

SUGGESTED ANSWERS TO QUESTIONS

INTERMEDIATE EXAMINATION

GROUP - II

(SYLLABUS 2016)

DECEMBER - 2021

Paper - 9 : OPERATIONS MANAGEMENT & STRATEGIC MANAGEMENT

Time Allowed : 3 Hours

Full Marks : 100

Section : A MCQ

20X1 = 20 Marks

Q.1 The best way of improving the productivity of capital is:

- Ans**
1. Purchase automatic machines
 2. Effective Labour control
 3. Productivity of capital is to be increased through effective materials management
 4. To use good financial management.

Q.2 Routing and Scheduling becomes relatively complicated in:

- Ans**
1. Flow production
 2. Batch production
 3. Mass production
 4. Job production

Q.3 MRP stands for:

- Ans**
1. Material Recording Procedure
 2. Material Requirement Planning
 3. Material Requisition Procedure,
 4. Material Reordering Planning

Q.4 One of the important charts used in Programme control is:

- Ans**
1. Material chart
 2. Route chart
 3. Gantt chart
 4. Inspection chart

Q.5 Number of product varieties that can be manufactured in Mass production is

- Ans**
1. Few varieties in large volumes
 2. One only
 3. Large varieties in small volumes.
 4. Two only

Q.6 In Production by disintegration the material undergoes:

- Ans**
1. Change in economic value only
 2. Change in physical and chemical characteristics
 3. Change in technology only
 4. None of these

Q.7 JIT stands for:

- Ans
1. Just in time order the material
 2. Just in time purchase
 3. Just in time use of materials
 - ✓ 4. Just in time production

Q.8 Production control concerned with:

- Ans
1. Good materials management
 2. Good product design.
 3. Strict control on labours
 - ✓ 4. Passive assessment of plant performance

Q.9 The time horizon selected for forecasting depends on:

- Ans
1. Time required for production cycle.
 2. The salability of the product
 3. The selling capacity of Salesman
 - ✓ 4. Purpose for which forecast is made

Q.10 The starting point of Production cycle is

- Ans
- ✓ 1. Market research
 2. Routing
 3. Product design
 4. ProductionPlanning,

Q.11 To decide work load for men and machines:

- Ans
1. Medium range forecasting is used
 2. A combination of long range and medium range forecasting is used
 - ✓ 3. Short term forecasting is used
 4. Long range forecasting is used

Q.12 Most suitable layout for Job production is:

- Ans
- ✓ 1. Process layout
 2. Line layout
 3. Matrix layout
 4. Product layout

Q.13 In general number of product varieties that can be manufactured in Flow production is:

- Ans
1. Five only
 2. Ten to twenty varieties
 - ✓ 3. One only
 4. Large varieties

Q.14 Most important benefit to the consumer from efficient production system is:

- Ans
1. He can get the product on credit
 2. He can save money
 3. He will have product of his choice easily available
 - ✓ 4. He gets increased use value in the product.

Q.15 For a marketing manager, the sales forecast is:

- Ans**
1. To plan the sales methods.
 2. Arranging the sales men to different segments of the market
 - ✓ 3. Estimate of the amount of unit sales for a specified future period
 4. To distribute the goods through transport to satisfy the market demand

Q.16 Production planning deals with:

- Ans**
1. What should be the demand for the product in future?
 - ✓ 2. What production facilities are required and how these facilities should be laid out in space available?
 3. What to produce and when to produce and where to sell?
 4. What is the life of the product?

Q.17 Conversion of inputs into outputs is known as:

- Ans**
- ✓ 1. Operations management
 2. Application of technology
 3. Product
 4. Manufacturing products

Q.18 The first stage in production planning is:

- Ans**
1. Process Planning
 2. Layout planning
 3. Operation Planning
 - ✓ 4. Factory Planning

Q.19 For production planning:

- Ans**
- ✓ 1. Short term forecasting is useful
 2. Medium term forecasting is useful
 3. Forecasting is not useful
 4. Long term forecasting is useful

Q.20 Scheduling deals with:

- Ans**
1. Number of machine tools used to do a job
 - ✓ 2. Fixing up starting and finishing times of each operation in doing a job
 3. Number of jobs to be done on a machine
 4. Different materials used in the product

Q.1 “The PEST Analysis looks at the external factors and is primarily used for marketresearch”. Is this statement correct?

Answer: Yes.

Q.2 What do you mean by Bar chart?

Answer: This is also called Gantt Chart. This is graphical representation of a series of activities drawn to a time scale.

Q.3 The systematic method of probing the future is called.....

Answer: Forecasting

Q.4 “Desired states or outcomes are objectives”. Is this correct?

Answer: Yes

Q.5 The term Operations Management is more used for a system where tangible goods are produced. Is this statement correct?

Answer: No.

Q.6 What is the first and foremost reason for Product design?

Answer: To offer new products to remain competitive in the market

Q.7 Is the below statement correct?

“PERT is suitable for non-repetitive projects while CPM is designed for repetitive projects”.

Answer: Yes

Q.8 “Increase in production does not necessarily mean the increase in productivity”. Isthis statement correct?

Answer: Yes

Q.9 “Production strategy plays crucial role in shaping the ultimate success of a firm”. Isthis correct?

Answer: Yes

Q.10 What is the underlying principle of preventive maintenance?

Answer: Prevention is better than cure

Q.11 What do you mean by Marketing Strategy?

Answer: It is finding out attractive opportunities and developing profitable ways to capture the market.

Q.12 Which type of capacity plan takes into account workforce size, overtime budgets, inventories, etc.

Answer: Short-term capacity plan.

Q.13 Production Planning and Control is essentially concerned with the control of Work-in-Process. Is this correct?

Answer: Yes

Q.14 'Strategy is likely to be concerned with the short-term direction of an organization'.Is this correct?

Answer: No.

Q.15 Job evaluation is a systematic approach to ascertain the labour worth of a job. Isthis correct?

Answer: Yes.

Q.16 The ratio of 'Down time due to total maintenance work' to the 'Downtime due to scheduled maintenance' is called Planning effectiveness, with respect to preventivemaintenance. Is this correct?

Answer: No.

Q.17 What is the term "Aesthetics?"

Answer: This includes style, colour, look, feel, etc. which appeals to the human sense and adds value to the product.

Q.18 KAIZEN is concerned with the continuous improvement. Is this statement correct?

Answer: Yes.

Q.19 To provide the 'right thing at the right price at the right time' can be closely associated with which objective of Operations Management?

Answer: Customer service

Q.20 "Seasonal/ Climatical demand of products" and "Global markets for company's products/services" may be the probable threats which may drive or to be faced bythe organization. Is this correct?

Answer: No.

Section : C
(4X12 = 48 Marks)
ONE LAQ

Q.1 With the help of following of following data, project the trend of sales for the next 7 years:

8 Marks

Years	2005	2006	2007	2008	2009	2010
Sales (In Lakhs Rs.)	90	95	100	110	125	140

Answer:

Sales forecast for the next 7 years:

Y2011 = Rs. 145 lakhs

Y2012 = Rs. 155 lakhs

Y2013 = Rs. 165 lakhs

Y2014 = Rs. 175 lakhs

Y2015 = Rs. 185 lakhs

Y2016 = Rs. 195 lakhs

Y2017 = Rs. 205 lakhs

Q.2 State the reasons, why Production or Operations Strategy is directly influenced byproduct design?

4 Marks

Answer:

- (i) As products are designed, all the detailed characteristics of each product are established.**
- (ii) Each product characteristic directly affects how the product can be made or produced (i.e., process technology and process design) and**
- (iii) How the product is made determines the design of the production system (production design) which is the heart of production and operations strategy.**

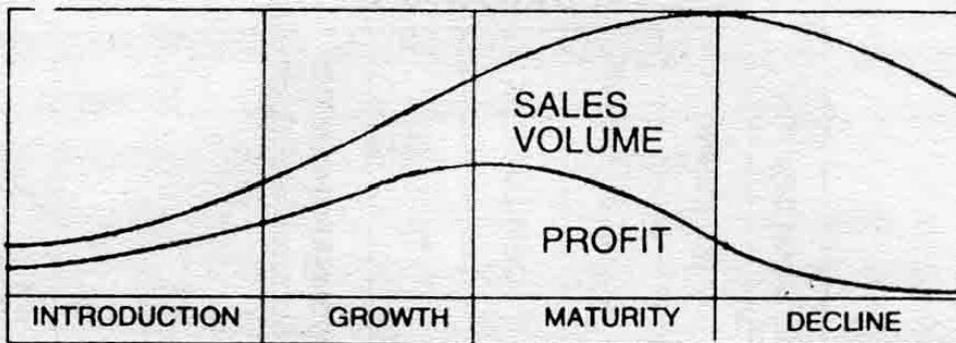
Q.1 Explain the various factors to be considered while determining the Economic LotSize for manufacturing.

Answer:

- (i) Usage rate: The rate of production of parts should match with the rate of usage of these parts in the assembly line.
- (ii) Manufacturing cost: Higher the lot size, lower will be the cost per unit produced because of distribution of set up costs for setting up production or machines and preparing paper work (production orders). But the carrying cost (handling and storing costs) will increase with increase in lot size.
- (iii) Cost of deterioration and obsolescence: Higher the lot size, higher will be the possibility of loss due to deterioration (items deteriorating

Q.2 Briefly describe four stages of Product Life Cycle.

Answer:



The introduction stage is preceded by „production planning and development“. This period requires greater investment. This investment should be gradually recouped as the sales pick up. The concept of life cycle would give the management an idea as to the time within which the original investment could be recouped. After testing, a product enters the introduction stage and the product will then become available in the national market. Sales would begin gradually as potential buyers learn of the product through advertising and other selling techniques. But the profits will be low as part of the investment is to be recouped besides heavy expenditure on selling. In the growth stage, both sales and profits will begin to increase. It is here that similar other new products begin to appear in the market as substitutes and offer competition. The management, therefore, should try to change its approach by changing its strategy from “buy my product” to “try my product”. At the end of this stage, the distribution arrangement is likely to get completed and the prices, if necessary, are reduced a little. The third stage is the maturity stage. During this stage the manufacturers introduce new models or adopt methods such as trading-in, etc., to promote the sale of their brands with a view to retaining their position in the market. The number of buyers will continue to grow, but more slowly. In economic terms this is the stage where supply exceeds demand. Some of the promotional efforts may lengthen the span of this stage but they will not offer a permanent solution.

At the final stage of decline, profit margins touch a low level, competition becomes severe and customers start using newer and better products. It is here that the story of a product ends-a natural but hard end.

THREE LAQ

6 Marks

Q.1 XYZ Co. Ltd. is committed to supply 25,000 components per annum to M/s ABC Co. on a steady daily basis. It is estimated that it costs 15 paise as inventory holding cost per component per month and that the setup per run of component manufacture is Rs. 350/-.

- (i) What is the optimum run size for component manufacture?[2]
- (ii) What should be the interval between the consecutive optimum runs?[2]
- (iii) Find out the minimum inventory holding cost.[2]

Answer:

- (i) Optimum Run size or Economic Batch Quantity (EBQ): = 3118 units.
- (ii) Interval Between two consecutive optimum runs: = $44.8 \approx 45$ days.
- (iii) Min. Inventory Handling cost = Rs. 2806.2/-

6 Marks

Q.2 What are the objectives of Just-in-Time (JIT) manufacturing?

Answer:

JIT Manufacturing: The specific goal of JIT manufacturing is to provide the right quality level at the right place. Customer demand always determines what is right. JIT tries to build only what internal and external customers want and when they want it. The more focused objectives of JIT are:

- (i) Produce only the products (goods or services) that customers want.
- (ii) Produce products only as quickly as customers want to use them.
- (iii) Produce products with perfect quality.
- (iv) Produce in the minimum possible lead times.
- (v) Produce products with features that customers want and no others.
- (vi) Produce with no waste of labour, materials or equipment, designate a purpose for every movement to leave zero idle inventory.
- (vii) Produce with methods that reinforce the occupational development of workers.

FOUR LAQ

8 Marks

Q.1

Job	Machine A	Machine B
1	6	4
2	5	2
3	3	8
4	1	6
5	9	5
6	7	2

In a factory, there are six jobs to perform, each of which should go through two machines A and B, in the order AB. The processing timings (in hours) for the jobs are given here. You are required to determine the sequence for performing the jobs that would minimise the total elapsed time, T. What is the value of T?

Answer:

Value of T = 33 hours

Q.2 What are the disadvantages of Matrix Organization Structure?

4 Marks

Answer:

Disadvantages of Matrix Organization Structure: (i) Complex structure as this contains both vertical and horizontal flow of information (ii) High-cost approach due to more management positions (iii) Dual lines of authority (iv) Conflicts arises in the allocation of resources

Q.1 A firm is using a machine whose purchase price is Rs. 12,000/-. The installation charges amount to Rs. 3,500/- and the machine has scrap value of Rs. 1,500 because the firm has a monopoly of this type of work. The maintenance cost in various years is given in the following table:

Year	1	2	3	4	5	6	7	8	9
Maintenance Cost (Rs.)	250	760	1200	1800	2500	3200	4100	5000	6000

(i) Find out Cost of machine.
Calculate the replacement period of the machine.

(ii) Determine the Optimal Replacement Period.

Answer:

- (i) Cost of Machine = Rs. 15500
Replacement period of Machine is 6th year.
- (ii) Here the lowest average cost is Rs. 3,951 approximately, in 6th year. Therefore, the machine may best be replaced every 6 years.

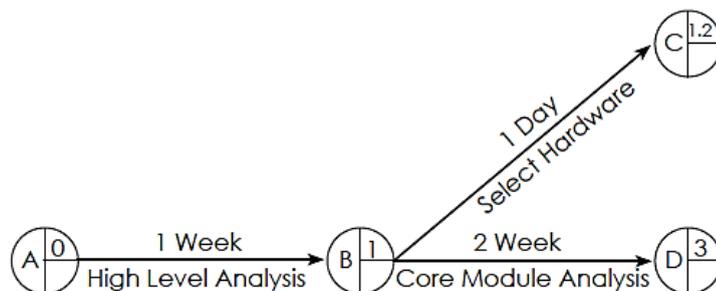
Q.2 Draw a Circle and Arrow Diagram to show two activities, that cannot be started until the first activity has been completed.

Answer:

Indicative example of Circle & Arrow Diagram

Here the activities of 'Select Hardware' and 'Core Module Analysis' cannot be started until 'High Level Analysis' has been completed.

Circle and Arrow Diagram showing two activities that cannot be started until the first activity has been completed.



and started

Q.1 Write short notes on Aggregate Planning

3 Marks

Answer:

Aggregate Planning: It is an intermediate-term planning decision. It is the process of planning the quantity and timing of output over the intermediate time horizon (3 months to one year). Within this range, the physical facilities are assumed to be fixed for the planning period. Therefore, fluctuations in demand must be met by varying labour and inventory schedule. Aggregate planning seeks the best combination to minimise costs. It is called „Aggregate Planning“ because the demand on facilities and available capacities is specified in aggregate quantities. For example. aggregate quantities of number of Automobile vehicles, Aggregate number of soaps etc. Intermediate Planning or Aggregate Planning, which is in between long range and short-term planning, which is concerned in generally acceptable planning, taking the load on hand and the facilities available into considerations. In aggregate planning the management formulates a general strategy by which capacity can be made to satisfy demand in a most economical way during a specific moderate time period, say for one year.

Q.2 Write short notes on Importance of Strategic Management

3 Marks

Answer:

Importance of Strategic Management: (i) Discover organization strengths and weaknesses (ii) Identify the available opportunities and possible threats (iii) Discover the objectives and goals in line with organizations strengths and available opportunities (iv) Implement changes to overcome weaknesses and manage the threats. (v) Provide vision/mission or direction to future of organizations (vi) Build a dynamic and strong organization.

Q.3 Write short notes on Process Planning

3 Marks

Answer:

Process Planning: Process planning refers to the way production of goods or services is organised. It is the basis for decisions regarding capacity planning, facilities (or plant) layout, equipment and design of work systems. Process selection is necessary when a firm takes up production of new products or services to be offered to the customers. Three primary questions to be addressed before deciding on process selection are:

- (i) How much variety of products or services will the system need to handle?
- (ii) What degree of equipment flexibility will be needed?
- (iii) What is the expected volume of output?

Q.4 Write short notes on Stages in Strategic Planning

3 Marks

Answer:

Stages in Strategic Planning:

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?

Q.5 Write short notes on Scheduling

3 Marks

Answer:

Scheduling: "Scheduling" is the next important function of production planning and control after "Routing". It determines the starting and the completion timings for each of the operations with a view to engage every machine and operator of the system for the maximum possible time and without imposing unnecessary burden over them. Scheduling is the determination of the time that should be required to perform each operation and also the time that should be required to perform the entire series as routed. Scheduling involves establishing the amount of work to be done and the time when each element of the work will start or the order of the work. Scheduling technique is an important technique of determining the starting and the completion timings of each operation and that of the total manufacturing process so that the man and machines can be utilized to the maximum.

Q.1 You are working as a Production Manager in a manufacturing unit. The executive management of this company has decided to go for the ISO certification for this unit. For this purpose, you are appointed as a Management Representative to ensure successful implementation of ISO certification. Now answer the following:

- (i) What are all those broad activities that you have to consider for such responsibility?
- (ii) What are the five standards associated with ISO 9000 series, that you have to thoroughly refer to, for finding out the best fitment for your unit?
- (iii) In which scenarios, ISO certification is a must, and is particularly helpful?
- (iv) When is it reviewed?

Answer:

- (i) ISO certification is an elaborate and expensive process. You need to document how workers of your unit perform every function that affects quality and install mechanisms to ensure that, they follow on expected lines. ISO 9000 certification entails a complex analysis of management systems and procedures. Rather than judging the quality of a particular product, ISO 9000 evaluates the management of the entire manufacturing process, from purchasing, to design, to training. You must fill out a report and then be certified by a team of independent auditors. With certification comes registration in an ISO directory, that your firm (seeking suppliers) can refer to, for a list of certified companies. They are generally given preference over unregistered companies.
- (ii) Quality System: 9001 Model for Quality Assurance in Design, Production, Installation and Servicing. (To be used when conformance to specified requirements is to be assured by the supplier during several stages that may include design/development, production, installation and servicing). 9002 Model for Quality Assurance in Production and Installation. (To be used when conformance to specified requirements is to be assured by the supplier during production and installation). 9003 Model for Quality Assurance in Final Inspection Test. (To be used when conformance to specified requirements is to be assured by the supplier solely at final inspection and test). Guidelines for Use: 9000 Quality Management and Quality Assurance Standards - Guidelines for Selection and Use. 9004 Quality Management and Quality System Elements – Guidelines
- (iii) ISO certification is a must for doing business with any member of the EU. In addition to the benefits of accessing the EU, ISO 9000 certification and registration is particularly helpful for companies that do not currently have a quality management system, as it provides guidelines for establishing the system and making it effective.
- (iv) ISO standards are reviewed every 5 years and revised, if needed. This helps ensure they remain useful tools for market place.