# Paper 9 – OPERATIONS MANAGEMENT & STRATEGIC MANAGEMENT

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**Full Marks: 100** **Time allowed: 3 hours**

**The figures in the margin on the right side indicate full marks.**
**This question paper has two sections.**
**Both the sections are to be answered subject to instructions given against each.**

## Section – A

**1. (a) Choose the correct answer:** **[1x10=10]**

**(i) Generally the size of the order for production in Job production is :**
- **(a) Small**
- **(b) Large**
- **(c) Medium**
- **(d) Very large**

**(ii) The activity of specifying when to start the job and when to end the job is known as:**
- **(a) Planning**
- **(b) Scheduling**
- **(c) Timing**
- **(d) Follow-up**

**(iii) In job production system, we need:**
- **(a) More unskilled labours**
- **(b) Skilled labours**
- **(c) Semi-skilled labours**
- **(d) Old people**

**(iv) The lead-time is the time:**
- **(a) To place holders for materials**
- **(b) Time of receiving materials**
- **(c) Time between receipt of material and using materials,**
- **(d) Time between placing the order and receiving the materials**

**(v) The method used in scheduling a project is:**
- **(a) A schedule of break-down of orders**
- **(b) Outline master programme**
- **(c) PERT & CPM**
- **(d) Schedule for large and integrated work**

**(vi) The act of going round the production shop to note down the progress of work and feedback the information is known as:**
- **(a) Follow up**
- **(b) Dispatching**
- **(c) Routing**
- **(d) Trip card**

**(vii)MRP stands for:**
- **(a) Material requirement planning**
- **(b) Material reordering planning**
- **(c) Material requisition procedure**
- **(d) Material recording procedure**

**(viii) One of the important charts used in programme control is:**
- **(a) Material chart**
- **(b) Gantt chart**
- **(c) Route chart**
- **(d) Inspection chart**

**(ix) Variety reduction is generally known as:**
- **(a) Less varieties**
- **(b) Simplification**
- **(c) Reduced varieties**
- **(d) None of the above**

**(x) Conversion of inputs into outputs is known as:**
- **(a) Application of technology**
- **(b) operations management**
- **(c) Manufacturing products**
- **(d) product**

**(b) Match the products in column-I with production centers in column –II: [1x6=6]**

| I | II |
|---|---|
| **(A) Electricity** | **(a) Blast Furnace** |
| **(B) Petrol** | **(b) generator** |
| **(C) Iron** | **(c) Refinery** |
| **(D) Cloth** | **(d) Assembly line** |
| **(E) Car** | **(f) spinning Mill** |
| **(F) Cotton yarn** | **(g) power Loom** |

**(c) State whether the following statements are True or False: [1x6=6]**

**(i) Method study should precede work measurement ( )**
**(ii) Increased productivity leads to cost reduction ( )**
**(iii) A good materials handling system always consists of conveyors ( )**
**(iv) Project costs increase as the duration of the project increases ( )**
**(v) It is desirable to conduct work measurement after method study( )**
**(vi) No handling is the best handling ( ).**

**Answer:**

(1) (a) (i) (a) Small
(ii) (b) Scheduling
(iii) (b) Skilled labours
(iv) (d) Time between placing the order and receiving the materials
(v) (c) PERT & CPM
(vi) (a) Follow up
(vii) (a) Material requirement planning
(viii) (b) Gantt chart
(ix) (b) Simplification
(x) (c) Manufacturing products

(b)

| I | II |
|---|---|
| (A) Electricity | (b) generator |
| (B) Petrol | (c) Refinery |
| (C) Iron | (a) Blast Furnace |
| (D) Cloth | (f) Power Loom |
| (E) Car | (d) Assembly line |
| (F) Cotton yarn | (e) Spinning Mill |

(c) (i) Method study should precede work measurement ( T )
(ii) Increased productivity leads to cost reduction ( T )
(iii) A good materials handling system always consists of conveyors ( F )
(iv) Project costs increase as the duration of the project increases ( T )
(v) It is desirable to conduct work measurement after method study( T )
(vi) No handling is the best handling ( T ).

**Answer any three questions from the following: [3x16=48]**

**2. (a) What are the principle functions of an operating system? [8]**
**(b) What are the characteristics of a good plant layout? [8]**

**Answer:**

**2. (a)** Operations Management concern with the conversion of inputs into outputs, using physical resources, so as to provide the desired utilities to the customer while meeting the other organizational objectives of effectiveness, efficiency and adoptability. It distinguishes itself from other functions such as personnel, marketing, finance, etc. by its primary concern for 'conversion by using physical resources'. Following are the activities, which are listed under Production and Operations Management functions:

1. Location of facilities.
2. Plant layouts and Material Handling.
3. Product Design.
4. Process Design.
5. Production and Planning Control.
6. Quality Control.
7. Materials Management.
8. Maintenance Management.


**Scope of production and operations management**

(b) **Characteristics of good plant layout-**

- Efficient utilisation of labour reduced idle time of labour and equipments,
- Higher flexibility (to change the layout easily),
- Higher utilisation of space, equipment and people (employees),
- Improved employee morale and safe working conditions,
- Improved flow of materials, information and people (employees),
- Improved production capacity,

- Reduced congestion or reduced bottleneck centers,
- Reduced health hazards and accidents,
- To allow ease of maintenance,
- To facilitate better coordination and face-to-face communication where needed,
- To improve productivity,
- To provide ease of supervision,
- To provide product flexibility and volume flexibility,
- To utilise available space efficiently and effectively.

**3. (a) Mention any six characteristics of a good Product Design. [6]**
**(b) The following data is available for a manufacturing unit:**

| | | |
|---|---|---|
| **No. of operators** | **:** | **15** |
| **Daily working hours** | **:** | **8** |
| **No. of days per months** | **:** | **25** |
| **Std. production per month** | **:** | **300 units** |
| **Std. Labour hours per unit** | **:** | **8** |

**The following information was obtained for November 2015:**

| | | |
|---|---|---|
| **Man days lost due to absenteeism** | **:** | **30** |
| **Unit produced** | **:** | **240** |
| **Idle Time** | **:** | **276 man hours** |

**Find the following:-**
**(a) Percent absenteeism**
**(b) Efficiency of utilization of labour**
**(c) Productive efficiency of labour**
**(d) Overall productivity of labour in terms of units produced per man per month. [10]**

**Answer:**

3. (a) A good product design must ensure the following:

**(i) Function or performance:** The function or performance is what the customer expects the product to do to solve his/her problem or offer certain benefits leading to satisfaction. For example, a customer for a motor bike expects the bike to start with a few kicks on the kick peddle and also expects some other functional aspects such as pick-up, maximum speed, engine power and fuel consumption etc.

**(ii) Appearance or aesthetics:** This includes the style, colour, look, feel, etc. which appeals to the human sense and adds value to the product.

**(iii) Reliability:** This refers to the length of time a product can be used before it fails. In other words, reliability is the probability that a product will function for a specific time period without failure.

**(iv) Maintainability:** Refers to the restoration of a product once it has failed. High degree of maintainability is desired so that the product can be restored (repaired) to be used within a short time after it breaks down. This is also known as serviceability.

**(v) Availability:** This refers to the continuity of service to the customer. A product is available for use when it is in an operational state. Availability is a combination of

reliability and maintainability. High reliability and maintainability ensures high availability.

**(vi) Productibility:** This refers to the ease of manufacture with minimum cost (economic production). This is ensured in product design by proper specification of tolerances, use of materials that can be easily processed and also use of economical processes and equipments to produce the product quickly and at a cheaper cost.

**(vii) Simplification:** This refers to the elimination of the complex features so that the intended function is performed with reduced costs, higher quality or more customer satisfaction. A simplified design has fewer parts which can be manufactured and assembled with less time and cost. "

**(viii) Standardisation:** Refers to the design activity that reduces variety among a group of products or parts. For example, group technology items have standardised design which calls for similar manufacturing process steps to be followed. Standard designs lead to variety reduction and results in economies of scale due to high volume of production of standard products. However, standardised designs may lead to reduced choices for customers.

**(ix) Specification:** A specification is a detailed description of a material, part or product, including physical measures such as dimensions, volume, weight, surface finish etc. These specifications indicate tolerances on physical measures which provide production department with precise information about the characteristics of products to be produced and the processes and production equipments to be used to achieve the specified tolerances (acceptable variations).

Interchangeability of parts in products produced in large volumes (mass production and flow-line production) is provided by appropriate specification of tolerances to facilitate the desired fit between parts which are assembled together.

**(x) Safety:** The product must be safe to the user and should not cause any accident while using or should not cause any health hazard to the user. Safety in storage, handling and usage must be ensured by the designer and a proper package has to be provided to avoid damage during transportation and storage of the product. For example, a pharmaceutical product while used by the patient, should not cause some other side effect threatening the user.

(Mention any six characteristics)

(b) No. of days per month = 25
Daily working hrs = 8
No. of operators = 15
No. of Man days = 15 × 25 = 375 Man days.
Total working hrs. = 375 × 8 = 3,000
Hours lost in absenteeism = 30 × 8 = 240

(i) Percent absentees $= \frac{240\text{ hrs.} \times 100}{3000\text{ hrs.}} = 8\%$

(ii) Efficiency of utilisation of labour $= \frac{\text{Standard labour hour to produce 240 units}}{\text{Total labour hour}}$

$$= \frac{240 \times 8}{3000} = 64\%$$

(iii) Standard time required to produce 240 units = 240 ×8 = 1920 labour-hours.

| | | |
|---|---|---|
| In November, man hours lost | = | 30 × 8 = 240 |
| ,, ,, idle time | = | 276 |
| Total loss of time | = | 516 hours. |
| Productive hours available in November | = | 3000 |
| Less, Total loss of time | = | 516 |
| Actual labour-hours | = | 2484 hours |
| Efficiency of labour | = | $\frac{\text{Std. Labour hrs.}}{\text{Actual Labour hrs.}} = \frac{1920 \times 100}{2484} = 77.3\%$ |

(v) 15 men produces 300 units,
Std. labour productivity = 300/15 = 20 units.
In November, overall productivity = 240/15 = 16 units. (Ans.)
i.e., productivity falls by 25%.

**4. (a) A captain of a cricket team has to allot five middle batting positions to five batsmen. The average runs scored by each batsman at these positions are as follows:**

| | Batting Position | | | | | |
|---|---|---|---|---|---|---|
| Batsmen | | III | IV | V | VI | VII |
| | A | 40 | 40 | 35 | 25 | 50 |
| | B | 42 | 30 | 16 | 25 | 27 |
| | C | 50 | 48 | 40 | 60 | 50 |
| | D | 20 | 19 | 20 | 18 | 25 |
| | E | 58 | 60 | 59 | 55 | 53 |

**Make the assignment so that the expected total average runs scored by these batsmen are maximum. [10]**

**(b) Table shows the time remaining (number of days until due date) and the work remaining (number of day's work) for 5 jobs which were assigned the letters A to E as they arrived to the shop. Sequence these jobs by priority rules viz., (a) FCFS, (b) EDD, (c) LS(d) SPT and (e) LPT. [6]**

| Job | Number days until due date | Number of days work remaining |
|---|---|---|
| A | 8 | 7 |
| B | 3 | 4 |
| C | 7 | 5 |
| D | 9 | 2 |
| E | 6 | 6 |

**Answer:**

4. (a)

| | III | IV | V | VI | VII |
|---|---|---|---|---|---|
| A | 40 | 40 | 35 | 25 | 50 |
| B | 42 | 30 | 16 | 25 | 27 |
| C | 50 | 48 | 40 | 60 | 50 |
| D | 20 | 19 | 20 | 18 | 25 |
| E | 58 | 60 | 59 | 55 | 53 |

Loss Matrix

| | | | | | |
|---|---|---|---|---|---|
| 20 | 20 | 25 | 35 | 10 |
| 18 | 30 | 44 | 35 | 33 |
| 10 | 12 | 20 | 0 | 10 |
| 40 | 41 | 40 | 42 | 35 |
| 2 | 0 | 1 | 5 | 7 |

Raw Operation

$M_3$

| | | | | | |
|---|---|---|---|---|---|
| 10 | 10 | 14 | 25 | 25 | 0 |
| 0 | 12 | 25 | 17 | 17 | 15 |
| 10 | 12 | 19 | 0 | 0 | 10 |
| 5 | 6 | 4 | 7 | 7 | 0 |
| 2 | 0 | 0 | 5 | 5 | 7 |

Column Operation

| | | | | |
|---|---|---|---|---|
| 10 | 10 | 15 | 25 | 0 |
| 0 | 12 | 26 | 17 | 15 |
| 10 | 12 | 20 | 0 | 10 |
| 5 | 6 | 5 | 7 | 0 |
| 2 | 0 | 1 | 5 | 7 |

Improved Matrix

| | | | | |
|---|---|---|---|---|
| 10 | 6 | 10 | 25 | 0 |
| 0 | 8 | 21 | 17 | 15 |
| 10 | 8 | 15 | 0 | 10 |
| 5 | 2 | 0 | 7 | 0 |
| 6 | 0 | 0 | 9 | 11 |

Maximum Average Runs

| | | | | |
|---|---|---|---|---|
| A | → | VII | - | 50 |
| B | → | III | - | 42 |
| C | → | VI | - | 60 |
| D | → | V | - | 20 |

(b)

(a) **FCFS (First come first served):** Since the jobs are assigned letters A to E as they arrived to the shop, the sequence according to FCFS priority rule is A B C D E

(b) **EDD (Early due date job first) rule:** Taking into account the number of days until due date, the sequence of jobs as per EDD rules is

| B | E | C | A | D |
|---|---|---|---|---|
| (3) | (6) | (7) | (8) | (9) |

(c) L.S. (Least slack) rule also called as Minimum slack rule.

Calculation of slack :

Slack = (Number of days until due date ) - (Number of days work remaining)

| Job | Slack | (Days) |
|---|---|---|
| A | 8-7 | = 1 |
| B | 3-4 | = (-1) |
| C | 7-5 | = 2 |
| D | 9-2 | = 7 |
| E | 6-6 | = 0 |

Sequence:

| B | E | A | C | D |
|---|---|---|---|---|
| -1 | 0 | 1 | 2 | 7 |

(d) SPT (Shortest Processing Time job first) also referred as SOT (Shortest Operation time job First) rule or MINPRT (Minimum Processing time job first) rule.

Sequence:

| D | B | C | E | A |
|---|---|---|---|---|
| 2 | 4 | 5 | 6 | 7 |

(e) LPT (Longest Processing time job first) also referred to as LOT (Longest operation time job first ) rule.

Sequence:

| A | E | C | B | D |
|---|---|---|---|---|
| 7 | 6 | 5 | 4 | 2 |

**5. (a) project with the following data is to be implemented,. Draw the network and find the critical path.**

| Activity | Predecessor | Duration(days) | Cost (₹ day) |
|---|---|---|---|
| A | - | 2 | 50 |
| B | - | 4 | 50 |
| C | A | 1 | 40 |
| D | B | 2 | 100 |
| E | A,B | 3 | 100 |
| F | E | 2 | 60 |

**1. What is the minimum duration of the project?**
**2. Draw a Gantt chart for early start schedule.**
**3. Determine the peak requirement money and day on which it occurs above schedule. [8]**

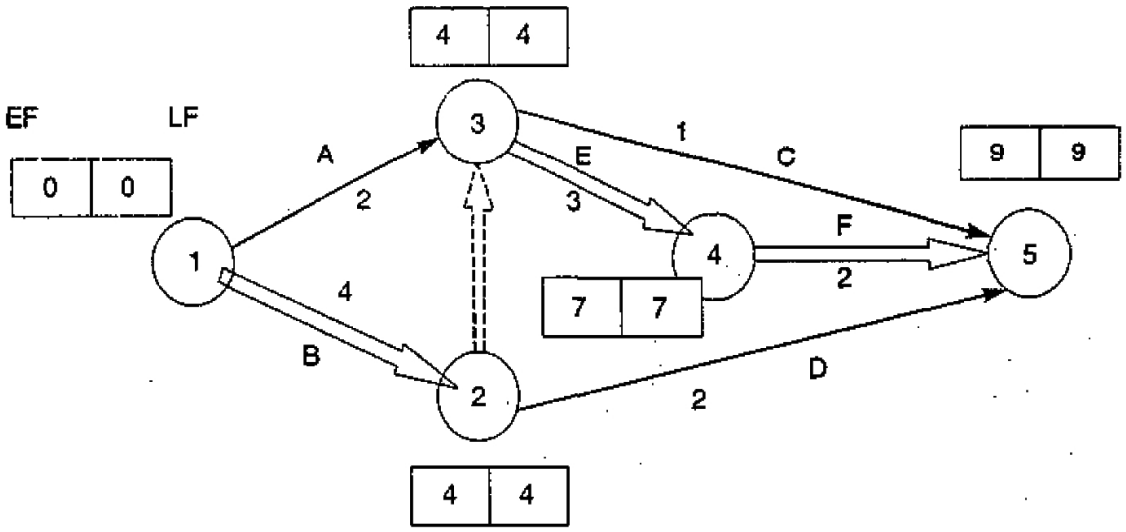
**(b) A public transport system is experiencing the following number of breakdowns for months over the past 2 years in their new fleet of vehicles: [8]**

| Number of breakdowns | 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| Number of months this occurred | 2 | 8 | 10 | 3 | 1 |

**Each break down costs the firm an average of ₹ 2,800. For a cost of ₹ 1,500 per month, preventive maintenance can be carried out of limit the breakdowns to an average of one per month. Which policy is suitable for the firm?**

**Answer:**

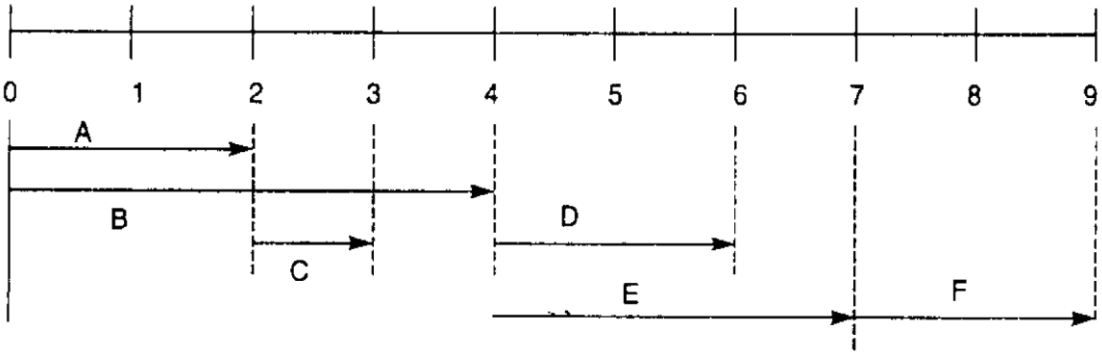
5. (a)




Critical Path 1 – 2 – 3 – 4 – 5
Minimum time = 9

**Table :** Activity Relationship

| Activity | t | ES (EF- t) | EF | LS (LF- t) | LF | Event Slack (LS-ES) (LF-EF) | On Critical Path |
|---|---|---|---|---|---|---|---|
| A | 2 | 0 | 2 | 2 | 4 | 2 | No |
| B | 4 | 0 | 4 | 0 | 4 | 0 | Yes |
| C | 1 | 4 | 5 | 8 | 9 | 4 | No |
| D | 2 | 4 | 6 | 7 | 9 | 3 | No |
| E | 3 | 4 | 7 | 4 | 7 | 0 | Yes |
| F | 2 | 7 | 9 | 7 | 9 | 0 | Yes |




(b) Converting the frequencies to a probability distribution and determining the expected cost/month of breakdowns we get:

| No. of breakdowns | Frequency in months | Frequency in per cent | Expected Value |
|---|---|---|---|
| 0 | 2 | 0.083 | 0.000 |
| 1 | 8 | 0.333 | 0.333 |
| 2 | 10 | 0.417 | 0.834 |
| 3 | 3 | 0.125 | 0.375 |
| 4 | 1 | 0.042 | 0.168 |
| | | **Total** | 1.710 |

Breakdown cost per month; Expected cost = 1.710 × ₹ 2800 = ₹ 4788.
Preventive maintenance cost per month: -
Average cost of one breakdown/month = ₹ 2, 800
Maintenance contract cost/month = ₹ 1,500
Total = ₹ 4,300.
Thus, preventive maintenance policy is suitable for the firm.

**Section – B**

**6. Choose the correct answer: [6x1=6]**

**(i) A corporate strategy can be defined as:**
- **(a) A list of actions about operational planning and statement of organization structure and control system:**
- **(b) A statement of how to compete, directions of growth and method o assessing environment;**
- **(c) Abatement of organization's activities and allocation of resources;**
- **(d) A course of action or choice of alternatives, specifying the resources required to achieve certain stated objectives;**
- **(e) A statement or where and how the company will prefer to operate.**

**(ii) A strategic business unit (SUB) is defined as a division of an organization:**
- **(a) That help in the marketing operations;**
- **(b) That enable managers to have better control over the resources;**
- **(c) The help in the choice of technology;**
- **(d) that help in the allocation of scarce resources;**
- **(e) That help in identifying talents and potentials of people**

**(iii) Benchmarking is:**
- **(a) The analytical too! To identify high cost activities based on the 'Pareto Analysis'.**
- **(b) The search for industries best practices that lead to superior performance;**
- **(c) The simulation of cost reduction schemes that help to build commitment and improvement of actions;**
- **(d) The process of marketing and redesigning the way a typical company works;**
- **(e) The framework that earmarks a linkage with suppliers and customers;**

**(iv) What are enduring statements of purpose that distinguish one business from other similar firms:**
**(a) Policies**
**(b) Mission statements**
**(c) Objectives**
**(d) Rules**
**(e) Nature of ownership**

**(v) Indian Airlines decreasing the airfare on the Delhi – Mumbai sector following the introduction of the no frills airlines would be an example of**
**(a) Cost leadership**
**(b) Price leadership**
**(c) Product differentiate**
**(d) Focus**
**(e) Market retention**

**(vi) Question mark in BCG Matrix is an investment, which**
**(a) Yields low current income but has bright growth prospects.**
**(b) Yields high current income and has bright growth prospects.**
**(c) Yields high current income and has bleak growth prospects.**
**(d) Yields low current income and has bleak growth prospects.**

**Answer:**

(6) (a) (i) (d) A course of action or choice of alternatives, specifying the resources required to achieve certain stated objectives;
(ii) (b) That enable managers to have better control over the resources;
(iii) (b) The search for industries best practices that lead to superior performance;
(iv) (b) Mission statements
(v) (b) Price leadership
(vi) (a) Yields low current income but has bright growth prospects.

**Answer any one of the following Question [1x12=12]**

**7. (a) What are differences between Vision and Mission? [5]**
**(b) Explain the objective of SWOT analysis and its advantages and criticism? [7]**

**Answer:**

(7) (a) There is a quote that 'great visionary can foresee the future in advance and take steps accordingly to be at forefront'.
So, we can say that:
(1) Vision provide a road map to company's future
(2) Vision indicates the kind of company management is trying to create for future.
(3) Vision specifies about company intention and capabilities to adapt to new technologies
(4) Vision also specifies management policies towards customers and societies.

The term 'mission' implies the fundamental and enduring objectives of an organization that set it apart from other organizations of similar nature. The mission is a general enduring statement of instruction of an organization.

Mission includes:
- A definition of products and services the organization provides.
- Technology used to provide these products and services.
- Types of markets.
- Customer need or requirement.
- Distinctive competencies.

(b) Objectives of SWOT analysis:

(1) SWOT analysis involves a systematic analysis of the internal strengths and weaknesses of a firm (financial, technological, managerial) and of the external opportunities and threats in the firm's environment (changes in the markets, laws, technology and the actions of the competitors). This will provide a basis for evaluating the extent to which the firm is likely to achieve its various objectives and for identifying new products and market opportunity. It is an internal appraisal of a firm. The purpose of SWOT analysis will be to expose the strengths and weaknesses of the firm.

(2) Further a SWOT Analysis will help in defining the strategic approach to be formulated that will fit in admirably with the environment.

(3) An analysis of Opportunities and Threats is concerned with identifying profit-making opportunities in the business environment and for identifying threats - e.g., falling demand, new competition, government legislation etc., it is thus an external appraisal, strengths and weaknesses analysis.

(4) Identification of shortcomings in skills or resources could lead to a planned acquisition programme or staff recruitment and training. Thus SWOT analysis helps in highlighting areas within the company, which are strong and which might be exploited more fully and weaknesses, where some defensive planning might be exploited more fully and weaknesses, where some defensive planning might be required to prevent the company from poor results.

**Advantages:**

The following may be termed as 'Opportunities' which should be timely utilised and availed of by the organisation gainfully:

(i) Seasonal/climatical demand of products
(ii) Global markets for the company's products/services (Export opportunities)
(iii) Rural markets to explore and to penetrate
(iv) To explore the markets in the undeveloped/under-developed/developing states/places
(v) To avail of the incentives/concessions declared by Central and State Governments
(vi) Diversifications opportunities
(vii) Mergers/acquisition opportunities
(viii) Good home market available due to boost in the economy
(ix) Liberalised policies of the Government both at Centre as well as State level for the individual production and industrial developments.

Similar to opportunities, there may be threats too prevailing from time to time, which must be examined and necessary action taken to be free from these or to solve these prudently so that loss to the organisation may be minimum. The probable threats, which may arise or be faced by the organisation, are listed out as under:

**Criticisms:**

(i) Globalisation
(ii) Competition
(iii) Price cutting war
(iv) Free imports
(v) Industrial unrest
(vi) Political instability
(vii) Quality thrusts
(viii) High and adverse debt equity ratio
(ix) Increase in financing cost
(x) Economic slowdown due to international recession impact

In the above Para, details of:
(i) Strengths
(ii) Weaknesses
(iii) Opportunities
(iv) Threats

Each and every factor of the SWOT would be analysed critically to find out a best alternative out of various alternatives available.

**8. (a) Discuss various stages in strategic planning. [6]**
**(b) Define SBU. What are its merits & demerits? [6]**

**Answer:**

(8) (a) The stages in strategic planning are given below:

**Stage I - Strategic Option Generations**
At this stage, a variety of alternatives are considered, relating to the firm's product and markets, its competitors and so forth. Examples of strategies might be:
(a) increase market share
(b) penetration into international market
(c) concentration on core competencies
(d) acquisition or expansion etc.

**Stage II - Strategic Options Evaluation**
Each option is then examined on its merits.
(a) does it increase existing strengths ?
(b) does it alleviate existing weaknesses ?
(c) is it suitable for the firm's existing position ?
(d) is it acceptable to stakeholders ?

**Stage III - Strategic Selection**
It involves choosing between the alternative strategies. This process is strongly influenced by the values of the managers in selecting the strategies.

(b) SBU groups similar divisions into "Strategic Business Units" and then delegate's authority and responsibility of each unit to a senior executive who is normally identified as CEO or MD of that SBU. It is an extension of Divisional structure.

**SBU Structure**
Big organisation like Unilever, etc have many SBUs for their different categories of products like Cosmetics, Food products and Beverages, etc, and each is managed through separate unit head.

**Advantages:**
(i) Promotes accountability since units' heads are responsible for individual SBU profitability
(ii) Career development opportunities are further higher in this structure
(iii) Allow better control of categories of products manufacturing, marketing and distributions
(iv) Helps to expand in different related and unrelated businesses

**Disadvantages:**
(i) May provide inconsistent approach to tackle customers, etc, because each unit may work in it's own way to handle situations

(ii) High cost approach

**9. Write a short note (any three) of the following: [3x4=12]**

**(a)** Strategic planning;
**(b)** Environment Analysis;
**(c)** BCG Matrix;
**(d)** Marketing mix.

**Answer:**

(9) (a) **Strategic Planning**

It is important to operate a planning process which will not only produce realistic and potentially rewarding plans but will also secure the support of all those involved in implementing them. There are three approaches that can be adopted to strategic planning:

(i) A top-down process, in which managers are given targets to achieve which they pass on down the line.

(ii) A bottom-up process, in which functional and line managers in conjunction with their staff submit plans, targets and budgets for approval by higher authority.

(iii) An iterative process, which involves both the top-down and bottom-up setting of targets. There is a to-and-from movement between different levels until agreement is reached. However, this agreement will have to be consistent with the overall mission, objectives and priorities and will have to be made within the context of the financial resources available to the organization. The iterative approach, which involves the maximum number of people, is the one most likely to deliver worthwhile and acceptable strategic plans.

(b) **Environment Analysis**

Environmental factors — both internal environment and external environment — are analysed to:

(i) identify changes in the environment,

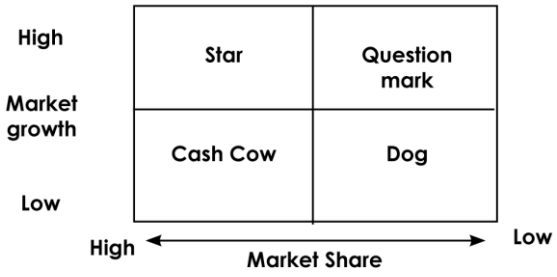
(ii) identify present and future threats and opportunities, and

(iii) assess critically it's own strengths and weaknesses.

Organisational environment encompasses all factors both inside and outside the organisation that can influence the organisation positively and negatively. Environmental factors may help in building a sustainable competitive advantage.

(c) **Boston Matrix:**

The Boston Consulting Group (BCG)'s matrix analyses 'products and businesses by market share and market growth.'



This growth/share matrix for the classification of products into cash cows, dogs, rising stars and question marks is known as the Boston classification for product-market strategy.

(i) Stars are products with a high share of a high growth market. In the short term, these require capital expenditure, in excess of the cash they generate, in order to maintain their market position, but promise high returns in the future.

(ii) In due course, however, stars will become cash cows, with a high share of a low-growth market. Cash cows need very little capital expenditure and generate high levels of cash income. The important strategic feature of cash cows is that they are already generating high cash returns, which can be used to finance the stars.

(iii) Question marks are products in a high-growth market, but where they have a low market share. A decision needs to be taken about whether the products justify considerable capital expenditure in the hope of increasing their market share, or whether they should be allowed to 'die' quietly as they are squeezed out of the expanding market by rival products. Because considerable expenditure would be needed to turn a question mark into a star by building up market share, question marks will usually be poor cash generators and show a negative cash flow.

(iv) Dogs are products with a low share of a low growth market. They may be ex-cash cows that have now fallen on hard times. Dogs should be allowed to die, or should be killed off. Although they will show only a modest net cash outflow, or even a modest net cash inflow, they are 'cash traps' which tie up funds and provide a poor return, on investment, and not enough to achieve the organisation's target rate of return.

(d) **Marketing mix**

Marketing mix is the pack of four sets of variables namely, product variables, price variables, promotion variables and place variable.

"Marketing Mix" refers to the appointment of effort, the combination, designing and integration of the elements of marketing into a programme or mix which, on the basis of an appraisal of the market forces will best achieve the objectives of an enterprise at a given time.

Kotler defines the marketing mix as the set of controllable variables and their levels that the firm uses to influence the target market. Such variables are:

(i) Product
(ii) Place
(iii) Price and
(iv) Promotion

In addition, for service-there are three more P's

They are:

(i) People
(ii) Processes and
(iii) Physical evidence.