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

Enrollment No.....

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. Which of these would an operations manager not be responsible for? **1**

(a) Safety and maintenance (b) Sales and marketing

(c) Selecting suppliers (d) Recruiting employees

ii. Which of these managers would be least likely to be considered in an operations management role within an organization? **1**

(a) Production Manager (b) Reservations Manager

(c) Financial risk Manager (d) Quality Manager

iii. For which of the following industry humid climate is helpful **1**

(a) Cotton (b) Steel (c) Light Bulb (d) Automobile

iv. If the design capacity is 50 units per day, effective capacity is 40 units per day and actual output is 36 units per day than efficiency and percentage utilisation is: **1**

(a) 90% & 72% (b) 65% & 48%

(c) 82% & 78 % (d) 91% & 68%

v. Principle of Unit load states that **1**

(a) Materials should be moved in lots

(b) One unit should be moved at a time

(c) Both (a) and (b)

(d) none of these

vi. In an assembly line, what is the balance delay? **1**

(a) Line efficiency×100 (b) 100 - Line efficiency (in percentage)

(c) Line efficiency/100 (d) None of these

vii. Aggregate planning is capacity planning for: **1**

(a) The long range (b) The intermediate rang

(c) Short range (d) Typically one to three months

P.T.O.

viii. Who are the primary users of ERP systems? **1**
(a) Sales, marketing, customer service
(b) Accounting, finance, logistics, and production
(c) Customers, resellers, partners, suppliers and distributers
(d) All of these

ix. Used to signal to a supplier to send materials or parts to a stage. **1**
(a) Production Kanban (b) Move or Conveyance Kanban
(c) Vendor Kanban (d) None of these

x. The linking of computer with a communication system is called **1**
(a) Networking (b) Pairing
(c) Interlocking (d) Assembling

Q.2 i. Define order qualifier and order supplier. **2**

ii. Explain in brief the objectives of operations management. **3**

iii. Differentiate between product, goods and services by giving one example. **5**

OR iv. Explain the strategy framework for operations management. **5**

Q.3 i. Define capacity and capacity planning. **2**

ii. Define 3`S system. What are the difference between DFM and DFE? **8**

OR iii. Explain in detail what are the factors that influence the selection of location for a plant? **8**

Q.4 i. State objectives of material handling. **3**

ii. The company is engaged in the assembly of a wagon on a conveyor. 500 wagons are required per day. Production time available per day is 420 minutes. The other information is given below regarding assembly steps and precedence relationships. Find the minimum of work stations, balance delay and line efficiency. **7**

Task	A	B	C	D	E	F	G	H	I	J	K	Total
Time (sec)	45	11	9	50	15	12	12	12	12	8	9	195
Immediate predecessors	_	A	B	_	D	C	C	E	E	F. G, H, I	_	_

OR iii. Define traditional and concurrent design with the help of diagram. **7**

Q.5 i. Define JIT. What are the benefits of JIT? **4**

ii. Define aggregate operation planning. List the various strategies of aggregate planning. Describe various option of proactive strategy to match the demand of market. **6**

OR iii. Define MRP and MRP II. What are the benefits of MRP? **6**

Q.6 Attempt any two:

i. Briefly explain CIM. List and explain elements of CIM. **5**

ii. Define KANBAN system. Explain the working of KANBAN system with the help of diagram. **5**

iii. Write short notes on: **5**
(a) Lean system (b) Kaizen

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Marking Scheme
ME3EI01 Operations Management

Q.1	i.	Which of these would an operations manager not be responsible for? (b) Sales and marketing		**1**
	ii.	Which of these managers would be least likely to be considered in an operations management role within an organization? (c) Financial risk Manager		**1**
	iii.	For which of the following industry humid climate is helpful (a) Cotton		**1**
	iv.	If the design capacity is 50 units per day, effective capacity is 40 units per day and actual output is 36 units per day than efficiency and percentage utilisation is: (a) 90% & 72%		**1**
	v.	Principle of Unit load states that (a) Materials should be moved in lots		**1**
	vi.	In an assembly line, what is the balance delay? (b) 100 - Line efficiency (in percentage)		**1**
	vii.	Aggregate planning is capacity planning for: (b) The intermediate rang		**1**
	viii.	Who are the primary users of ERP systems? (b) Accounting, finance, logistics, and production		**1**
	ix.	Used to signal to a supplier to send materials or parts to a stage. (b) Move or Conveyance Kanban		**1**
	x.	The linking of computer with a communication system is called (a) Networking		**1**
Q.2	i.	Order qualifier and order supplier.		**2**
	ii.	Objectives of operations management		**3**
		1 mark for each objective	(1 mark * 3)	
	iii.	Difference b/w product, goods and services	4 marks	**5**
		Example	1 mark	
OR	iv.	Strategy framework for operations management		**5**
		Explanation	2 marks	
		Diagram	1 mark	
		Diagram explanation	2 marks	
Q.3	i.	Capacity and capacity planning.		**2**
	ii.	Definition of 3`S system		**8**
		1 mark for each (1 mark *3)	3 marks	
		Difference b/w DFM and DFE	5 marks	
OR	iii.	Factors that influence the selection of location for a plant		**8**
		1 mark for each factor	(1 mark * 8)	
Q.4	i.	Objectives of material handling		**3**
		1 mark for each objective	(1 mark * 3)	
	ii.	Find the, and.		**7**
		Network diagram	2 marks	
		Minimum of work stations	1 mark	
		Balance delay	1 mark	
		Line efficiency	1 mark	
		Cycle time	1 mark	
		Assign the work elements to work station	1 mark	
OR	iii.	Traditional design	1.5 marks	**7**
		Concurrent design	1.5 marks	
		Diagram	2 marks	
		Diagram explanation	2 marks	
Q.5	i.	Definition of JIT	1 mark	**4**
		Benefits of JIT	3 marks	
	ii.	Definition of aggregate operation planning	1 mark	**6**
		Strategies of aggregate planning	3 marks	
		Option of proactive strategy	2 marks	
OR	iii.	Definition of MRP and MRP II	2 marks	**6**
		Benefits of MRP	4 marks	
Q.6		Attempt any two:		
	i.	Explanation of CIM	2 marks	**5**
		Elements of CIM	3 marks	
	ii.	Definition of KANBAN system	1 mark	**5**
		Working of KANBAN system	2 marks	
		Diagram	1 mark	
		Diagram explanation	1 mark	
	iii.	Write short notes on:		**5**
		(a) Lean system explanation	2 marks	
		Diagram	0.5 mark	
		(b) Kaizen	2 marks	
		Diagram	0.5 mark	

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