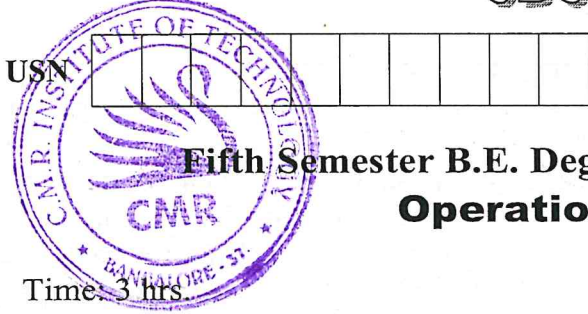USN | | | | | | | | | |

18ME56

Fifth Semester B.E. Degree Examination, Jan./Feb. 2021
Operations Management

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1   a. Define operations management and explain briefly how the production systems are classified. **(10 Marks)**

b. Explain briefly with a schematic model the functions within business organization and operation management. **(10 Marks)**

OR

2   a. What is decision making? Briefly explain the characteristics of operations decisions. **(10 Marks)**

b. Explain Break even analysis with necessary equations, graph and assumptions **(10 Marks)**

Module-2

3   a. Define forecasting and explain briefly the steps involved in forecasting process. **(10 Marks)**

b. Briefly explain the components of time series method with sketches. **(10 Marks)**

OR

4   a. Explain the following forecasting methods:
     (i)   Exponential smoothing.
     (ii)   Linear regression. **(10 Marks)**

b. A company adopts method of least squares to develop a linear trend equation for the data as shown in the table below:

Year (x)	1	2	3	4	5	6	7	8	9	10	11
Shipment in tones (y)	2	3	6	10	8	7	12	14	14	18	19

Calculate the trend forecast for the year 12 and 20. **(10 Marks)**

Module-3

5   a. Define the following :
     (i)   Design capacity
     (ii)   System capacity
     (iii) Capacity planning
     (iv)   Facility layout. **(10 Marks)**

b. Sketch and explain any two types of layouts. **(10 Marks)**

OR

6   a. What factors determines the types of layout used in an organization? **(05 Marks)**

b. What are the determinants of effective capacity and briefly explain any two of them? **(05 Marks)**

c. A metals processing firms wishes to install enough automatic moulders to produce 2,50,000 good castings per year. The moulding operation takes 1.5 minutes per casting, but its output is typically about 3% defective. How many moulders will required if each one is available for 2000 hours (of capacity) per year? **(10 Marks)**

Module-4

7 a. Define Aggregate planning and master scheduling. Explain the pure strategies used for aggregate planning in brief. **(10 Marks)**

   b. A firm has developed the following demand forecast in units for a item which is influenced by seasonal factors. Suppose the firm estimates that it costs Rs 150/unit to increase production rate Rs 200/unit to decrease production rate Rs 50/unit/month to carry the inventory and Rs 100/unit subcontracted. Compare the costs incurred if the pure strategies are followed.

Month	Jan	Feb	Mar	Apr	May	Jun	July	Aug
Forecast Demand	270	220	470	670	450	270	200	370

(10 Marks)

OR

8 a. Discuss the general techniques of aggregate planning process with flow chart. **(08 Marks)**

   b. State the functions of Master Scheduling. **(04 Marks)**

   c. What are the objectives and importance of Aggregate planning? **(08 Marks)**

Module-5

9 a. What is a Material Requirement Planning? What are the various steps involved in the implementation of MRP? **(08 Marks)**

   b. What are the benefits and limitations of MRP? **(06 Marks)**

   c. Define CRP and BOM. **(06 Marks)**

OR

10 a. What is Supply Chain Management? What are its functions? **(08 Marks)**

   b. Briefly explain Make or Buy decision. **(06 Marks)**

   c. Explain the different approaches to SCM. **(06 Marks)**

* * * * *