Rajasthan Institute of Engineering & Technology, Jaipur

University Roll No. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

1 st Year MBA 2 nd Semester II Mid-Term Examination, Feb – 2019

Subject: - operation and supply management SET- A

Time: - 2 Hrs. [Maximum Marks: -20]

[Min. Passing Marks: 08]

Instructions to the Candidates:

Attempt any 4 questions from Section A and Section B is Compulsory.

Section A

**1. What is operations management? (3)**

Operations management is the administration of business practices to create the highest level of efficiency possible within an organization. It is concerned with converting materials and labor into goods and services as efficiently as possible to maximize the profit of an organization. Operations management teams attempt to balance costs with revenue to achieve the highest net [operating profit](https://www.investopedia.com/terms/o/operating_profit.asp) possible.

Operations management is chiefly concerned with planning, organizing and supervising in the contexts of production, manufacturing or the provision of services. As such, it is delivery-focused, ensuring that an organization successfully turns inputs to outputs in an efficient manner. The inputs themselves could represent anything from materials, equipment and technology to human resources such as staff or workers.

**2. What is competitiveness and how it is useful in an organization? (3)**

Ability of a firm or a nation to offer products and services that meet the quality standards of the local and world markets at prices that are **competitive** and provide adequate returns on the resources employed or consumed in producing them.

Some are:

* Competitiveness, a driving factor that makes people work very hard, fosters personal development. Since such people are unwilling to be left out of competition, they have that inner drive to study more, work harder, and always improve on what they know or what they have.
* The top paying jobs are highly competitive. It takes people who possess competitiveness to attain such heights. Once you are there, you still need to be competitive to maintain that level. People who lack competitiveness are those who settle for menial jobs.
* That passion for finding out and trying new ways to beat competitors results in high creativity and innovative skills.
* It eliminates complacency and helps you explore the best in you.

**3. What is job design? (3)**

Job design (also referred to as work design or task design) is a core function of [human resource management](https://en.wikipedia.org/wiki/Human_resource_management) and it is related to the specification of contents, methods and relationship of jobs in order to satisfy technological and organizational requirements as well as the social and personal requirements of the job holder or the employee.[[1]](https://en.wikipedia.org/wiki/Job_design#cite_note-1) Its principles are geared towards how the nature of a person's job affects their attitudes and behavior at work, particularly relating to characteristics such as skill variety and autonomy.[[2]](https://en.wikipedia.org/wiki/Job_design#cite_note-2) The aim of a job design is to improve [job satisfaction](https://en.wikipedia.org/wiki/Job_satisfaction), to improve [through-put](https://en.wikipedia.org/wiki/Throughput_%28business%29), to improve quality and to reduce employee problems (e.g., grievances, absenteeism).

**4. Write importance and factors affecting the plant location? (3)**

Importance of Plant Location:
[**Plant location**](http://fashion2apparel.blogspot.com/2017/01/plant-selection-apparel-industry.html) with thorough analysis leads the organization towards success. The basic objective of organization is to maximize the profit level. Hence, it will be beneficial for both i.e. newly established business & already established business. The profit maximization can be done by increasing sales price, increasing sales with reduced production cost, by analyzing market trend, nature & level of competition etc. [**Production cost**](http://textilelearner.blogspot.com/2014/12/important-costing-tips-for-garments.html) can also be reduced, if firm is located at a place where all the basic requirements (that fulfill input needs) will be available easily.

Selection of appropriate location is necessary due to following reasons:

* Plant location partially determines operating and capital cost. It determines the nature of investment.
* Each plant location requires some basic facilities like transportation, availability of water, electricity, fuel, cheap labors etc.
* Each prospective location implies a new allocation of capacity to respective market area.
* Government plays an important role in the choice of the location keeping in view the national benefits.

Factors Affecting the Plant Location:
Many factors are considered while selecting a site. According to their importance these are classified as primary factors & secondary factors.

Primary factors:

* Raw material supply: Production process will continue properly when adequate supply of raw material is there. Raw material cost is a part of total production cost. Inadequate supply of [**raw material**](http://textilelearner.blogspot.com/2013/01/textile-raw-material-trm-different.html) will result in the reduction in production. It will increase downtime & hence reduce efficiency of industry. Due to this inadequacy, profit maximization may not be obtained. The time to transport & cost of transportation is also important. Hence, industries are situated where raw material is available easily.
* Nearness to market:This factor will produce the product to customer in short time period and hence it will be less damage to the product. It also reduces transportation cost. Also it will help the supplier to know the requirement of customers.
* Transportation Facility**:** While selecting a site one thing has to be considered that is transportation of any raw material, semi- finished & finished goods should be as less as possible. By this factor material will be transported less, which will affect the material quality, cost of transportation, time to transport etc. Hence for all above reasons producer has to select cheap & speedy transportation with various sources like road, airways, railways, waterways etc.
* Labor Supply: Labor is most effective part of the industry, who produces the product. The producer has to choose the site in such a way that labor should present in adequate quantity with low cost and labor would be skilled or unskilled. If labors are not present in sufficient numbers it will increase downtime of production and decrease plant efficiency.
* Power Supply: Electrical, diesel, automatic etc. energies are required to produce the product and also required for transportation. For continuous production process regular and sufficient supply is necessary. Many companies follow the industrial area because of availability of regular & sufficient power supply.
* Supply of Capital: Capital is required for the industries for production, day to day working, expansion, marketing etc. Large scale production require large amount of capital which may be raised by shares, debentures etc.

Secondary factors:

* Natural factors: Factors like land, water, climate etc. are very important for industries.
* Government Policy**:** in particular area new plant can not be started due to some rules and regulations made by government. Also, there are some subsidies and other facilities to support small scale industries to grow up.
* Availability**:** Availability of housing, hospitality, entertainment, education facilities also helps in deciding plant location.
* Miscellaneous factors:

           1. Sufficient water supply
           2. Danger of attack during war
           3. Personal factors
           4. Environmental & ecological factors
           5. Availability of safety facilities like fire- fighting, police etc.

The ten main factors that affect a plant location are as follows:

1. Law and order situation,
2. Availability of infrastructure facilities,
3. Good industrial relations,
4. Availability of skilled workforce,
5. Social infrastructure,
6. Investor friendly attitude,
7. Nearness to market,
8. Nearness to raw-materials' source,
9. Nearness to supportive industries and services, and
10. Must meet safety requirements.

**5. What is break even analysis? (3)**

Break-even analysis is a technique widely used by production management and management accountants. It is based on categorising production costs between those which are "variable" (costs that change when the production output changes) and those that are "fixed" (costs not directly related to the volume of production).

Total variable and fixed costs are compared with sales revenue in order to determine the level of sales volume, sales value or production at which the business makes neither a profit nor a loss (the "break-even point").

**6. What is process planning and process analysis? (3)**

Process planning is concerned with planning the conversion or transformation processes needed to convert the materials into finished products .A production process is a series of manufacturing operations performed at workstations to achieve the design specifications of the planned output .A vast number of different operations and various kinds of equipments and machines may be required to produce a complex product (for e.g. an aircraft or a ship). Simpler parts may require fewer operations (for e.g. a bolt and a nut).

Process Analysis deals with the break up of entire production cycle into phases or activities in a step-by-step manner from inputs, operations to outputs. This will make it easy for the management to take control of the overall process.

The latter could identify the deficiencies in a targeted activity or phase thereby identifying the bottleneck for the entire process. After the identification of bottleneck, it is the duty of the management to reduce the time taken for the bottleneck by improving the efficiency of that bottleneck.

**Section B**

* 1. **Write short note on production system? (4)**

Production System in Production and Operation Management

The production system of an organization is that part, which produces products of an organization. It is that activity whereby resources, flowing within a defined system, are combined and transformed in a controlled manner to add value in accordance with the policies communicated by management. A simplified production system is shown above.The production system has the following characteristics:

1. Production is an organized activity, so every production system has an objective.
2. The system transforms the various inputs to useful outputs.
3. It does not operate in isolation from the other organization system.
4. There exists a feedback about the activities, which is essential to control and improve system performance.

Classification of Production System

Production systems can be classified as Job Shop, Batch, Mass and Continuous Production systems.

Classification of production systems

**2. Write short note on: (4)**

**a) ISO 9000**

ISO 9000 is defined as a set of international standards on quality management and quality assurance developed to help companies effectively document the quality system elements needed to maintain an efficient quality system. They are not specific to any one industry and can be applied to organizations of any size.

ISO 9000 can help a company satisfy its customers, meet regulatory requirements, and achieve continual improvement. It should be considered to be a first step or the base level of a quality system.

**b) Acceptance sampling**

Acceptance sampling uses [statistical sampling](https://en.wikipedia.org/wiki/Statistical_sampling) to determine whether to accept or reject a production lot of material. It has been a common [quality control](https://en.wikipedia.org/wiki/Quality_control) technique used in industry. It is usually done as products leaves the factory, or in some cases even within the factory. Most often a producer supplies a consumer a number of items and a decision to accept or reject the items is made by determining the number of defective items in a sample from the lot. The lot is accepted if the number of defects falls below where the acceptance number or otherwise the lot is rejected.