



IMT- 51

MANUFACTURING STRATEGY

Notes:

- Write answers in your own words as far as possible and refrain from copying from the text books/handouts.
- Answers of Ist Set (Part-A), IInd Set (Part-B), IIIrd Set (Part – C) and Set-IVth (Case Study) must be sent together.
- Submit the assignments in IMT CDL H.O. along with the assignments Question Papers for evaluation .
- Only hand written assignments shall be accepted.

A. First Set of Assignments

5 Questions, each question carries 1.5 marks.

B. Second Set of Assignments

5 Questions, each question carries 1.5 marks.

C. Third Set of Assignments

5 Questions, each question carries 1.5 marks. Confine your answers to 150 to 200 Words.

D. Forth Set of Assignments

Two Case Studies : 7.5 Marks. Each case study carries 3.75 marks.

SECTION - A

- What is manufacturing strategy? what are the tools used by management for formulating a manufacturing strategy?
- Explain the reactive role of manufacturing in the formulation of corporate strategy?
- Explain how manufacturing is related to the agreed market.
- Explain product mix pricing.
- Write short notes on:
 - Eight attributes of quality
 - Elements of reliability
 - Promotional pricing

SECTION - B

- Explain in detail process choice and product life cycle.
- Explain the generic strategies in detail.
- State and explain the lay out procedure in detail.
- What are the alternative approaches to focused manufacturing?
- Write short notes on
 - Downscoping
 - Benchmarking

SECTION - C

- What are the factors to be considered for taking a make or buy decision?
- Explain the three elements of partnering.
- What is meant by automation in manufacturing?
- Explain briefly the approaches in investment decision making.
- What are the two kinds of value and risks in portfolios?

CASE STUDY - 1

Compaq computer corporation has scrapped its long assembly lines and now makes its personal computers with three person cells that assemble the computers produced to order. in this arrangement a three-person team looks at the next customers order on a monitor to see the attributes of the computer to be assembled (accessories, type of drives, etc.) and assembles computer specifically for that customer. in the three person cells, one person prepares all the sub assemblies that go into a computer. the second person installs these into computer frames. the third person performs all the tasks to make sure the circuits are connected properly. in this method of production, parts and sub assemblies are inventoried before customer order are received, but finished product are not, final assembly occurs only after receipt of orders. this allows compaq to match production to customer orders and reduce cost of every step of production inventory, handling, freight, and unsold goods. shifting to a produce-to-order system also decreases compaq's dependence on market forecast. compaq says that output of each employee in three person cell increased 23% and output per sq. ft of the factory space increased 16% compared to produce-to-stock assembly lines.

Questions:

1. what are the advantages of cell type assembly lines?
2. how pull method of production is achieved in this case study?

CASE STUDY - 2

Northrop grumman is military aircraft manufacturer in the united states. air craft assembly is an expensive operation because of the labour intensity and sporadic quality problems involved in drilling millions of holes each year. more than 70000 holes are manually drilled and fastened per ship set in each of the northrop grumman's military air frames, accounting for nearly 44% of the total assembly cost.

The current method of hole drilling and counter sinking for fastener installation uses unique drill fixtures for each assembly and sub assembly processed, at an average cost of \$50,000/- each. well over 900 conventional drill fixtures are required for air frame assembly on each programme. each drill fixture is constructed through a laborious process. variations exists in the quality of drilled holes because each drill operator controls the drilling speed and feed as a hole is made with the air powered, handheld drill.

Northrop grumman is very interested in finding new production technologies to modernize its manufacturing operations particularly its hole drilling process. objective of its modernization effort is to identify automation opportunities for its assembly lines that will increase flexibility while simultaneously reducing direct labour cost and improving quality. in addition to increase the quality and efficiency of assembly processes areas must be identified where automation will eliminate the need for many of the assembly fixtures and drill templates currently in use, thereby reducing recurring and non recurring tooling costs.

Questions:

- 1) why there are variations in the quality of the holes drilled?
- 2) why modernization is sought by northrop grumman?
- 3) why hole drilling process is an important process for northrop grumman?

