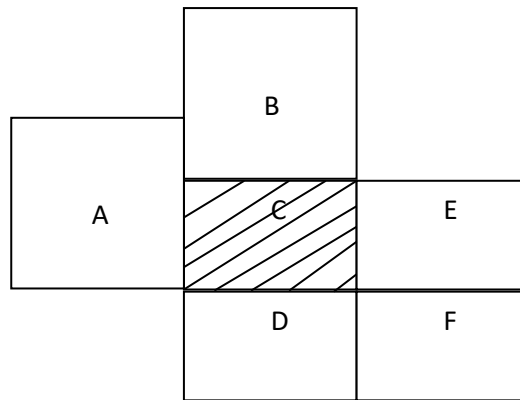|			UNIT - III			
4	a)		Demonstrate the use of CRAFT algorithm to minimize the total transportation cost at a forging unit with five sections namely A, B, C, D, E & F. The number of flow between these sections is given in From-To chart. Consider the cost of shipping as Rs. 15/unit distance after developing a distance matrix. The initial layout of the company is as shown in the Figure Q-4a.	CO3	PO2 PO5	**20**

Figure Q-4a

Dimensions:
Departments A and B - 30 X 30
Departments C, D, E and F - 30 X 20
Note: Dept C is constrained, i.e. department C cannot be
swapped with any other departments

To

From

	A	B	C	D	E	F
A		5	7	3	8	2
B	4		2	8	1	6
C	5	3		8	2	1
D	4	5	6		8	3
E	7	5	4	2		1
F	8	6	4	5	3	

OR

5	a)	Discuss the key efficiency indices considered in evaluation of a plant layout.	CO3	PO2 PO5	**08**
	b)	What are the input requirements for the ALDEP? How does the ALDEP procedure work in generating plant layouts? illustrate	CO2	PO1	**12**

UNIT - IV

6	a)	For a centralized kitchen in a bakery with existing machines located at coordinates P1(3,2), P2(6,-1), P3(4,0), P4(1,2), P5(-2,4), P6(4,-5), P7(1,-5), and P8(5,5), and given the daily trips between the new and existing machines, determine the location of the new machine using: (i) Minisum Method (ii) Minimax Method	CO4	PO3 PO5	**10**
	b)	Explain the key parameters for each of the following scenarios, and when they should be adopted: i) Storage Model ii) Warehouse Layout Model	CO1	PO1	**10**

UNIT - V

7	a)	How is TOPSIS applied in decision-making scenarios? Illustrate.	CO4	PO3 PO5	**10**
	b)	What are the key components and importance of MCDM in decision-making processes? Explain	CO4	PO3 PO5	**10**

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B.M.S. College of Engineering, Bengaluru-560019

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June / July 2024 Semester End Main Examinations

Programme: B.E.   **Semester: VI**

Branch: Institutional Elective   **Duration: 3 hrs.**

Course Code: 22IM6OEHRM   **Max Marks: 100**

Course: Human Resource Management

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

				CO	PO	Marks
			UNIT - I			
1	a)		What are the objectives of Human Resource Management (HRM)?	CO2	PO1	**10**
	b)		Explain the process of Man Power Forecasting in Human Resource Planning.	CO2	PO1	**10**
			UNIT - II			
2	a)		Elaborate upon the main functions of Human Resource Management (HRM)?	CO2	PO1	**10**
	b)		Analyse the roles and primary responsibilities of Human Resource Managers?	CO3	PO2	**10**
			OR			
3	a)		What are the different methods of job recruitment?	CO2	PO1	**10**
	b)		Analyse the importance of the Induction process during on-boarding of new employees.	CO3	PO2	**10**
			UNIT - III			
4	a)		What are the different methods of Training Evaluation?	CO2	PO2	**10**
	b)		Differentiate between Executive Development and Non-executive Development approaches.	CO3	PO2	**10**
			OR			
5	a)		Analyse the importance of Kirkpatrick Model used in Training and Development.	CO3	PO2	**10**
	b)		What is the significance of Training Needs Identification in an organization?	CO2	PO1	**10**

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

			UNIT - IV			
6	a)		What are the advantages of effective communication in Human Resource Management?	*CO2*	*PO1*	**10**
	b)		Explain the concept of Human Resource Accounting and its methods.	*CO2*	*PO1*	**10**
			UNIT - V			
7	a)		Analyse the impact of the Indian Factories Act in ensuring workplace safety and health.	*CO3*	*PO2*	**10**
	b)		What is the role of the Indian Industrial Disputes Act in managing industrial conflicts?	*CO2*	*PO1*	**10**

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B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

June / July 2024 Semester End Main Examinations

Programme: B.E. **Semester: VI**
Branch: Institutional Elective **Duration: 3 hrs.**
Course Code: 22IM6OEOPR **Max Marks: 100**
Course: Operations Research

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

			UNIT - I	CO	PO	Marks
1	a)		How O R models are classified and explain them briefly	CO2	PO2	**12**
	b)		Solve the following Linear Programming Problem by Graphical Method: $$\text{Maximize } Z = 300x_1 + 400x_2$$ Subject to the constraints $$5x_1 + 4x_2 \leq 200$$ $$3x_1 + 5x_2 \leq 150$$ $$5x_1 + 4x_2 \geq 100$$ $$8x_1 + 4x_2 \geq 80$$ where $x_1, x_2 \geq 0$	CO3	PO3	**08**
			OR			
2	a)		Solve the following Linear Programming Problem by Simplex Method: $$\text{Maximize } Z = 4x_1 + 10x_2$$ Subject to the constraints $$2x_1 + x_2 \leq 50$$ $$2x_1 + 5x_2 \leq 100$$ $$2x_1 + 3x_2 \leq 90$$ where $x_1, x_2 \geq 0$	CO2	PO2	**10**
	b)		Solve the following Linear Programming Problem by Big M (Penalty) Method: $$\text{Minimize } Z = 4x_1 + 3x_2$$ Subject to the constraints $$2x_1 + x_2 \geq 10$$ $$-3x_1 + 2x_2 \leq 6$$ $$x_1 + x_2 \geq 6$$ where $x_1, x_2 \geq 0$	CO3	PO3	**10**

| | | | | | | | | CO2 | PO2 | **08** |

3   a)   Determine an initial basic feasible solution to the following transportation problem by using (i) North West Corner Method (ii) Least Cost Entry Method:

		Distribution Centre				Supply
		I	II	III	IV	
Source	1	4	6	8	8	40
	2	6	8	6	7	60
	3	5	7	6	8	50
Demand		20	30	50	50	

CO2   PO2   08

b)   A company has three refineries and four depots. The capacity of each refinery, transportation cost in Rs. per ton and requirement at each depot are given in the following table. Determine the optimum allocation of output.

		Depot				Capacity
		1	2	3	4	
Refinery	1	5	7	13	10	700
	2	8	6	14	13	400
	3	12	10	9	11	800
Requirement		300	600	700	400	

CO3   PO3   12

UNIT - III

4   a)   Solve the following assignment problem having the following cost elements for the minimum assignment schedule.

	1	2	3	4	5	6	7
A	35	22	60	41	27	52	44
B	51	39	42	33	65	47	58
C	25	32	53	41	50	36	43
D	32	28	40	46	3	55	49
E	43	36	45	63	57	49	42
F	27	18	31	46	35	42	34
G	48	50	72	59	43	64	58

CO4   PO4   10

b)   A travelling salesman has to visit five cities. He wishes to start from a particular city, visit each city once and then return to his starting point. The travelling cost (in '000 Rs) of each city from a particular city is given below:

		To City				
		A	B	C	D	E
From City	A	∞	2	5	7	1
	B	6	∞	3	8	2
	C	8	7	∞	4	7
	D	12	4	6	∞	5
	E	1	3	2	8	∞

What should be the sequence of visit of the salesman so that the cost is minimum?

CO3   PO3   10

UNIT - IV

5	a)	List the steps for drawing a network.	CO2	PO2	**08**

| | b) | A project has the following characteristics: | CO3 | PO3 | **12** |

Activity	1 – 2	2 – 3	2 – 4	3 – 5	4 – 5	4 – 6
Optimistic Time	1	1	1	3	2	3
Pessimistic Time	5	3	5	5	4	7
Most Likely Time	1.5	2	3	4	3	5

Activity	5 – 7	6 – 7	7 – 8	7 – 9	8 – 10	9 – 10
Optimistic Time	4	6	2	5	1	3
Pessimistic Time	6	8	6	8	3	7
Most Likely Time	5	7	4	6	2	5

Construct a PERT network. Find the critical path and variance for each event.

OR

6	a)	What are the three time estimates used in PERT, and how are they defined?	CO2	PO2	**08**

| | b) | The following table gives the activities of a construction project and other relevant information. | CO3 | PO3 | **12** |

Activities	Normal Duration (days)	Crashing Duration (days)	Crashing Cost (Rs. Per day)
1 – 2	9	6	20
1 – 3	18	5	25
1 – 4	15	10	30
2 – 4	5	3	10
3 – 5	10	6	15
4 – 5	2	1	40

i. What is the normal project length and minimum project length?
ii. Determine the minimum crashing costs of schedule ranging from length down to and the minimum length schedule.

UNIT - V

7	a)	There are 5 jobs, each of which has to go through the machines A and B in the order AB. The processing times (in hours) are given as:	CO3	PO3	**10**

Job	J_1	J_2	J_3	J_4	J_5
Machine A	2	4	5	7	1
Machine B	3	6	1	4	8

Determine a sequence of these jobs that will minimize the total elapsed time T.
Also obtain:
i. the minimum elapsed time; and
ii. the idle time for each of the machines.

		b)	A machine shop has five machines A, B, C, D and E. Two jobs must be processed through each of these machines. The time (in hours) taken on each of these machines and the necessary sequence of jobs through the shops are given below:	CO4	PO4	**10**

Job 1	Sequence	A	B	C	D	E
	Time	3	4	2	6	2
Job 2	Sequence	B	C	A	D	E
	Time	5	4	3	2	6

Use the graphical method to obtain the total minimum elapsed time.

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B.M.S. College of Engineering, Bengaluru-560019

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June / July 2024 Semester End Main Examinations

Programme: B.E.
Branch: Industrial Engineering & Management
Course Code: 22IM6PCADM
Course: Advanced Decision Modelling

Semester: VI
Duration: 3 hrs.
Max Marks: 100

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.
3. Use of statistical tables permitted.

<table>
<tr><td colspan="3" style="text-align:center">UNIT - I</td><td>CO</td><td>PO</td><td>Marks</td></tr>
<tr>
<td>1</td><td>a)</td>
<td>Solve the following LPP by the revised simplex method
Maximize $Z = x_1 + 2x_2 + x_3$
Subject to $-2x_1 + x_2 + x_3 \leq 2$
             $-x_1 + x_2 - x_3 \leq 1$
               $x_1, x_2, x_3 \geq 0$</td>
<td><i>CO1</i></td><td><i>PO1</i></td><td>15</td>
</tr>
<tr>
<td></td><td>b)</td>
<td>List the various cases that arise when carrying out sensitivity analysis of an LPP Problem.</td>
<td><i>CO1</i></td><td><i>PO1</i></td><td>05</td>
</tr>
<tr><td colspan="3" style="text-align:center">OR</td><td></td><td></td><td></td></tr>
<tr>
<td>2</td><td>a)</td>
<td>Solve by branch and bound technique.
       Max $Z = 7x_1 + 6x_2$
Subject to constraints
         $2x_1 + 3x_2 \leq 12$
         $6x_1 + 5x_2 \leq 30$
Where x_1, x_2 must be non negative integers.</td>
<td><i>CO1</i></td><td><i>PO1</i></td><td>15</td>
</tr>
<tr>
<td></td><td>b)</td>
<td>Graphically represent the Gomary's cutting plane. How does this notion of cutting plane identify the feasible solution space?</td>
<td><i>CO1</i></td><td><i>PO1</i></td><td>05</td>
</tr>
<tr><td colspan="3" style="text-align:center">UNIT -2</td><td></td><td></td><td></td></tr>
<tr>
<td>3</td><td>a)</td>
<td>A super market has two sales counters. If the service time for each customer is exponential with a mean of 4 minutes, and if the people arrive in a Poisson fashion at the rate of 10 an hour, then calculate the:
  I.   Probability that a customer has to wait for being served?
  II.   Expected percentage of idle time for each sales girl?
  III. If a customer has to wait, what is the expected length of his waiting time?</td>
<td><i>CO2</i></td><td><i>PO2</i></td><td>10</td>
</tr>
</table>

		b)	Two manufactures A and B are competing with each other in a restricted market. Over the year, A's customers have exhibited a high degree of loyalty as measured by the fact that customers are using A's product 80 percent of the time. Also former customers purchasing the product from B have switched back to A's product 60 percent of the time. (a) Construct and interpret the state transition matrix in terms of (i) retention and loss, and (ii) retention and gain. (b) Calculate the probability of a customer purchasing A's product at the end of the second period.	CO2	PO2	**10**
			Unit -3			
4	a)		Highlight the difference between linear congruential method & mixed congruential methods. Let $m=10^2=100$, $a=19$, $c=0$ and $X_0=63$, and generate a sequence of random integers using the Linear congruential method.	CO2	PO2	**08**
	b)		List the steps in a simulation study and Explain these steps in a logical sequence with the help of a flow chart.	CO2	PO2	**08**
	c)		Outline the steps involved in the Generation of Pseudo-Random Numbers	CO2	PO2	**04**
			OR			
5	a)		Carry out the Test for autocorrelation for the following sequence of numbers. 0.12 0.99 0.68 0.01 0.23 0.15 0.33 0.49 0.05 0.28 0.89 0.35 0.91 0.43 0.95 0.31 0.64 0.28 0.83 0.93 0.41 0.60 0.27 0.75 0.88 0.58 0. 19 0.36 0.69 0.87	CO2	PO2	**10**
	b)		Let $m = 100$, $a= 19$, $c=o$, and $Xo=63$, and generate a sequence of random integers.	CO2	PO2	**06**
	c)		What are the considerations in selecting the methods or routines for generation of pseudo random numbers?	CO2	PO2	**04**
			UNIT-4			
6	a)		Give examples of situation in which exponential distribution is found most appropriate. The time to attend a breakdown call is found to follow exponential with a mean of 2 hours. Generate exponential random variates representing the time to attend the breakdown.	CO3	PO3	**08**
	b)		Service time of a bank teller is found to follow normal with $\mu = 5$ minutes and $\sigma= 1$ minute. Generate five service times.	CO3	PO3	**06**
	c)		In an inventory system, the lead time is found to follow uniform distribution with mean 10 days and half width 3 days. Generate five lead times.	CO3	PO3	**06**
			UNIT - 5			
7	a)		List and explain any two MCDM models considered in decision making.	CO4	PO2	**10**
	b)		Explain the core logic behind the working of the Genetic algorithm with illustrations.	CO4	PO3	**05**
	c)		What is the significance of neurons in Artificial Neural Network? Depict the computational logic of ANN diagrammatically.	CO4	PO3	**05**

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B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

June / July 2024 Semester End Main Examinations

Programme: B.E. **Semester: VI**

Branch: Industrial Engineering and Management **Duration: 3 hrs.**

Course Code: 22IM6PCIBA **Max Marks: 100**

Course: Industry 5.0

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

				CO	PO	Marks
			UNIT - I			
1	a)		Brief on the key elements of business transformation	CO1	PO1	**10**
	b)		Why is a business transformation is required and how is it done? Elaborate	CO1	PO1	**10**
			OR			
2	a)		Discuss the challenges that are incurred during the Automation of business processes	CO1	PO1	**10**
	b)		Discuss about robotic process automation (RPA).	CO1	PO1	**10**
			UNIT - II			
3	a)		Elaborate on the developments during second industrial revolution	CO2	PO2	**10**
	b)		Brief on collaborative robots and also highlight the applications of cobots.	CO2	PO2	**10**
			UNIT - III			
4	a)		What is the scope of AR in plastic industry and how AM is advancing in plastic manufacturing industry?	CO1	PO1	**10**
	b)		Discus how an IIoT is applied in Valve Manufacturing Industry.	CO1	PO1	**10**
			OR			
5	a)		Elaborate on the outcome of Industrial transformation in the plastics industry	CO3	PO4	**10**
	b)		How AR/VR Improve MRO in Aviation GSE? Discuss	CO1	PO1	**10**

			UNIT - IV			
6	a)		Brief on the following quality methodologies followed in automotive sectors i) Six Sigma ii) Toyota Production System (TPS) iii) Lean manufacturing	*CO2*	*PO2*	**10**
	b)		How a Predictive Maintenance in Heat Treatment Process is carried out with a cobot and IIoT? Explain.	*CO2*	*PO2*	**10**
			UNIT - V			
7	a)		With respect to Industrial transition strategy planning connected to internal factors, how SWOT analysis is carried out?	*CO1*	*PO1*	**10**
	b)		What is the ultimate goal of Industry 4.0 to Industry 5.0 transformation and how is it done?	*CO2*	*PO2*	**10**

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B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

June / July 2024 Semester End Main Examinations

Programme: B.E.   Semester: VI

Branch: Industrial Engineering and Management   Duration: 3 hrs.

Course Code: 22IM6PCLOM   Max Marks: 100

Course: Lean and Operations Management

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

			UNIT - I	CO	PO	Marks
1	a)		Obtain the network of operation management transformation process and describe it for a purely manufacturing Organization.	CO1	PO1	**05**
	b)		Explain the factors that affect productivity.	CO1	PO1	**05**
	c)		What are the principles of Lean Manufacturing system? Compare mass and lean Manufacturing with various characteristics of organization.	CO2	PO1	**08**
			UNIT - II			
2	a)		Describe the forecasting objectives and if shipments (in tons) of welded tube by aluminium producer are shown below in the table.	CO3	PO2	**10**

Year	1	2	3	4	5	6	7	8	9	10	11
Tons	2	3	6	10	8	7	12	14	14	18	19

a) Plot a graph, comment on the relationship

b) Compute a 3-year moving average, plot it as a dotted line and use it to forecast shipments in year 12

c) Using a weight of 3 for the most recent data, 2 for the next and 1 for the oldest, forecast shipments in year 12

	b)	A firm uses simple exponential smoothing with $\alpha = 0.1$ to forecast demand. The forecast for the week of February 1 was 500 units, whereas actual demand turned out to be 450 units. a) Forecast the demand for the week of February 8. b) Assume that the actual demand during the week of February 8 turned out to be 500 units. Forecast the demand for the week of February 15, Continue forecasting through March 15, assuming that subsequent demands were actually 546, 488, 460, 550 and 520 unit	CO3	PO2	**10**

			OR			

3	a)	ABC manufacturing produces a product that has a 6-month demand cycle, as shown in table. Each unit requires 10 worker-hours to produce, at a labour cost of Rs. 6 per hour regular rate (or Rs. 9 per hour overtime). The total cost per unit is estimated at Rs. 200, but units can be subcontracted at a cost of Rs. 208 per unit. There are currently 20 workers employed in the subject department, and hiring and training costs for additional workers are Rs. 300 per person, whereas layoff costs are Rs. 400 per person. Company policy is to retain a safety stock equal to 20 per cent of the monthly forecast, and each month's safety stock becomes the beginning inventory for the next month. There are currently 50 units in stock carried at a cost of Rs. 2 per unit-month. Unit shortage, or stockouts, has been assigned a cost of Rs. 20 per unit month	CO3	PO2 PO3	**10**

	January	February	March	April	May	June
Demand	300	500	400	100	200	300
Workdays	22	19	21	21	22	20
Work hr at 8 per day	170	150	160	168	170	160

Two aggregate plans are proposed.
Plan1: Vary work force size to accommodate demand.
Plan 2: Maintain constant work force of 20, and use overtime and idle time to meet demand.
Compare the costs of the two plans in table form

	b)	Four clamps(C 20) constitute a subassembly that is combined with base (A 10) and two springs (B 11) to complete the end-item bracket (Z 100). However, the same clamp (C 20) is also a component of the base (A 10). 2 Bearing and Shaft (G32) are sub components of Housing (D21), This housing is the subcomponent of Base (A10). Handle (E20) is the Subcomponent of Clamp (C20) of Base (A10) and Handle E30 is the subcomponent of 4 Clamps (C20). a) Obtain Structure of the tree and Bill of Materials with levels b) Determine the dependency effect and quantities or requirements of A10, B11, C20, D2l, E30, F3l, and G32 needed to complete 50 of the Z100 brackets depicted	CO3	PO2	**10**

		UNIT - III			

4	a)	Explain four types of Scheduling strategies.	CO1	PO1	**10**
	b)	Consider the following single machine scheduling problem. Determine the sequence which will minimize the maximum lateness (L_{max}), also determine the L_{max} with respect to the operational sequence	CO3	PO2	**10**

Job(j)	1	2	3	4	5	6
Processing Time (Cj)	10	8	8	7	12	15
Due Date (Dj)	15	10	12	11	18	25

		OR			

5	a)	How to obtain the optimum sequence of jobs by Johnson's algorithm? Consider the following 3 machines and 5 jobs flow shop in the table below. Determine the makespan for the optimum sequence of jobs	CO3	PO1	12

Job	Processing Time		
	Machine 1	Machine 2	Machine 3
1	8	5	4
2	10	6	9
3	6	2	8
4	7	3	6
5	11	4	5

	b)	Describe how to arrive at processing two Jobs through 'm' machines	CO2	PO1	08

UNIT - IV

6	a)	What are the different forms of waste exists in lean manufacturing? Apply counter measures to eliminate any four waste.	CO2	PO1	10
	b)	Construct Push and Pull system employed to run the manufacturing unit and explain how these systems are beneficial to the Unit and also explain how JIT system attempts to maintain uniform production levels on the final assembly line.	CO3	PO2	10

UNIT - V

7	a)	What are the features of Preventive Maintenance? Implement Preventive Maintenance on a vehicle (two or four wheeler) or any gadgets you have purchased. How could this maintenance benefit you?	CO3	PO2	10
	b)	Explain four types of dependencies which is responsible before creating a precedence diagram and find the cycle time, efficiency and theoretical minimum number of work stations if output rate = 60 units/hr for one, three and five workstations from the cycle times of line balancing given below.	CO3	PO2	10

1	2	3	4	5
0.1 min.	0.7 min.	1.0 min.	0.5 min.	0.2 min.

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B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

June / July 2024 Semester End Main Examinations

Programme: B.E. **Semester: VI**

Branch: Industrial Engineering and Management **Duration: 3 hrs.**

Course Code: 22IM6PEMIS **Max Marks: 100**

Course: Management Information System

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

				CO	PO	Marks
			UNIT - I	*CO*	*PO*	**Marks**
	1	a)	Define the fundamental components of information systems and their significance in solving business problems.	*CO1*	*PO1*	**10**
		b)	Explain how information systems can be utilized in business to gain a competitive advantage.	*CO1*	*PO1*	**10**
			UNIT - II			
	2	a)	Compare and contrast transaction processing systems, management information systems, and decision support systems.	*CO1*	*PO1*	**10**
		b)	Identify and discuss the security and ethical challenges in managing information technology in a global business environment.	*CO2*	*PO2*	**10**
			OR			
	3	a)	Discuss how can AI technologies transform management information systems?	*CO2*	*PO2*	**10**
		b)	Analyze the role of Information Systems in supporting Supply Chain Management.	*CO3*	*PO3*	**10**
			UNIT - III			
	4	a)	Compare and contrast B2C and B2B transaction models in e-business with suitable examples.	*CO2*	*PO2*	**10**
		b)	How do media convergence and consumer applications influence the development of e-commerce?	*CO2*	*PO2*	**10**
			OR			
	5	a)	Explain the client-server structure of the web and its importance in e-commerce architecture.	*CO2*	*PO2*	**10**
		b)	Discuss the technological advancements behind the web that have facilitated the growth of e-business.	*CO2*	*PO2*	**10**

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

			UNIT - IV			
6	a)		How has e-commerce changed consumer behavior in finance and home banking? illustrate	*CO2*	*PO2*	**10**
	b)		Describe the mercantile process models from both consumers' and merchants' perspectives.	*CO1*	*PO1*	**10**
			UNIT - V			
7	a)		Explain the concept of Financial EDI and its applications in electronic fund transfer and payment processing.	*CO2*	*PO2*	**10**
	b)		How do the digital signatures in EDI ensure the security and integrity of electronic transactions?	*CO2*	*PO2*	**10**

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