MGT613 (2008 t0 2011) Final Term subjective

Solved By

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Paper#1

How would you justify the reduced set up times and delivery lead times in a JIT system? Marks 3

Reduced setup time: In a traditional manufacturing setting, producers attempt to distribute machine setup costs across multiple parts. So while the company may only need 25 widgets for the job at hand, the machine operator cranks out 100 while he's at it. A JIT system eliminates this extra production. To implement just-in-time, engineers look for opportunities to reduce setup time. This can be achieved by standardizing parts, adding auxiliary equipment, adding manpower to the setup process, organizing workstations, and otherwise reevaluating the manufacturing process.

Consider a NASCAR team that can change four tires and fill a tank of gas in 20 seconds. The team has specialized equipment and processes in place to meet those outstanding turn times, and similar opportunities are available in many manufacturing environments.

OR

At the time of JIT implementation Reduce lot size and lead times. Once setup times are reduced, we can reduce the lot or batch size. Reducing the setup times and batch sizes cause the lead times to significantly decrease.

Another solution from web

Reduce or eliminate setup times: Aim for single digit setup times (less than 10 minutes) or "one-touch" setup -- this can be done through better planning, process redesign, and product redesign.

Reduce lead times (production and delivery): production lead times can be reduced by moving work stations closer together, applying group technology and cellular manufacturing concepts, reducing queue length (reducing the number of jobs waiting to be processed at a given machine), and improving the coordination and cooperation between successive processes; delivery lead times can be reduced through close cooperation with suppliers, possibly by inducing suppliers to locate closer to the factory.

http://www.beyondlean.com/JIT.html

PERT analysis helps you to schedule and manage complex projects. List down the benefits of PERT analysis. 3 marks

Advantages of PERT

1. Forces managers to organize

2. Provides graphic display of activities

3. Identifies

4. Critical activities

5. Slack activities PAGE#196.

OR

Banefits of PERT:

PERT is useful because it provides the following information:

1.Expected project completion time

2. Probability of completion before a specified date

3. The critical path activities that directly impact the completion time

4.The activities that have slack time and that can lend resources to critical path activities

5. Activities start and end dates

What is service level? Generally speaking, how is service level related to the amount of safety stock held? Marks 5

Service Level: Service Level means that the probability that demand will not exceed supply during lead time.

Safety Stock (SS): Safety Stock - Stock that is held in excess of expected demand due to variable demand rate and/or lead time.

The amount of safety stock an organization chooses to keep on hand can dramatically affect their business. Too much safety stock can result in high holding costs of inventory. In addition, products which are stored for too long a time can spoil, expire, or break during the warehousing process. Too little safety stock can result in lost sales and, thus, a higher rate of customer turnover. As a result, finding the right balance between too much and too little safety stock is essential. Page#151

Organizations use an integrated information system that supports many enterprise processes and data storage needs. Which information system here is referred to and what are its strategy considerations?(Check it again)

Enterprise resource planning (ERP): often called the rightful next step in an evolution that began with MPR and evolved into MRPII. Integration of financial, manufacturing, and human resources on a single computer system.

ERP Strategy Considerations

1. High initial cost
2. High cost to maintain
3. Future upgrades
4. Training page#162

PAPER#2

What are the salient features of six sigma quality management? Marks 3

The salient features of Harry's approach to six sigma implementation are described below:

- Leadership is provided by a team of deployment champions, project champions at corporate and department levels respectively. This team is similar to *Quality Improvement Council* in Juran's approach.
- The experts referred to as black belts, work full time on projects at process level to solve critical problems and achieve bottom line results. In Juran's approach black belt is equivalent to the diagnostician.
- Black belts are trained by master black belts on statistics, quantitative benchmarking, process control techniques, experimental design and design for manufacturability.
- There is a well structured project management approach. The champions select projects based on business strategy and the projects are defined precisely and the gains calculated, prioritized, then meticulously implemented and reviewed.

http://articles.isl.co.in/index.php/quality-management-philosophies-part-3/

What are the various assumptions an operations manager needs to consider for implementing priority rules? M arks 5

Assumptions to Priority Rules

1. The set of jobs is known, no new jobs arrive after processing begins and no jobs are canceled.

2. Setup time is deterministic

3. Processing times are deterministic rather than variables.

4. There will be no interruptions in processing such as machine breakdowns, accidents or worker illnesses page#185

Paper#3

Gantt charts are of various types. Give a brief description about al least two types of Gantt charts. 3 marks

Gantt chart - used as a visual aid for loading and scheduling

Two types of Gantt chart

Load chart – A type of Gantt chart that shows the loading and idle times for a group of machines or list of departments

Schedule chart – A type of Gantt chart that shows the orders or jobs in progress and whether they are on schedule or not. Page#181

"Six sigma is related to quality improvement" Elaborate this statement. Marks 5

Six Sigma is related to quality improvement. Quality problems are created by basically one cause, namely variation. To improve quality, variation must be measured, reduced, and prevented. Thus, for example, in a process where the output y is desired to be not more than a specification limit L, the best way to ensure that there is no out-of- specification or defective items is to make sure that there is a sufficient buffer between process mean and L. To do this, the variation or sigma value must be reduced. If there can be six sigma values between process mean and L, the process is said to be operating at a six sigma level.

(Also see page number 114)

MRP (Materials Requirement Planning) processing is made up of various components. Explain some of them. Marks 5

MRP Processing

1. Gross requirements

2. Schedule receipts

3. Projected on hand

4. Net requirements

5. Planned-order receipts

6. Planned-order releases page#157

Paper#4

How would you illustrate the problems that you may encounter in scheduling the service operations? Marks 3

Service Operation Problems

- Cannot store or inventory services
- Customer service requests are random
- Scheduling service involves

± Customers± Workforce± Equipment

http://www.scribd.com/doc/47718235/Chap-17-Scheduling

What would happen if customer's expected quality and perceived quality do not match? Explain by giving an example. Marks 3

Differences between Expected and Perceived Quality

ANS: Customers expect certain things from certain companies so that is called costumer expected quality. Everyone has perception of service quality
The perceived quality is the quality after the perceptions of costumer.

What is the importance of Material Requirement Planning (MRP)? Why companies should invest in the implementation of MRP system? (3+2)

A material requirement planning is a computer based information system that translates master schedule requirements for end items into time-phased requirements for raw materials, components, subassemblies.
Company should invest to improve the implementation of MRP SYSTEM because it is very important tool for the future planning of material needs. By MRP systems a company can improve its costumer services and reduce its cost. Also companies can control inventories, improved scheduling, and Productive relationships with suppliers.

Differentiate big vs. Little Just-In-Time System. Which one of the both answers the most pressing questions that an organization faces? 4+1

Big vs. Little JIT

1. Big JIT – broad focus (Includes Internal as well as External)

a. Vendor relations

b. Human relations

c. Technology management

d. Materials and inventory management

2. Little JIT – narrow focus Internal to organization

a. Scheduling materials

b. Scheduling services of production

By JIT systems organization can achieve a balanced smooth flow of production, it will flexible their system with reduction in wastes and lead time. Page#170

Paper#5

Illustrate the role of inventory as a capacity changing option in aggregate planning. Mark 3

Capacity Options: The common capacity options primarily focus on.

1. Hire and layoff workers

2. Overtime/slack time

3. Part-time workers

4. Inventories

5. Subcontracting

6. Maintain a level workforce

7. Maintain a steady output rate

8. Match demand period by period

9. Use a combination of decision variables

An important point to be noted is that Demand options are short range in nature while Capacity options are long duration (term or range) page#135

Ali takes vitamin tablets at a rate of 2 per day, which are delivered to his home 4 days after an order is placed. At what point should Ali reorder? Note: Provide answer with complete working. Failure to show working will result in deduction of marks 3 marks

Usage =2 tables per day
Lead time=4 days

ROP=Usage*lead time
ROP=2*4=8tables per day

There are many problems in the supply chain management. Enlist some of them. Challenges to an Effective Supply Chain Management

1. Barriers to integration of organizations

2. Getting top management on board

3. Dealing with trade-offs

4. Small businesses

5. Variability and uncertainty

6. Long lead times page#178

Define aggregate planning. Discuss its role in FMCG department of a departmental store. 5 marks

Aggregate planning: Intermediate-range capacity planning, usually covering 2 to 12 months.

FMCG, Food & Grocery

The FMCG, Food & Grocery business is characterized with relatively higher volumes and lower margins. The speed of movement of goods from the retail shelf drives the profitability of the business. The sale cycle is short and the entire inventory management has to be on a daily basis. The minimum number of pieces on the shelf and the fill ratio need to be carefully maintained. Price management is a critical factor in this segment. The price varies by season, by region, by specific days and even by store.

Project management software is used for scheduling, cost control and budget management, etc. what can be the other uses of project management software? Marks 5

Project management software is a key tool in your effort to consistently finish projects on time and within budget. Project management software lets you do the critical steps project managers must do more efficiently than silly options like scheduling on a yellow pad or in Excel. Those waste too much of your time to complete these critical steps:

1. Spotting problems early, not after it's too late to fix them
2. Optimizing the use of resources so you finish as early as possible
3. Updating the plan in a few minutes each week so you know where you are
4. Updating everyone's schedule in seconds when things change

Paper#6

Being the head of a quality control team of ABC company, what considerations

would you take into account for using control charts? Marks 3

Being the head of a quality control team of ABC company take following using control charts

Use of Control Charts

☐ At what point in the process to use control charts

☐ What size samples to take

☐ What type of control chart to use

1. Variables

2. Attributes page#124

Comment on the statement "Labor flexibility can be an advantage in services."3 marks

Labor Flexibility can be advantage in Services Labor often comprises a significant portion of service compared to manufacturing. That coupled with the fact that service providers are often able to handle a fairly wide variety of service requirements means that to some extent, planning is easier than manufacturing page#138

What are the various causes of disruption and why is it important to eliminate disruptions in a JIT system? Marks 3

(1) Disruption of social and political structures,
(2)Failure to match individuals' aptitudes with implementation tasks
(3) Inadequate top management support for implementation activities

What is service level? Generally speaking, how is service level related to the amount of safety stock held? Marks 5

Service level measures the performance of a system. Certain goals are defined and the service level gives the percentage to which they should be achieved.

Examples

- Percentage of calls answered in a call center.
- Percentage of customers waiting less than a given fixed time.
- Percentage of customers that do not experience a stockout.

The amount of safety stock an organization chooses to keep on hand can dramatically affect their business. Too much safety stock can result in high holding costs of inventory. In addition, products which are stored for too long a time can spoil, expire, or break during the warehousing process. Too little safety stock can result in lost sales and, thus, a higher rate of customer turnover. As a result, finding the right balance between too much and too little safety stock is essential.

ABC Company is a textile manufacturer. Why is it needed to implement supply chain management in this particular case? Marks 5

Supply chain management (also known as SCM) is a process of planning and implementation to help meet the customer needs quickly and efficiently. A lot of businesses are looking towards supply chain management to help them to work to their highest and fullest capacity. A large part of supply chain management depends on the implementation of the SCM planning. Sometimes it can be easy to make SCM plans, but then it is difficult to actually implement these plans.

Paper#7

What's the philosophy behind JIT?

Philosophy of JIT is simple:

The just-in-time inventory system focus is having "the right material, at the right time, at the right place, and in the exact amount"- inventory is waste. JIT inventory systems expose hidden causes of inventory keeping, and are therefore not a simple solution for a company to adopt. The company must follow an array of new methods to manage the consequences of the change. The ideas in this way of working come from many different disciplines including statistics, industrial engineering, production management, and behavioral science. The JIT inventory philosophy defines how inventory is viewed and how it relates to management**.**

2- Ali uses 2 tablets per day & the order takes 4days to be delivered, determine the re-order level?

Sol:

Usage =2 tables per day

Lead time=4 days

ROP=Usage*lead time

ROP=2*4=8tables per day

What is meant by independent demand and a firm can meet such type of demands?

Independent Demand:

Inventory control classification for items the demand for which has no relationship with the demand for any other item.

Components of Demand

•Average demand for a period of time

•Trend

•Seasonal element

•Cyclical elements

•Random variation

•Autocorrelation

Supply chain response may make or break the chain. What effective role a firm can play in making an effective SCM?

1.Develop strategic objectives and tactics.

2. Integrate and coordinate activities in the internal supply chain.

3. Coordinate activities with suppliers with customers.

4. Coordinate planning and execution across the supply chain.

5. Form strategic partnerships.

Question No: 47 (Marks: 5)

MRP (Materials Requirement Planning) processing is made up of various

components. Explain some of them.

MRP Processing

1. Gross requirements

a. Total expected demand.

2. Scheduled receipts

a. Open orders scheduled to arrive.

3. Planned on hand

a. Expected inventory on hand at the beginning of each time period.

4. Net requirements

a. Actual amount needed in each time period.

5. Planned-order receipts

a. Quantity expected to be received at the beginning of the period.

b. Offset by lead time.

6. Planned-order releases

a. Planned amount to order in each time period.

Question No: 43 (Marks: 3)

Why do older machines generally exhibit a higher degree of natural variability than do the newer machines?

The extent of natural variabilty inherit in a process differs from process to process, and changes over time.

As the older machines will genrally exhibit a higher degree of natural variability than the newer machines, partly because of worn parts and partly because of newer machines may incorporate designes improvements that reduce the variability of their output.

Question No: 47 (Marks: 5)

ABC Company is a textile manufacturer. Why is it needed to implement supply chain management in this particular case?

Need for Supply Chain Management

1. Improve operations

2. Increasing levels of outsourcing

3. Increasing transportation costs

4. Competitive pressures

5. Increasing globalization

6. Increasing importance of e-commerce

7. Complexity of supply chains

8. Manage inventories

Question No: 49 (Marks: 3)

How would you justify the reduced set up times and delivery lead times in a JIT system?s

At the time of JIT implementation Reduce lot size and lead times. Once setup times are reduced, we can reduce the lot or batch size. Reducing the setup times and batch sizes cause the lead times to significantly decrease.

Question No: 47 (Marks: 5)

Project management software is used for scheduling, cost control and budget management, etc. what can be the other uses of project management software?

Project management software is a term covering many types of software, including scheduling, cost control and budget management, resource allocation, collaboration software, communication, quality management and documentation or administration systems

Question No: 50 (Marks: 3)

How would you reveal the importance of maintaining good relationship with suppliers in a JIT system?

Reliable relationship between the suppliers. A good and long-term relationship between organization and its suppliers helps to manage a more efficient process in inventory management, material management and delivery system. It will also assure that the supply is stable and available when needed.

Important thing about just-in-time inventory practice is that companies should build trust and have good relationship with their suppliers because just-in-time practice requires stable, fast and flexible supply of materials. Only if they have food relationship can this be done.

Question No: 45 (Marks: 3)

Why is it important to minimize inventory in a Just-in-Time system?

By taking a JIT approach to inventory and product handling, companies can often cut costs significantly. Inventory costs contribute heavily to the company expenses, especially in manufacturing organizations. By minimizing the amount of inventory you hold, you save space, free up cash resources, and reduce the waste that comes from obsolescence.

Question No: 47 (Marks: 5)

What are the various goals, JIT strives to achieve?

Goal of JIT: The ultimate goal of JIT is a balanced system. JIT achieves a smooth, rapid flow of materials through the system. The ultimate as well as supporting goals are represented below in the form of a pyramid.

We need to pay special attention on building blocks along with secondary blocks as absence of one or more objectives can seriously harm the JIT production structure for any manufacturing or service based organization.

Secondary Goals

1. Eliminate disruptions

2. Make system flexible

3. Eliminate waste, especially excess inventory

Question No: 46 (Marks: 5)

Mr. Ali is appointed as a quality inspector at ABC Company. He is responsible for quality assurance that requires acceptance sampling. What are the various factors that he would consider for deciding which sampling plan to use?

Choosing a Plan

 Cost and time are prime determinants of choosing a plan.

 Primary considerations are number of samples needed and total number of observations required.

 Single sample has only one sample but large sample size.

 Where the cost to obtain a sample is high than cost of analyzing the sample, single sample plan is followed.

 Where inspection costs are higher than costs of obtaining the sample, multiple samples are carried to ensure that a good or bad result can help terminate the sample testing thus ensuring savings in inspection cost.

Question No: 44 (Marks: 3)

Ali takes vitamin tablets at a rate of 2 per day, which are delivered to his home 4

days after an order is placed. At what point should Ali reorder?

Note: Provide answer with complete working. Failure to show working will result in deduction of marks.

Answer:

Usage = 2 vitamins a day

Lead time = 7 days

ROP = Usage × Lead time

= 2 vitamins per day × 7 days = 14 vitamins

Thus, Ali should reorder when 14 vitamin tablets are left.

Question No: 52 (Marks: 5)

Organizations use an integrated information system that supports many enterprise processes and data storage needs. Which information system here is referred to and what are its strategy considerations?

Enterprise resource planning (ERP): often called the rightful next step in an evolution that began with MPR and evolved into MRPII. Integration of financial, manufacturing, and human resources on a single computer system.

ERP Strategy Considerations

1. High initial cost

2. High cost to maintain

3. Future upgrades

4. Training

Question No: 53 (Marks: 5)

Prior knowledge of job flow times is essential to effective planning, control and management of customer relationships. Explain job flow time and identify various components of job flow time. (1+4 marks)

Job Flow Time: The length of time a job is in the shop at a particular workstation or work center.

Job Lateness: This is the length of time the job completion date is expected to exceed the date the job was due or promised to a customer.

Makespan: This is the total time needed to complete a group of jobs. It is the length of time between the start of the first job in the group and the completion of the last job in the group.

Average Number of Jobs: Jobs that are considered in a shop are considered to be work in process inventory. Mathematically

Average Number of Jobs= Total Flow Time / Makespan.

OR

Job Flow Time: The length of time a job is in the shop at a particular workstation or work center

Components of job flow time

- Waiting time in queue
- Batch processing time
- Batch moving time
- Finished goods warehousing time.

Question No: 46 (Marks: 5)

Elaborate the term quality at the source and explain the various outcomes of adopting the philosophy of quality at the source.

Quality at the Source: The philosophy of making each worker responsible for the quality of his or her work.

Quality improvements in short order

Identify the defects

Reduce the waste of defects

Inspection throughout the value stream

Question No: 44 (Marks: 3)

What wou`ld be the annual ordering cost, if annual demand is 300 units where the order size is 250 units and ordering cost is Rs. 10 per order?

Note: Provide answer with complete working. Failure to show working will result deduction of marks.

Answer:

Annual ordering cost = no. of orders placed in a year x cost per order

= annual demand/order quantity x cost per order

annual demand= 300

order quantity=250

cost per order= 10

=300/250x10

= 12

Annual ordering cost is 12

Question No: 43 (Marks: 3)

Illustrate the role of inventory as a capacity changing option in aggregate planning.

Capacity Option in changing Inventory levels:

Increase inventory in low demand periods to meet the high demand in the future

Increase costs associated with storage, insurance, handling obsolescence and capital investments

Shortages can mean lost sales due to long lead times and poor customer service

Question No: 44 (Marks: 3)

What are the primary reasons for holding inventory?

1) To maintain independence of operations
2) To meet variation in product demand
3) To allow flexibility in production scheduling
4) To provide a safeguard for variation in raw material deliver time
5) To take advantage of economic purchase order size

Question No: 43 (Marks: 3)

What are the salient features of six sigma quality management?

Six Sigma Management concepts find greater appreciation and application in recent times. **The Six Sigma Management characteristics include:**

1. Providing strong leadership.

2. Defining performance merits.

3. Selecting projects likely to succeed.

4. Selecting and training appropriate people.

Six Sigma Technical aspects form a part and parcel of managerial strategy and aids in cost cutting and defect minimization. The Technical aspects of Six Sigma include:

1. Improving process performance

2. Reducing variation

3. Utilizing statistical models

4. Designing a structured improvement strategy

Question No: 45 (Marks: 3)

What are the various causes of disruptions and why is it important to eliminate disruptions in a JIT system?

causes of disruptions:

- Disruptions are caused by variety of causes:
- poor quality
- equipment breakdowns
- changes to the schedule
- late deliveries
- Installation of new equipment

Elimination of disruptions:

- To Make system flexible
- To Eliminate wastes
- To maintain excess inventory
- To maximize the productivity
- To reduce uncertainty of the system

Question No: 43 (Marks: 3)

Being the head of a quality control team of ABC company, what considerations would you take into account for using control charts?

At what point in the process to use control charts

What size samples to take?

What type of control chart to use?

1. Variables

2. Attributes

Question No: 44 (Marks: 3)

Comment on the statement "Labor flexibility can be an advantage in services."

Labor Flexibility can be advantage in Services Labor often comprises a significant portion of service compared to manufacturing. That coupled with the fact that service providers are often able to handle a fairly wide variety of service requirements means that to some extent, planning is easier than manufacturing

Question No: 46 (Marks: 5)

What is service level? Generally speaking, how is service level related to the amount of safety stock held?

Service Levels refer to the important elements of the service to be provided, usually stated in terms of results produced for customers.

Both are directly proportional. The lower the service level, the lower the requirement for safety stock.

Question No: 51 (Marks: 5)

As operations manager of a manufacturing firm, how can you judge the effectiveness of inventory management?

Effective Inventory Management

An Inventory Management System would be called Effective if it is able to fulfill the following requirements.

1. A system to keep track of inventory.

2. A reliable forecast of demand.

3. Knowledge of lead times.

4. Reasonable estimates of:

a. Holding costs

b. Ordering costs

c. Shortage costs

5. A classification system.

Question No: 52 (Marks: 5)

What is bullwhip effect? What are its consequences?

Bullwhip effect represents the real life time situation that Inventories are progressively larger moving backward through the supply chain.

Excessive Inventory

 As forecast inaccuracies become amplified up the supply chain, it can result in a highly inaccurate demand forecast being made by the producer. As a result, the producer may end up producing more of the product than the market is actually willing to accept.

Inefficient Production

 The bullwhip effect can lead to inefficient production. This happens when the producer does not have accurate demand data and cannot accurately produce the required amount of product ahead of time and cannot schedule production in an efficient way. This can lead to a reactive production, where the producer does not produce enough and then must rush to produce more.

Increases of Cost

 The most important effect that the bullwhip effect has is that it increases costs. This happens for a variety of reasons. When there is an inefficient production, it means that stock-outs will occur. Stock-outs result in lost revenues from sales that are missed. They can cause costly losses to a company's reputation and they can result in the competition gaining your customers. Also, inefficient production can be much more costly because it requires hiring and training extra staff, paying overtime wages and may require sourcing materials from the quickest (rather than cheapest) supplier.

What are the salient features of six sigma quality management?

ANS: following are the 4 salient features of sigma quality management

1. Selecting and training appropriate people.

2. Providing strong leadership.

3. Selecting projects likely to succeed.

4. Defining performance merits.

Question No: 40 (Marks: 3)

How would you illustrate the problems that you may encounter in scheduling the service operations?

Scheduling Difficulties

1. Variability in

a. Setup times

b. Processing times

c. Interruptions

d. Changes in the set of jobs

2. No method for identifying optimal schedule

3. Scheduling is not an exact science

4**. Ongoing task for a manager**

Question No: 41 (Marks: 5)

What would happen if customer's expected quality and perceived quality do not match? Explain by giving an example.

This gap is directly related to everyone's perception of service quality

 Customers expect certain things from certain companies

 When someone goes into a McDonalds to order their favorite meal – a Big Mac, they are expecting exactly what they are accustomed to getting (a quick, no hassle, tasty big burger with all the works). If it takes 15 minutes to get a Big Mac that doesn't even have the famous special sauce on it the customer's perceived service of McDonalds is going to plummet.

Question No: 42 (Marks: 5)

What is the importance of Material Requirement Planning (MRP)? Why companies should invest in the implementation of MRP system? (3+2)

A material requirement planning is a computer based information system that translates master schedule requirements for end items into time-phased requirements for raw materials, components, subassemblies.

Company should invest to improve the implementation of MRP SYSTEM because it is very important tool for the future planning of material needs. By MRP systems a company can improve its costumer services and reduce its cost. Also companies can control inventories, improved scheduling, and Productive relationships with suppliers.

Question No: 43 (Marks: 5)

Differentiate Big vs Little Just-In-Time System. Which one of the both answers the most pressing questions that an organization faces? 4+1

1. Big JIT: it has broad focus in, vendor relations, materials and inventory management, technology management, human relations

2. Little JIT: it has narrow focus Internal to organization, Scheduling materials, and Scheduling services of production.

By JIT systems organization can achieve a balanced smooth flow of production, it will flexible their system with reduction in wastes and lead time.

Question No: 47 (Marks: 5)

What are the various assumptions an operations manager needs to consider for

implementing priority rules?

Assumptions to Priority Rules

1. The set of jobs is known, no new jobs arrive after processing begins and no jobs are canceled.

2. Setup time is deterministic

3. Processing times are deterministic rather than variables.

4. There will be no interruptions in processing such as machine breakdowns , accidents or worker illnesses.

Question No: 45 (Marks: 3)

There are many problems in the supply chain management. Enlist some of them.

- Large inventories
- Long lead times
- Large number of parts
- Cost Quality
- Variability
- Inventory Management
- Dealing with trade-offs

Question No: 46 (Marks: 5)

Define aggregate planning. Discuss its role in FMCG department of a departmental store.

Aggregate planning is the process of developing, analyzing, and maintaining a preliminary, approximate schedule of the overall operations of an organization. The aggregate plan generally contains targeted sales forecasts, production levels, inventory levels, and customer backlogs.

Question No: 43 (Marks: 3)

Explain the importance of employee empowerment in TQM.

Employee empowerment is a new way of managing organizations towards a more complex and competitive future. A TQM strategy is deemed to fail if empowerment of employees is absent. Quality starts with engaging the people responsible for processes- the people who know the processes the best. Total Quality management has proven very successful in fostering

responsibility, motivation and belongingness in organizations with high autonomy and flexibility that how important the empowerment of the employees.

OR

Top management commitment and employees empowerment is one of the most important and vital principle in total quality management, because it is often assumes to have a strong relationship with customer satisfaction. In TQM implementation top management commitment in creating an organizational climate that empowers employees is very imperative.

Question No: 45 (Marks: 3)

Gantt charts are of various types. Give a brief description about al least two types of Gantt charts.

Gantt Load Chart

Gantt chart - used as a visual aid for loading and scheduling

Load chart – A type of Gantt Chart that shows the loading and idle times for a group of machines or list of departments

Schedule chart – A type of Gantt Chart that shows the orders or jobs in progress and whether they are on schedule or not.

Input/Output Control Chart – A type of Control Chart that shows management of work flow and queues at the work centers

Question No: 46 (Marks: 5)

"Six sigma is related to quality improvement" Elaborate this statment.

Six Sigma Programs are always directed towards quality improvement, cost cutting and time saving. Six

Sigma Programs are employed in:

- Design
- Production
- Service
- Operation management
- Inventory management

 Delivery