

Indian Institute of Materials Management

DEC-2010

Post-Graduate Diploma in Materials Management

Graduate Diploma in Materials Management

PAPER-8

Operation Management

DATE: 19.12.2010

Max. Marks: 100

Time : 10.00am to 1.00pm

Duration : 03 hrs.

INSTRUCTIONS :

1. From Part 'A', answer four questions (Compulsory). Each sub-question carries 01 mark. **Total: 32 Marks**
 2. From 'B', answer any 3 out of 5 questions. Each question carries 16 marks. **Total Marks: 48**
 3. Part 'C', is a case study with sub questions (Compulsory) **Total Marks: 20**
 4. Use of calculator and/or mathematical table is permitted. Graph sheet can be used wherever necessary.
 5. Please read the instruction on the answer sheet.
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1. Select the correct option:
 - a. Which of the following is not a factor to be considered while taking a plant location decision:
 - i. Proximity to market
 - ii. Inventory management
 - iii. Availability of labour
 - iv. Sources of raw material
 - b. Which of the following is not an area covered under operations management:
 - i. Plant layout
 - ii. Inventory management
 - iii. Employee motivation
 - iv. All of the above
 - c. The ease of making changes required to produce a given set of part types is known as:
 - i. Machine flexibility
 - ii. Process flexibility
 - iii. Mix flexibility
 - iv. Product flexibility

- d. Which of the following is not a part of Juran's quality trilogy:
 - i. Quality planning
 - ii. Quality control
 - iii. Quality management
 - iv. Quality improvement
- e. Quality implies:
 - i. Conformance to specifications
 - ii. Fitness for use
 - iii. Fulfillment of customer needs
 - iv. All of the above

Fill in the blanks:

- f. Productivity goes up and _____ comes down as quality goes up
- g. Shigeo Shingo is associated with the concept of _____.
- h. _____ is a systematic approach to the upkeep of resources.

2. Match the following:

Column "A"	Column "B"
a. Continuous flow	i. High degree of customer contact
b. Intermittent flow system	ii. Streamlined flow of products
c. Pure service	iii. PDCA cycle
d. Service factory	iv. Absolutes of quality
e. Value engineering	v. Reduces costs and inventory
f. Standardization	vi. Set of activities undertaken to investigate the design of components in a product development process
g. Philip B. Crosby	vii. Increases the flow complexities
h. William Edwards Deming	viii. Low degree of labour intensity

3. State true or false:

- a. Production can be defined as adding or creating value.
- b. Operations management deals with tangible outputs while production management deals with intangibles.
- c. Juran is considered father of Japanese Quality Management System.
- d. The fishbone diagram is Ishikawa's contribution in the area of quality management.
- e. Bath tub curves are used to depict the failure rate of equipment over their life cycles.
- f. Seasonal inventory is used to absorb fluctuations in demand due to uncertainty.

- g. Assignable causes are those that occur due to random events that cannot be controlled.
- h. Locating service outlets, close to the demand point is an important requirement in a service system.

4. Give the full forms:

a.	ERP	b.	BPR	c.	CAD	d.	SQC
e.	WCM	f.	SCM	g.	TPM	h.	FMS

Part – B (answer any 3)

- 5. What is operations strategy? Discuss the emerging trends in the area of operations strategy.
- 6. a. Define product layout. What are its advantages and disadvantages vis-à-vis process layout.
b. Write a detailed note on aggregate planning and its strategies.
- 7. Draw the network diagram. Find critical path and project duration:

Activity	Predecessor	Duration (Weeks)
A	-	5
B	A	4
C	A	7
D	B	8
E	C	9
F	D, E	4

- 8. a. Discuss the importance of quality. What do you understand by quality circles. Explain their relevance in quality management.
b. 18 carpets were observed closely and the number of defects in their texture were noted. Draw a control chart for the number of defects.

No. of defects	0	1	2	3	4	5	6
No. of carpets	0	1	2	4	3	5	3

- 9. Write short notes on **ANY FOUR** of the following:
 - a. Capacity planning
 - b. MRP II
 - c. Material handling

- d. JIT
- e. TQM

Part – C (compulsory)

10. Samples each of size 100, of glass vessels were inspected. The results of the inspection are given below:

Sample No.	No. of Defectives	Sample No.	No. of Defectives
1	2	11	3
2	1	12	2
3	3	13	0
4	0	14	4
5	2	15	1
6	3	16	7
7	1	17	0
8	2	18	1
9	0	19	3
10	4	20	1

- a. Compute the UCL, LCL and CL for p and np charts.
- b. Draw p and np charts.
- c. Deduce if the process is in control or not. Give reasons in support of your answer.