PAPER - 9 : OPERATION MANAGEMENT AND STRATEGIC MANAGMENT

SUGGESTED ANSWERS

SECTION – A

PART - I

1. (a)

(i) (B)
(ii) (D)
(iii) (C)
(iv) (B)
(v) (C)
(vi) (C)
(vii) (D)
(viii) (C)
(ix) (C)
(x) (D)

1. (b)

(i) (D)
(ii) (C)
(iii) (F)
(iv) (A)
(v) (B)
(vi) (E)

1. (c)

(i) True
(ii) False
(iii) True
(iv) False
(v) True
(vi) False

PART - II

2. (a)

(i) Various Techniques which the Companies are employing to gain competitive advantage are listed below :

1. Total Quality Management (TQM),
2. Time-Based Competition,
3. Business Process Re-engineering (BPR),
4. Just—in-Time (JIT),
5. Focused Factory,
6. Flexible Manufacturing Systems (FMS),
7. Computer Integrated Manufacturing (CIM), and
8. The Virtual Corporation etc.

(ii) The Principal Customer wants are Summarized as under :

Principal Customer Wants		
Principal Function	Primary Consideration	Other consideration
Manufacture	Goods of a given, requested or acceptable specification.	Cost i.e. purchase price or cost of obtaining goods. Timing, i.e. delivery delay from order or request to receipt of goods.
Transport	Movement of a given, requested or acceptable specification	Cost, i.e. cost of movement. Timing i.e. (i) Duration or time to move. (ii) Wait, or delay from requesting to its commencement.
Supply	Goods of a given, requested or acceptable specification	Cost, that is purchase price or cost obtaining goods. Timing i.e. delivery delay from order or request to supply, to receipt of goods.
Service	Treatment of a given, requested or acceptable specification.	Cost, i.e. cost of treatment. Timing i.e. (i) Duration or timing required for treatment. (ii) Wait or delay from requesting to its commencement.

2. (b)

(i) Regression equation of Y on X

$$Y = 20+2x$$

(ii) Predicted Annual Sales for Expenditure on Advertising of Rs 5 Crore = Rs 30 Crore

(iii) Estimated expenditure on Advertising for Annual Sales of Rs 42 Crore = Rs. 11 Crore

3. (a) :

Three process strategies:

(i) Process Focus: Majority (about 75 per cent) of global production is devoted to low volume, high variety products in manufacturing facilities called job shops. Such facilities are organised around performing processes. For example, the processes might be welding, grinding or painting carried out in departments devoted to these processes. Such facilities are process focused in terms of equipment, machines, layout and supervision. They provide a high degree of product flexibility as products move intermittently between processes. Each process is designed to perform a wide variety of activities and handle frequent changes. Such processes are called intermittent processes. These facilities have high variable costs and low utilization of facilities.

(ii) Repetitive Focus: A repetitive process is a product-oriented production process that uses modules. It falls between product focus and process focus. It uses modules which are parts or components prepared often in a continuous or mass production process. A good example of repetitive process is the assembly line which is used for assembling automobiles and household appliances and is less flexible than process-focused facility. Personal computer is also an example of a repetitive process.

(iii) Product Focus: It is a facility organised around products, a product oriented, high-volume low-variety process. It is also referred to as continuous process because it has very long continuous production run. Examples of product focused processes are steel, glass, paper ,electric bulbs, chemicals and pharmaceutical products, bolts and nuts etc.

3. (b)

(i) Underlying principles in TQM :

1. Strive for quality in all things (Total Quality).
2. The customer is the creation of quality.
3. Improve the process or systems by which products are produced.
4. Quality improvement is continuous, never ending activity (continuous improvement - Kaizen).
5. Worker involvement is essential.
6. Ground decisions and actions on knowledge.
7. Encourage team work and cooperation.

(ii)

(i) Sequence:

Job	Q	Z	R	T	S	P
Z	-3	0	1	2	3	4

(ii) Sequence:

Job	Z	Q	S	T	P	R
Processing time (days)	10	8	6	5	4	3

(iii) Sequence:

Job	Q	Z	R	T	S	P
Critical Ratio	0.625	1	1.33	1.40	1.50	2

4. (a)

(i) & (ii)

Relative Loss Matrix

District / Sales Man	A	B	C	D
P	0	7	14	21
Q	12	17	22	27
R	12	17	22	27
S	18	22	26	30

As this is a problem of Maximization, the same is converted to one of minization by a Relative loss Matrix where all the elements of the given matrix are subtracted from the highest element of the matrix (40).

Matrix after Row Operation

District / Sales Man	A	B	C	D
P	0	7	14	21
Q	0	5	10	15
R	0	5	10	15
S	0	4	8	12

Matrix after Column Operation

District / Sales Man	A	B	C	D
P	0	3	6	9
Q	0	1	2	3
R	0	1	2	3
S	0	0	0	0

Maximum No. of Horizontal and vertical line = 2 ≠ 4

Improved Matrix (Non-Optimal)

District / Sales Man	A	B	C	D
P	0	2	5	8
Q	0	0	1	2
R	0	0	1	2
S	1	0	0	0

Minimum No. of Horizontal and vertical line = 3 ≠ 4

Further Improved Matrix (Optimal)

District / Sales Man	A	B	C	D
P	0	2	4	7
Q	0	0	0	1
R	0	0	0	1
S	2	1	0	0

Maximum No. of Horizontal and vertical line = 4 = 4. So the Solution is optimal.

Allocation can be done as under

District / Sales Man	A	B	C	D
P	[0]	2	4	7
Q	0	[0]	0	1
R	0	0	[0]	1
S	2	1	0	[0]

Alternative Allication as under

District / Sales Man	A	B	C	D
P	[0]	2	4	7
Q	0	0	[0]	1
R	0	[0]	0	1
S	2	1	0	[0]

Assignment - 1			**Assignment - 2**		
Sales man	**District**	**Sales (Rs in Thousand)**	**Sales man**	**District**	**Sales (Rs in Thousand)**
P	A	40	**P**	A	40
Q	B	23	**Q**	C	18
R	C	18	**R**	B	23
S	D	10	**S**	D	10
	TOTAL	**91**		**TOTAL**	**91**

4. (b)

(i) Average Waiting time of a Customer = 6.67 Minutes
OR = 4 minutes

(ii) Average idle time in the queue = 2.4 Minutes

5. (a)

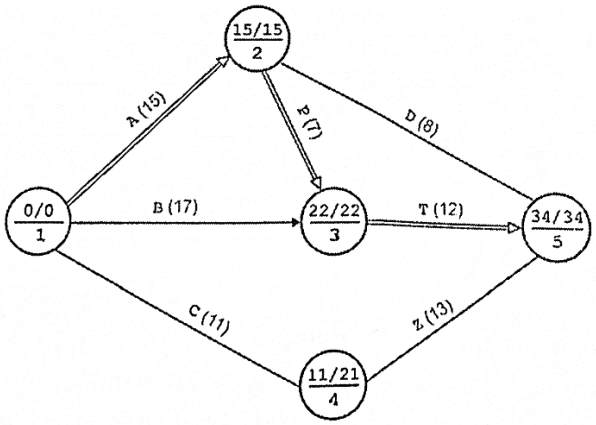
(i) The replacement time and average Annual Cost.

Age of Replacement (in Years)	**Average cost per year (AC) (Rs)**
1.	40000
2.	45000
3.	38333
4.	**37500**
5.	39000
6.	41667
7.	44286
8.	46250

(ii) After analyzing the average annual cost of all years stated in the table the value of average cost (Rs 37500) of Machine becomes minimum at the end of 4th Year. So, it will be economical to replace Machine at the end of every 4 years.

5. (b)

(i)



(ii) Critical Path : A → P → T (1 – 2 – 3) Completion time : 34 days.

(iii)

Activity and Identification		Duration (Days)	EST	LST	EFT	LFT	Total Float	Free Float (TF – HS)	Independent Float (FF – TS)
A	1 – 2	15	0	0	15	15	0	0	0
B	1 – 3	17	0	5	17	22	5	5	5
C	1 –4	11	0	10	11	21	10	0	0
D	2–5	8	15	26	23	34	11	11	11
P	2–3	7	15	15	22	22	0	0	0
T	3–5	12	22	22	34	34	0	0	0
Z	4–5	13	11	21	24	34	10	10	0

SECTION– B

PART – I

6.

(i) (D)

(ii) (C)

(iii) (B)

(iv) (A)

(v) (B)

(vi) (D)

PART - II

7. (a)

- The Guidelines for formulation of "Mission" Statement are summarized below:
- It should be based on existing business capabilities "Who we are and what we do"?
- It should follow the long term strategy principles.
- Profit making should not be the only mission of organization.
- It should be logical extension of business' existing capabilities.
- It should clearly and precisely present the future orientation of business.
- It should includes achievable missions
- It should be stated in a form that It becomes the motivating force to every member of organisation.
- Mission statement once formed shall be communicated to every member of organisation.
- It should include interest of customers and society.

7. (b)

The Steps involved in Strategic Planning are as follows:

(i) An Internal analysis that encompasses assessing company strengths and Weaknesses, financial performance, people, operational limitations, corporate culture, current positioning in the market(s), the overall characterization of the condition of the company and critical issues facing by the organization.

(ii) An external analysis that focuses on analyzing competitors, assessing market opportunities and threats, evaluating changing technology that could impact the organization, analyzing regulatory or legislative concerns, changes and trends in the market(s) the company operates in and other potential outside influences on the organization.

(iii) Summarizing the current situation based on the information gathered and evaluated in steps one and two. This step is important to the process because it brings together relevant and critical data and information and allows members of the planning team to more easily get a feel for what opportunities and obstacles lie ahead.

(iv) Development of a mission, vision or purpose statement. It really does not matter what it is called, but this step is important perhaps more because of the process that the team will go through to develop it than the words that eventually end up on paper. In this step, the team is starting the process of focusing the organization and its people on what the organization is all about and what is important to the organization.

(v) Goal setting. Every organization needs goals. Again, focus is a critical element in the success of any business. This step may be the most important of all of the strategic planning steps because it establishes the framework and basis for the development of the other key elements of the plan.

(vi) Defining objectives that support the goals. Objectives are more specific in nature and are supportive of the goal. They bring into even greater focus to the goals of the organization.

(vii) Development of strategies. Strategies begin defining how the goals and objectives are going to be achieved.

(viii) While not all strategic plans include tactics, a good strategic plan will include at least the key tactics thought to be important to supporting the strategies developed in step (vii). Generally tactics are more fully developed and added to the plan as time goes on. Tactics are the specific tasks associated with carrying out strategies.

8. (a)

The factors by which Structural drivers of Change are influenced, are enumerated below:

- **Increasing convergence of markets**
  In some markets the customers' needs and preferences are becoming more similar. As some markets globalise, those operating in such markets become global customers and may search for suppliers. Moreover marketing policies needs to be developed all over again.
- **Cost advantage of global operations**
  This benefit might accrue to industries that operate in large volume, standardised production and enjoy economies of scale. In order to realise location economies businesses search globally for low cost operations and enjoying competitive edge.
- **Activities and policies of the governments**
  The government policies and activities have also resulted In Influencing the globalisation of industry. The moves towards free trade and technical standardisation of many products between countries have resulted in increasing competition.
- **Global competition**
  It is the global competition that acts as a driver to globalisation. It may be mentioned that high level of import and export between countries increase interaction between competitors on a more global scale. The interdependence of companies across the world promotes global trade.

8. (b)

The Model Stages of BPR Project implementation are as follows:

- **The Envision stage:** the company reviews the existing strategy and business processes and based on that review business processes for improvement are targeted and IT opportunities are identified.
- **The initiation stage:** project teams are assigned, performance goals, project planning and employee notification are set.
- **The Diagnosis stage:** documentation of processes and sub-processes takes place in terms of process attributes (activities, resources, communication, roles, IT and costs).
- **The Redesign stage:** new process design is developed by devising process design alternatives and through brainstorming and creativity techniques.
- **The Reconstruction stage:** management technique changes occur to ensure smooth migration to the new process responsibilities and human resource roles.
- **The Evaluation stage:** the new process is monitored to determine if goals are met and examine total quality programs.

9. (a)

Various stages in the Strategic Management Framework:

- **Stage 1 :** In this stage, organization analyse about their present situation in terms of their Strengths, Weaknesses, Opportunities and Threats.
- **Stage 2 :** In this stage, organisations setup their missions, goals and objectives by analysing where they want to go in future.
- **Stage 3 :** In this stage organisation analyses various strategic alternatives to achieve their goals and objectives. The alternatives are analysed in terms of what business portfolio/product mix to adopt, expansion, merger, acquisition and divestment options etc. are analysed to achieve the goals.
- **Stage 4 :** In this stage organisations select the best suitable alternatives in line with their SWOT analysis

- **Stage 5 :** This is implementation stage in which organisation implement and execute the selected alternatives to achieve their strategic goals and objectives.

9. (b)

Approaches in 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.

9. (c)

Some contingency plans commonly established by firms are enumerated below:

(i) If a major competitor withdraws from particular markets as intelligence reports indicate, what actions should our firm take?

(ii) If our sales objectives are not reached, what actions should our firm take to avoid profit losses?

(iii) If demand for our new product exceeds plans, what actions should our firm take to meet the higher demand?

(iv) If certain disasters occur—such as loss of computer capabilities; a hostile takeover attempt; loss of patent protection; or destruction of manufacturing facilities because of earthquakes, tornadoes, or hurricanes — what actions should our firm take?

(v) If a new technological advancement makes our new product obsolete sooner than expected, what actions should our firm take?

9. (d)

Advantages and Disadvantages of SBU Structure:

The advantages and disadvantages of SBU Structure are depicted below:

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