2010

MASTER OF BUSINESS ADMINISTRATION

[Second Semester Examination]

(Production and Operations Management)

PAPER—205

Full Marks : 100

Time : 3 hours

The figures in the right-hand margin indicate marks

Candidates are required to give their answers in their own words as far as practicable

Illustrate the answers wherever necessary

Write the answers to questions of each Half in separate books

FIRST HALF

[*Marks* : 50]

1. Answer any *four* questions : 5

(*a*) Discuss the objectives of production and operations management.

(*b*) Discuss the suitability and advantages of product or line layout of plant facilities.

(*c*) Discuss the role of capacity planning.

(*d*) Explain the main principles of plant layout.

(*e*) Briefly explain the term 'aggregate planning'.

(*f*) What is demand forecasting ? Why is it necessary in production function ?

2. Answer any *two* questions : 10

(*a*) Discuss the macro issues involving project management.

(*b*) The past data about the load on a work centre are as follows :

Month	Load (Machine hours)
May 2009	1168
June 2009	1220
July 2009	1310
Aug 2009	1494
Sept. 2009	1724
Oct. 2009	1826
Nov. 2009	1926

(*i*) If a five months moving average is used to forecast the next month's demand, compute the forecast of the load on the centre in the month of Dec., 2009.

(*ii*) Compute a weighted three months moving average for Dec. 2009 where the weights are 0·5 for the last month, 0·3 and 0·2 for the other months, respectively.

(*iii*) Find an exponential smoothing forecast for the month of Dec. 2009. 1 + 2

(*c*) Discuss, in brief, the factors to be considered at the time of deciding on a plant location.

[*Internal Assessment* : 10 Marks]

SECOND HALF

[*Marks* : 50]

3. Answer any *four* questions : 5

(*a*) Define the terms 'quality control' and 'quality assurance'. What do you mean by statistical process control ?

(*b*) Assuming that the total observed time of an operation for assembling an electric switch is 1·00 min. If the rating is 120%, find normal time. If an allowance of 10% is allowed for the operation, determine the standard time.

(*c*) Explain the concept of Acceptance Sampling. State its benefits.

(*d*) BDL is a producer of special purpose electric bulbs. BDL's in-process inspection consist of checking a sample of 500 bulbs and noting any defectives. A bulb would be classified as defective based on one or more of the points in the checklist. The production process has had an average fraction defective of 0·020. Design 3 sigma control limits for the process.

(*e*) Explain briefly the concept of Optional Replenishment Policy.

(*f*) State the objectives of an effective maintenance programme.

4. Answer any *two* questions : 10 x 2

(*a*) Define briefly the concept of total factor productivity and partial factor productivity.

Discuss briefly some important methods for improving productivity in manufacturing industries. 3+

(*b*) A manufacturer requires 10,00,000 components for use in the organisation during the next year which is assumed to consist of 250 working days. The cost of storing one component for one year is Rs. 4 and the cost of placing order is Rs.32.

There must always be a safety stock equal to two working days usage and the lead time from the supplier, which has been guaranteed, will be five working days throughout the year.

Assuming that usage takes place steadily throughout the working days, delivery takes place at the end of the day and order are placed at the end of working day, you are required to calculate : (*i*) EOQ ; (*ii*) Re-order point. 5+

(*c*) Write short notes on any *two* : 5 + 5

(*i*) Average Outgoing Quality Level (AOQL)

(*ii*) Time study

(*iii*) Work sampling

(*iv*) Industrial safety.

[*Internal Assessment* : 10 Marks]