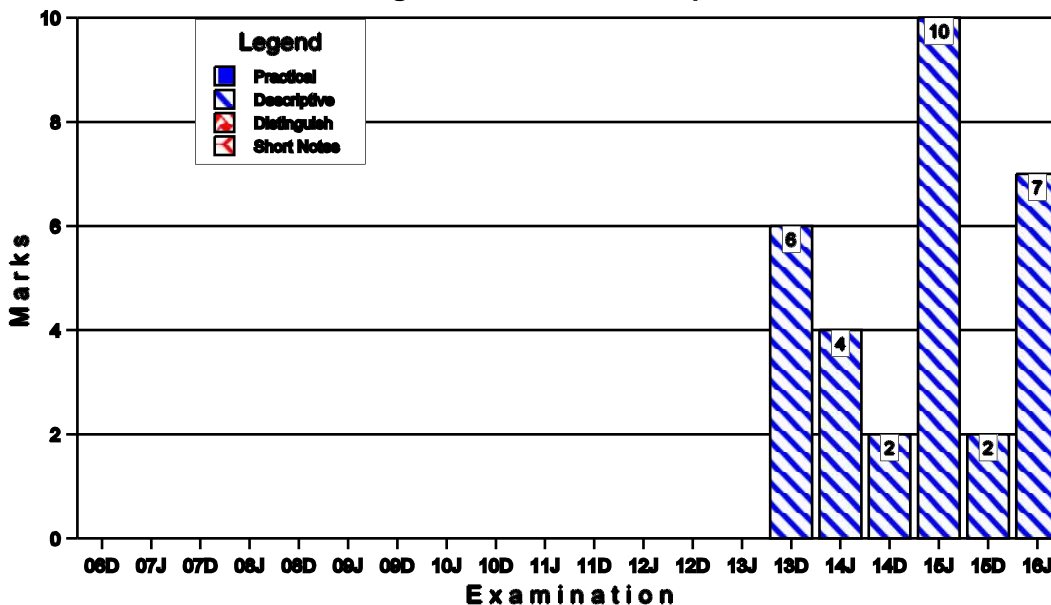


# 1

## Operations Management & Designing and Managing Operations

**This Chapter Includes :** Operations Management (OM): Introduction, Objectives, Scope; Operating System: Resources, Principal Functions, Structures; OM & Decision Making, OM in Business Policy Decisions, OM in Manufacturing, Designing of Goods & Services, Process Planning, Process Design, Process Management, Process Decisions, Process Flowcharting, Types of Processes, Process Analysis

### Marks of Short Notes, Distinguish Between, Descriptive & Practical Questions



### DESCRIPTIVE QUESTIONS

2013 - Dec [1] {C} (i) Give the formula for 'Throughput Time'.

(1 mark)

Questions of December - 2007 are from CMA Gr. III and from December - 2008 onwards are from CMA Gr. II New Course.

**Answer :**

$$\text{Throughput time} = \frac{\text{Work In progress}}{\text{Throughput rate}}$$

**2013 - Dec [4]** (a) What is 'Vertical integration'? State its pros and cons. conducted in order to ascertain the product acceptability. (1+ 4 = 5 marks)

**Answer :**

Vertical integration is the degree to which a firm's own production system handles the entire supply chain starting from procurement of raw materials to distribution of finished goods.

**Pros of Vertical Integration:**

- Lower costs due to eliminated market transaction costs
- Improved quality of supplies
- Critical resources can be acquired through VI
- Improved coordination in supply chain
- Greater market share
- Secured distribution channels
- Facilitates investment in specialized assets (site, physical-assets and human-assets)
- New competencies

**Cons of Vertical Integration**

- Higher costs if the company is incapable to manage new activities efficiently.
- The ownership of supply and distribution channels may lead to lower quality products and reduced efficiency because of the lack of competition.
- Increased bureaucracy and higher investments lead to reduced flexibility.
- Higher potential for legal repercussion due to size (An organization may become a monopoly).
- New competencies may clash with old ones and lead to competitive disadvantage.

**2014 - June [2]** (a) Write down the formula for:

(ii) Through put Ratio

(1 mark)

**Answer :**

$$\text{Through put Ratio} = \frac{\text{Throughput return per factory hour}}{\text{Cost per factory hour}}$$

**2014 - June [3]** (a) What are the various stages in the Design Process?

(3 marks)

**Answer :**

There are seven stages in the design process:

- (i) Ideas generation;
- (ii) Screening and selection;
- (iii) Initial design;
- (iv) Economic analysis;
- (v) Prototype testing;
- (vi) Redesign/modification;
- (vii) Final specification.

**2014 - Dec [1]** Answer the question:

- (c) List the various steps in New Product Development. (2 marks)

**Answer:**

**New Product Development includes following steps:**

- (i) Exploration;
- (ii) Screening;
- (iii) Business Analysis;
- (iv) Development;
- (v) Testing;
- (vi) Commercialisation.

**2015 - June [1]** (a) In what way does the objective of 'value engineering' differ from that of 'Value analysis'? (2 marks)

**Answer:**

'Value Engineering' aims at cost reduction at equivalent performance whereas 'Value Engineering' focuses on pre-production design improvement, value analysis, a related technique seeks improvements during the production process.

**2015 - June [2]** (c) (i) "The design of product is crucial to success in to-day's global competition". Justify the statement by providing the features of an excellent product design. (5 marks)

**Answer:**

A good product design can improve the marketability of a product by making it easier to operate or use, upgrading its quality, improving its appearance, and/or reducing manufacturing costs.

A distinctive design may be the only feature that significantly differentiates a product. An excellent design includes usability, aesthetics, reliability, functionality, innovation, and appropriateness.

An **excellent design** provides competitive advantage to the manufacturer, by ensuring appropriate quality, reasonable cost and the expected product features. Firms of tomorrow will definitely compete not on price and quality, but on product design.

The activities and responsibilities of product design include the following:

9.4

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- (i) Translating customer needs and wants into product and service requirements (marketing).
- (ii) Refining existing products (marketing).
- (iii) Developing new products (marketing, product design and production).
- (iv) Formulating quality goals (quality assurance, production).
- (v) Formulating cost targets (accounting).
- (vi) Constructing and testing prototype (marketing, production).
- (vii) Documenting specifications (product design).

**Objectives of Product Design:**

- (i) The overall objective is profit generation in the long run.
- (ii) To achieve the desired product quality.
- (iii) To reduce the development time and cost to the minimum.
- (iv) To reduce the cost of the product.
- (v) To ensure productibility or manufacturability (design for manufacturing and assembly).

**2015 - June [2]** (d) (i) How do you distinguish among Product Design, Process Design and Production Design? (3 marks)

**Answer:**

Product Design	Process Design	Production Design
Product design deals with conversion of ideas into reality.	Process design is a macroscopic decision-making of an overall process route for converting the raw material into finished goods.	A process converts inputs into outputs in a production system.

**2015 - Dec [1]** Answer the question:

- (a) Identify four principal functions of an operating system with reference to Operation Management. (2 marks)

**Answer:**

**Principal Functions of Operating System:** The following four principal functions are given below:

- (1) **Manufacture:** Manufacturing function is the one which involves some physical transformation or a change in the form utility of the resources. Something is physically created and the output consists of goods which differ physical (e.g., in terms of form, content etc.) from those materials input to the system.

- (2) **Transport:** This function of operating system provides a change in the place utility of something or someone in order to satisfy customer. The customer or something belonging to the customer is moved from place to place and thus results in the change in location. There is no major change in the form of resources.
- (3) **Supply:** This function provides a change in the possession utility of a resource, i.e., the ownership or possession of goods is changed. Unlike manufacture, outputs of the system are physically same as the inputs.
- (4) **Service:** This function primarily results in a change in the state utility of a resource. The principal common characteristic is the treatment or accommodation of something or someone. The state or condition of the physical outputs will differ from the inputs as they have undergone same kind of treatment.

**2016 - June [I]** Answer the question:  
 1. (b) State the disadvantages of 'Vertical Integration'. (2 marks)

**2016 - June [II]** Answer the question:  
 1. (b) 'Operations management is responsible for producing goods and/or services.'  
 In this context, define 'Operating System' and state the principal functions of an operating system. (1+4 = 5 marks)

<b>Table Showing Marks of Compulsory Questions</b>										
Year	11 D	12 J	12 D	13 J	13 D	14 J	14 D	15 J	15 D	16 J
Descriptive					1					
Total					1					