

*Mgt613 Mid Term Current Paper (Dec 2010 and 2009)*

*Solved by  
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**2. What factor you will keep in mind while designing a facility layout. 3 Marks**

*Factors in determining the efficient layout & design:*

1. Flexibility: The facility layout should be such that it can be readjusted or modified according to future expansion or changes.
2. Flow of Movement: It should be a smooth flow from input to output so that the overall coordination is maintained between various units.
3. Utilization of Space: There should be a proper & optimal usage of space to ensure that all the equipment is properly placed & the handling of materials is done in such a space.
4. Ease of Communication: There should be an effective communication between various aspects of business which is conducive to its overall growth.
5. Safety: Occupational safety measures must be in place for optimum production & cutting losses caused due to hazards.
6. Management of Materials: There should be a proper maintenance & upkeep of equipments to ensure that the production is hassle free.
7. Ensuring High Employee Morale: Since this directly affects production, factors like attractiveness of a facility, ventilation, lighting, restrooms & cafeterias have to be provided for maximum employee participation.

[http://www.tutorsonnet.com/operations\\_management\\_homework\\_help/production\\_planning/facility\\_layout\\_assignment\\_help\\_tutoring.htm](http://www.tutorsonnet.com/operations_management_homework_help/production_planning/facility_layout_assignment_help_tutoring.htm)

**3. Designers should adhere to the suggestion given by others while making any product. Do you agree with this statement? explain. 5 marks**

yes I AM AGREE with this statement

The design side needs to adhere to certain guidelines which can ensure that the organization is able to achieve its organizational strategy. These guidelines are often form

the vary basis of an organizations design strategy and indicates the importance of standardization in the design of a product or service.

1. Give customers the value they expect .Reliability, safety, endurance, aesthetic and quality dimensions are what the customers are looking for.
2. Make health and safety a primary concern .Green Rickshaws seen functioning on the roads these days are a result of taking care of health and safety of the users as well as those who operate them.

**4.4th question is a numerical question given from chapter#21 from the topic of (Stopwatch time study)also see it's example (pg#91)**

A Mechanical Engineer working for an automobile manufacture in Lahore presents the following information to the Operations Manager. The assembly workers take a mean time of 120 minutes to assemble a single car with a standard deviation of 5 minutes. The confidence limit if 95%, The Operations Manager will need how many observations if the desired maximum error is + 5%

Solution

Given Data

S= 5 minutes,

Z is 1.96 (since 95 CI)

x- = 120 minutes,

a= 5 %

The formula is

$N = (z\sigma/a \times x)^2$

Substituting the values

$N = ( (1.96)(5)/(0.05)(120))^2$

$= (96.04)/(36) = 2.67 \text{ studies} = 3 \text{ studies}$

**. How automation help in production? 3 marks**

Automation helps in productions system through the following ways

1. Computer Aided Manufacturing
2. Numerically Controlled Machines
3. Robot
4. Manufacturing Cell.
5. Flexible Manufacturing System page#78

**2. Standardization sometime is not feasible. what the reason behind it.. 3 marks**

Designs may be frozen (Standardized) with too many imperfections remaining (An existing shortcoming may never be removed because of this leading to product or component failure, catalytic converter failure led to a number of good cars in 1980s).

2. High cost of design changes increases resistance to improvements (associated with its lack of confidence on the design side as well as outsourcers, who provide design services).

3. Reduction in Variety which leads to decreased variety results in less consumer appeal. This also at times lead to the competitor producing a better product or greater variety which itself is a feature of lean production. Page#48

**3. Calculate efficiency and utilization if**

**Designed capacity= 60 units per day**

**Effective capacity=45 units per day**

**Actual output= 39 units per day (5 marks) page#66**

Efficiency=Actual output/Effective Capacity

Efficiency=39/45\*100

Efficiency=86.7%

Utilization=Actual output/Design Capacity

Utilization=39/60\*100

Utilization=65%

**4. what are disadvantages of process lay out? 5 marks**

**Disadvantages of Process Layouts**

1. In-process inventory costs can be high.
2. Challenging routing and scheduling.
3. Equipment utilization rates are low.
4. Material handling slow and inefficient.
5. Complexities often reduce span of supervision. Page#82

**Another Paper:**

**Q: what is meant by capacity flexibility and how it can be achieved ? 3 marks**

Capacity flexibility means having the ability to rapidly increase or decrease production levels or to shift production capacity quickly from one product or service to another.

Such flexibility is achieved through flexible plants, processes, and workers, as well as through strategies that use the capacity of other operations.

- A. Flexible plants
- B. Flexible processes
- C. Flexible workers
- D. Strategies that use the capacity of other organizations

[http://highered.mcgraw-hill.com/sites/007340330x/student\\_view0/chapter3/](http://highered.mcgraw-hill.com/sites/007340330x/student_view0/chapter3/)

**Q: suppose you are the operations manager of ABC Corporation . to develop competence in business operations , you have to decide either to rely on the facilities available in-house or out source . what are some of the factors you would base the decision on ? 5 marks**

Operations Manager identifies the criteria by which the proposed solutions will be judged. The common criteria often relates to costs, profits, return on investment, productivity, risk, company image, impact on demand, or similar variables. The management is interested that the Operations Manager should be able to focus on parameters that will increase or decrease? Ideally the aim is that

1. Costs should decrease and Profits should increase
2. Return on Investment should increase along with increase in Productivity.
3. Risk should decrease along with increase in Company image.
4. Demand should increase for the product or service.
5. Monitor the results to ensure the desired results are achieved.

**Another Paper:**

**2. Designers should adhere to guidelines while making design production layout? 5 Marks**

The design side needs to adhere to certain guidelines which can ensure that the organization is able to achieve its organizational strategy. These guidelines are often form

the vary basis of an organizations design strategy and indicates the importance of standardization in the design of a product or service.

**1. Produce designs that are consistent with the goals of the company.** An economical upscale model automobile design if replaced with a luxurious model can invite a small number of customers and may loose the existing stronger customer base.

2. Give customers the value they expect .Reliability, safety, endurance, aesthetic and quality dimensions are what the customers are looking for.

**3. Make health and safety a primary concern .**Green Rickshaws seen functioning on the roads these days are a result of taking care of health and safety of the users as well as those who operate them.

**4. Consider potential harm to the environment .**A new product should be as a primary guideline should be better than the existing one and should aid in the protection of environment. A number of automobile manufacturers are using hybrid models or cars where as its expected that steam operated cars may be available in 5 years.

**3. Keep in mind the significant equipment while design the facilitate layout plans in your company? 5 Marks factor**

**Question No: 41 ( Marks: 5 )**

**Operations management does not work in isolation within an organization. How Would you relate marketing, finance and other functions to operations function?**

Ans:

The Operations function consists of all activities that are directly related to production of a good or service

**Operations and Marketing:**

- ✓ Value addition refers to conversion of raw materials to finished goods or services.
- ✓ Value added often refers to the difference between the cost of the raw material and the price of the finished good

**Finance :**

- ✓ Budgets
- ✓ Economic analysis of investment proposals
- ✓ Provision of funds page#7 and 8

**Question No: 29 ( Marks: 3 )**

**Write down the characteristics of well designed service system?**

**ANS: characteristics of well designed service system**

- ✓ A well designed service system should be consistent with the organization's vision as well as mission
- ✓ A good and well design should create an effective linkage between back operations and front Operations. It should aim for a single unifying theme. It should ensure reliability and high quality page#55

**Question No: 30 ( Marks: 3 )**

**What qualities does a successful job design contain?**

**ANS: A successful job design contains following qualities.**

1. Carried out by experience personal who have necessary training & background.
2. Consistent with goals of organization
3. Shared with new employees

4. In documented Form
5. Understood & agreed by both management & employees
6. Factors that affect job design. Page#87

**Question No: 31 ( Marks: 5 )**

Suppose you want to estimate the time required to perform a certain task by the two employees. One employee's study yielded a mean of 6.4 minutes and standard deviation of 2.1 minutes with 95% confidence Interval. Other employee's study yielded a mean of 2.1 minutes and standard deviation of 6.4 minutes with confidence interval of 95%. Now how many observations you will need if desired maximum error is 10% of sample mean?(z= 1.96) Do both the employees have same number of observations?

ANS:

**Employee # 1 :**

Mean time =  $X = 6.4$ mins

Standard Deviation =  $S = 2.1$ mint.

$z = 1.96$

error =  $A = 10\% = 0.1$

$n = (zs/ax)^2$

$= [(1.96) (2.1)/(0.1)(6.4)]^2$

$= [4.116/0.64]^2$

$= (6.43125)^2$

$= 41.36$

**41 observations**

**Employee # 2 :**

Mean time =  $X = 2.1$ mins

Standard Deviation =  $S = 6.4$ mint.

$z = 1.96$

error =  $A = 10\% = 0.1$

$n = (zs/ax)^2$

$= [(1.96) (6.4)/(0.1)(2.1)]^2$

$= [12.544/0.21]^2$

$= (59.733)^2$

$= 3568.03$

**3568 observations**

**Question No: 41 ( Marks: 5 )**

Why some multinational corporations feel that globalization is not a good option?

**Question No: 42 ( Marks: 5 )**

Common disadvantages which lead to a MNC forgoing globalization?

The common disadvantages which lead to a MNC forgoing globalization includes.

- ✓ Handing over proprietary Technology to host countries.
- ✓ Political risks.
- ✓ Poor Employee (Managers and worker) skills.
- ✓ Slow customer response time.

✓ Effective communication between interfaces difficult page#95

**Do you perceive that operation management and operation research are the same concepts?**

OPERATION management and operation research are not same because **NOT SURE**

- **Operations management:** is an area of management concerned with overseeing, designing, and redesigning business operations in the production of goods and/or services It is concerned with managing the process that converts inputs (in the forms of materials, labor, and energy) into outputs (in the form of goods and/or services).
- **Operations research:** (also referred to as **decision science** or **management science**) is an interdisciplinary mathematical science that focuses on the effective *use* of technology by organizations. In contrast, many other science & engineering disciplines focus on technology giving secondary considerations to its use.

**Question No: 41 ( Marks: 5 )**

**Suppose you are working as an operation manager in an automobile company. Your company wants to move its manufacturing plant from one location to other location. What factors will affect the location decision according to your point of view?**

❖ **Making Location Decisions**

1. Decide on the criteria
2. Identify the important factors
3. Develop location alternatives
4. Evaluate the alternatives
5. Make selection page#95

**Question No: 42 ( Marks: 5 )**

Calculate the exponential smoothing forecasts from the following data for the 6th

Period with constant (alpha) 0.40.

Period No. of complaints

1 60

2 65

3 55

4 58

**Question No: 41 ( Marks: 5 )**

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**Given the table:****Alternatives Possible future demand****Low (Rs.) High (Rs.)**

- ▶ Small facility 10,000 8,000
- ▶ Medium facility 12,000 20,000
- ▶ Large facility 18,000 15,000
- ▶ Calculate Maximax, Lapalace and Minimax regret?

**Question No: 41 ( Marks: 5 )**

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**How would you reveal the usefulness of naive forecasts?**

ANS: Naïve forecasting makes simple assumptions about the future at its simplest, naïve forecasting assume that the future level of demand will be same as the current level.

**Naive Forecasts:**

- ✓ . Simple to use
- ✓ . Virtually no cost
- ✓ . Quick and easy to prepare
- ✓ . Data analysis is nonexistent
- ✓ . Easily understandable PAGE#36

**Question No: 42 ( Marks: 5 )**

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**Which process system would you suggest for the following business/industry?**

French restaurants use (job shop process structure)

Heavy equipment use (batch flow process)

Sugar refinery use (continuous flow structure)

Automobile assembly use (assembly line process structure)

Commercial printer use (job shop process structure)

Feedback: B is the correct answer. Commercial printer and French restaurants are examples of job shop. Automobile assembly uses an assembly line structure while sugar refinery uses continuous flow structure.

: [http://highered.mcgraw-](http://highered.mcgraw-hill.com/sites/0072983906/student_view0/chapter6/multiple_choice_quiz.html)[hill.com/sites/0072983906/student\\_view0/chapter6/multiple\\_choice\\_quiz.html](http://highered.mcgraw-hill.com/sites/0072983906/student_view0/chapter6/multiple_choice_quiz.html)**Question No: 29 ( Marks: 3 )****What are the reasons that support the use of process layout?**

Following are the reasons that support the use of process layout.

1. Can handle a variety of processing requirements.
2. Not particularly vulnerable to equipment failures.
3. Equipment used is less costly.
4. Possible to use individual incentive plans. Page#82

**Question No: 30 ( Marks: 3 )**

Suppose you are the operations manager of a manufacturing firm, why would you perceive concurrent engineering as a suitable approach with reference to product design?

**concurrent engineering is a suitable approach with reference to product design because** Concurrent engineering is the bringing together of engineering design and manufacturing personnel early in the design phase.

- ✓ Manufacturing Personnel are able to identify production capabilities and capacities
- ✓ Early consideration of the Technical Feasibility of a particular design or a portion of a design. Page#53

**Question No: 32 ( Marks: 5 )**

**In some organizations capacity planning takes place very regularly and in some it takes place seldom. What are the factors that influence the frequency of capacity planning?**

**Following are the factors that influence the frequency of capacity planning.**

- ✓ **Facilities.** The design of facilities includes the size as well as the provision of expansion
- ✓ **Product and service** factors can have a tremendous influence on capacity. Process factors refer to the quantity and quality requirements of a process
- ✓ **Human factors** include skill, craftsmanship, training and qualification to handle any job it also includes the motivational factors
- ✓ **Operational factors** with respect to effective capacity always refer to scheduling, late deliveries, acceptability of purchased materials, parts, quality inspection, control procedures and inventory problems page#67

**Question No: 29 ( Marks: 3 )**

**Write down at least three ways of improving reliability of a system.**

**Following are the three ways of improving reliability of a system**

1. Component design: Parts of a car
2. Production/assembly techniques: No reworks also fool proof assembly.
3. Testing: for trouble free final product
4. Redundancy/backups: not possible all the time but common remedy. Page#63

**Question No: 30 ( Marks: 3 )**

**What qualities does a successful job design contain?**

**A successful Job Design must have the following qualities**

1. Carried out by experienced personnel who have the necessary training and background.
2. Consistent with the goals of the organization.
3. In documented form.
4. Understood and agreed by both management and employees.
5. Shared with the new employees.
6. Factors that affect Job Design page#87

**Question No: 32 ( Marks: 5 )**

**“Standardization plays an important role in product design”. How will you describe this role?**

**Standardization** We live in a world where for the sake of convenience, reliability and safety, majority of the products and services have been standardized. If for a moment any process whether it relates to manufacturing or services is made standard less, the vital concept of compatibility would be lost. Think for a moment if there is a fire at a Montessori school or at a crowded stadium, if there is no standardization of fire hose attached to the fire truck and fire hydrant present at the site, no effort would succeed in putting out the fire and saving the lives of the people page#20

**Question No: 29 ( Marks: 3 )**

**How many multiple plant strategies are used in a company having multiple manufacturing facilities?**

Answer: Mostly following are the below given multiple manufacturing facilities are used with combination in plant strategies;

- ✓ Product plant strategy
- ✓ Market area plant strategy
- ✓ Process plant strategy **page#96**

**Question No: 30 ( Marks: 3 )**

**What are the key steps involved in formulating a capacity planning strategy?**

**Following are the key steps involved in formulating a capacity planning strategy;**  
**Steps for formulating a Capacity Planning Strategy**

1. Estimate future capacity requirements
2. Evaluate existing capacity
3. Identify alternatives
4. Conduct financial analysis
5. Assess key qualitative issues
6. Select one alternative
7. Implement alternative chosen
8. Monitor results **page#67**

**Question No: 31 ( Marks: 5 )**

**Suppose you are the operations manager of ABC Corporation. To develop competence in business operations, you have to decide either to rely on the facilities available in-house or outsource. What are some of the factors you would base the decision on?**

Following are the factors which are available to us in order to decide whether to develop a competence in house or outsource competent organization to supply that product, service or particular expertise.

**Available capacity** if an organization has the equipment, necessary skills and time, it often makes sense to produce an item or perform a service in house. The additional costs would be relatively small compared with those required to buy items or subcontract them.

**Expertise.** If a firm lacks the expertise to do a job satisfactorily, buying might be a reasonable alternative.

**Quality considerations.** Firms that specialize can usually offer higher quality than an organization can attain itself. Conversely, special quality requirements or the ability to closely monitor quality may cause an organization to perform a job itself.

**Nature of demand.** When demand for an item is high and steady, the organization is often better off doing the work itself. However, wide fluctuations in demand or small orders are usually better handled by specialists, who are able to combine orders from multiple sources, which results in higher volume and tend to offset individual buyer fluctuation.

**Cost.** Any cost savings achieved from buying or making must be weighed against the preceding factors. Cost savings might come from the item itself or from transportation cost savings.

**Risk.** Outsourcing or buying the services carries risk; often companies retain flexibility by carrying out certain critical activities in house and repetitive menial activities through outsourcing.

**Question No: 32 ( Marks: 5 )**

**“Standardization plays an important role in product design”. How will you describe this role?**

Standardization plays an important role in product design, because Standardization is the extent to which there is an absence of variety in a product, service or process.

Opportunities for long production runs and automation .Uninterrupted stock of components available, so production can be controlled and if possible a demand forecast may be used.

Need for fewer parts justify increased expenditures on perfecting designs and improving quality control procedures. The company can free up its inventory carrying costs and use it on increasing its long term tangible and intangible quality standards Reduced training costs and time. An important advantage and can improve productivity.

**Q#what are some of the reasons that do not favor the use of process layout?**

**Disadvantages of Process Layouts**

1. In-process inventory costs can be high.
2. Challenging routing and scheduling.
3. Equipment utilization rates are low.
4. Material handling slow and inefficient.
5. Complexities often reduce span of supervision page#82

**1. Write the name of approaches to change the job structure.3 Marks design**