Total No. of Questions: 6 *Total No. of Printed Pages:3*

Enrollment No.....

Faculty of Engineering

End Sem (Odd) Examination Dec-2022

ME3EI01 Operations Management

Programme: B.Tech. Branch/Specialisation: ME

Duration: 3 Hrs. **Maximum Marks: 60**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

Q.1 i. Delivery of service is- **1**

(a) Intangible (b) Tangible

(c) Both (a) and (b) (d) None of these

ii. Operations management is a- **1**

(a) Translation process (b) Transformation process

(c) Transaction process (d) Transition process

iii. Advantage of global location is- **1**

(a) Virtual factory (b) Virtual proximity

(c) Both (a) and (b) (d) None of these

iv. Strategy- Offering the products at lowest price in the industry is called- **1**

(a) Differentiation (b) Cost leadership

(c) Trade offs (d) None of these

v. In which layout arrangement of facility & equipment is kept according to the function performed? **1**

(a) Process (b) Product

(c) Fixed position (d) None of these

vi. Total Float = **1**

(a) LST-EFT (b) LFT-EST (c) LFT-EFT (d) LFT-LST

vii. MRP stands for- **1**

(a) Master Resources Production

(b) Manufacturing Resource Planning

(c) Materials Requirement Planning

(d) Management Reaction Planning

P.T.O.

viii. Aggregate planning is concerned with determining the quantity and timing of production in the- **1**

(a) Long term (b) Short term
(c) Intermediate term (d) None of these

ix. KANBAN is a- **1**

(a) Push system (b) Pull system
(c) Both (a) and (b) (d) None of these

x. 3-M and 5-S are related with- **1**

(a) CONMIP (b) KANBAN
(c) DSS (d) KAIZEN

Q.2 i. Define operations management and mention any two strategies. **2**

ii. What are the major responsibilities of operations manager? **3**

iii. What do you understand by evolution of operations management? Describe the scope of operations management in Indian industries. **5**

OR iv. Write any five differences between goods and services with suitable examples. **5**

Q.3 i. Describe integrated product development in brief using block diagram. **4**

ii. Determine the coordinates of the centre of gravity (Distribution centre) for the given problem. Coordinates (X,Y) of each destination and shipments from the distribution centre to each destination are given in the table below **6**

Destination	X	Y	Quantity
D1	2	2	800
D2	3	5	900
D3	5	4	200
D4	8	5	100

OR iii. Differentiate between DFM and DFE by giving suitable examples. **6**

Q.4 i. Explain the types of facility layouts in brief. **3**

ii. What is project management? Write at least five differences between CPM & PERT. **7**

OR iii. Solve the problem using information given in the table below. **7**

Task	Immediate Predecessor	Task Time (in minutes)
A	—	0.2
B	a	0.2
C	—	0.8
D	c	0.6
E	b	0.3
F	d, e	1.0
G	f	0.4
H	g	0.3

(a) Draw a precedence diagram.
(b) Assuming an eight-hour workday, compute the cycle time needed to obtain an output of 400 units per day.
(c) Determine the minimum number of workstations required.
(d) Assign tasks according to greatest number of following tasks. In case of a tie, use the tiebreaker of assigning the task with the longest processing time first.
(e) Compute the resulting percent idle time and efficiency of the system.

Q.5 i. What is vendor selection? Explain the process of vendor selection. **4**

ii. What is MRP? Discuss inputs, outputs and objectives of MRP. **6**

OR iii. Define material management. Describe the objectives and elements of JIT Systems. **6**

Q.6 Attempt any two:

i. Define computer integrated manufacturing. Discuss its objectives and benefits for industries. **5**

ii. What are the analytical tools for decision support system (DSS). Describe the process of any one tool for DSS. **5**

iii. What is Lean system? Describe principles and benefits of a lean system for industries. **5**

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Faculty of Engineering

End Sem (Odd) Examination Dec-2019

ME3EI01 Operations Management

Programme: B.Tech. | Branch/Specialisation: ME

Duration: 3 Hrs. **Maximum Marks: 60**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

Q.1	i.	Delivery of service is **a. Intangible**	1
	ii.	Operations management is a **b. Transformation process**	1
	iii.	Advantage of global location is **c. Both**	1
	iv.	Strategy- Offering the products at lowest price in the industry is called **b. Cost leadership**	1
	v.	In which Layout arrangement of facility & equipment is kept according to the function performed **a. Process**	1
	vi.	Total Float **c. LFT-EFT**	1
	vii.	MRP stands for: **c. Materials Requirement Planning**	1
	viii.	Aggregate planning is concerned with determining the quantity and timing of production in the **c. Intermediate term**	1
	ix.	KANBAN is a **b. Pull system**	1
	x.	3-M and 5-S are related with **d. KAIZEN**	1
Q.2	i.	Define operations management and mention any two strategies. Definition..... 1mark Name of each strategy.....0.5 mark	2
	ii.	What are the major responsibilities of operations manager? Each responsibility.....0.5 mark	3
	iii.	What do you understand by evolution of operations management? Describe the scope of operations management in Indian industries. Define evolution of operations management.....1mark Scope of operations management.....4 marks	5
OR	iv.	Differentiate among goods and services with suitable examples (any five differences). Each difference with example .....1 mark	5
Q.3	i.	Describe integrated product development in brief using block diagram. Defining integrated product development.....1 mark Block diagram.....1 mark Description.....2 marks	4
	ii.	Determine the coordinates of the centre of gravity (Distribution centre) for the given problem. Coordinates (X,Y) of each destination and shipments from the distribution centre to each destination are given in the table below	6

Destination	X	Y	Quantity
D1	2	2	800
D2	3	5	900
D3	5	4	200
D4	8	5	100

Write formula and Find X coordinate.....3 Marks
Write formula and Find Y coordinate.....3 Marks

OR	iii.	Differentiate between DFM and DFE by giving suitable examples. Each difference.....1 mark	6
Q.4	i.	Explain the types of facility layouts in brief. Brief explanation of each layout.....1 mark	3
	ii.	What is project Management? Differentiate between CPM & PERT. (at least six differences) Definition of project Management.....1 mark Six Differences.....6 marks	7
OR	iii.	Solve the problem using information given in the table below.	7

Task	Immediate Predecessor	Task Time (in minutes)
a	—	0.2
b	a	0.2

			C	—	0.8
			d	c	0.6
			e	b	0.3
			f	d, e	1.0
			g	f	0.4
			h	g	0.3
		1. Draw a precedence diagram. 2. Assuming an eight-hour workday, compute the cycle time needed to obtain an output of 400 units per day. 3. Determine the minimum number of workstations required. 4. Assign tasks according to greatest number of following tasks. In case of a tie, use the tiebreaker of assigning the task with the longest processing time first. 5. Compute the resulting percent idle time and efficiency of the system. Assigning task.....1 mark precedence diagram.....2 mark compute cycle time.....1 mark minimum number of workstations.....1 mark Compute percent idle time.....1 mark Compute efficiency of the system..... 1 Mark	
Q.5	i.	What is vendor selection? Explain the process of vendor selection. Defining vendor selection.....1 mark Description of process.....3 marks	**4**
	ii.	What is MRP? Discuss inputs, outputs and objectives of MRP. Definition of MRP.....1 mark Inputs.....1 mark Outputs.....1 mark Objectives.....3 marks	**6**
OR	iii.	Define material management. Describe the objectives and elements of JIT Systems. Definition.....1 mark Objectives.....2 marks Elements of JIT.....3 marks	**6**
Q.6		Attempt any two:	
	i.	Define computer integrated manufacturing. Discuss its objectives and benefits for industries. Definition.....1 mark	**5**
		Objectives.....2 marks Benefits.....2 marks	
	ii.	What are the analytical tools for decision support system (DSS). Describe the process of any one tool for DSS. Types of tools.....1 mark Process description.....4 marks	**5**
	iii.	What is Lean system? Describe principles and benefits of a lean system for industries. Definition.....1 mark Principles of lean.....2 marks Benefits of lean .....2 marks	**5**

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