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Total number of printed pages – 2

B. Tech  
PCME 4404

**Eighth Semester Regular Examination – 2015**  
**PRODUCTION AND OPERATION MANAGEMENT**

**BRANCH : MECH**

**QUESTION CODE : J 308**

**Full Marks – 70**

**Time : 3 Hours**

*Answer Question No. 1 which is compulsory and any five from the rest.  
The figures in the right-hand margin indicate marks.*



1. Answer the following questions : 2×10
- (a) Distinguish between Product layout and Process layout.
  - (b) Write the factors that determine batch size in batch production and mass production.
  - (c) Name various tools (charts) used in method study.
  - (d) Write the application of Work Sampling.
  - (e) Write the expression for determining forecast error.
  - (f) What is Aggregate Planning ?
  - (g) List various dispatching rules used in job shop scheduling.
  - (h) What is the main objective of inventory control ?
  - (i) What are the important considerations for determination of safety stock ?
  - (j) Write the main principles of Total Productive Maintenance.
2. (a) Describe functions and scope of production management.
- (b) What is meant by Operations Strategies ? Write the factors that influence the formulation of operation strategy. 5+5

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3. (a) Describe the steps used in method study for improving a process. 5+5  
(b) Write the steps used for developing a new product.
4. (a) Explain various factors that should be considered for evaluating a site for a plant location. 5+5  
(b) Explain the importance and features of a good plant layout.
5. (a) Explain Level, Trend and Seasonal factors in Time Series Forecasting method. 5+5  
(b) The production volume for last eight years is as follows:  
445, 470, 490, 520, 540, 555, 570, 560  
Forecast the production volume for the ninth year using three months moving average. Determine forecast error.
6. (a) Explain how ABC analysis is useful in inventory control. 5+5  
(b) The annual consumption of a particular item is 3200 units. The cost of item is Rs.20 per unit. Cost of ordering is Rs4000 per order and rate of inventory carrying cost is 20%. Determine Economic Order Quantity.
7. (a) Explain Rough-cut method for capacity planning. 5+5  
(b) Explain Johnson's Rule for scheduling of jobs that are required to be processed in sequence through 2 machines. State, under what conditions this rule be applied for scheduling of jobs to be processed in sequence through 3 machines.
8. Write short notes on any **two** : 5 × 2  
(a) Flexible Manufacturing System.  
(b) Group Technology.  
(c) MRP.