

TWO MARK QUESTIONS & ANSWERS

1. Define Plant Design.

Plant design refers to the overall design of a manufacturing enterprise / facility. It moves through several stages before it is completed. The stages involved are: identification and selection of the product to be manufactured, feasibility analysis and appraisal, design, economic evaluation, design report preparation, procurement of materials including plant and machinery, construction, installation and commissioning.

2. What is Deterioration?

To minimize product and raw material deterioration, provisions should be made for: refrigerated and controlled environment storage areas, space and facilities for product inspection and for carrying out quality assurance tests, surge vessels for processed material between different operations (particularly operations which are subject to breakdown), equipment for pre-cooling material stored in such vessels, means of cooling.

3. Define Feasibility study.

The feasibility study involves an analysis and evaluation of the design concept from all the relevant angles. The study provides an immediate indication of the probable success of the enterprise and also shows what additional information is necessary to make a complete evaluation.

4. When does a need of location decision arise?

The impetus to embark upon a plant location study can be attributed to reasons as given below:

- It may arise when a new plant is to be established.
- In some cases, the plant operations and subsequent expansion are restricted by a poor site, thereby necessitating the setting up of the facility at a new site.

5. List out the Factors involved in the plant location decision.

Location studies are usually made in two phases namely,

1. the general territory selection phase and
2. the exact site / community selection phase amongst those available in the general locale.

6. Define plant size.

Plant size / capacity for any food-processing unit refer to the planned rate of production of the identified product(s). It can be expressed in terms of either **volume** or **weight** or **number produced per unit time** of the product.

7. What does market demand mean?

Market demand for any product is the total volume that will be bought by a defined customer group in defined geographical area in a defined time period and in a defined environment.

8. Define Time Value of Money.

Time value of money is defined as the time dependent value of money stemming both from changes in the purchasing power of money (inflation or deflation) and from the real earning potential of alternative investments over time.

9. Define Rate of Return.

If a production concern invests an amount of money in setting up production facilities, then the **ratio** of the **net profit earned** by the company **at the end of a period of time** to **the sum invested** is called the Rate of Return on investment.

10. What does Depreciation mean?

Depreciation is systematic procedure of recovering every year a portion of investment made on an asset during its accounting life. Income tax during a year is chargeable only on the net profit obtained by deducting the amount of depreciation from gross profits.

11. What is Models in operations research mean?

A model is a theoretical abstraction (approximation) of a real-life problem. It can also be defined as a simplified representation of an operations or a process in which only the basic aspects or the most important features of a typical problem under investigation are considered. The object of the models is to provide means for analysing the behaviour of the system for the purpose of improving its performance.

12. List out the **Design consideration for drainage system of food plant.**

The efficient collection and conveying plant effluents are two important considerations for the drainage system. There are two categories of drainage system.

1. Drainage system for different sections of plant and laboratories,

2. Storm water drainage system for collection of rain water from roof, surface water from paved areas. This water is quite clean and can be handled for useful applications such as water re-charging of wells/tube wells. The system consists of big size canals and cement pipelines of big diameter, pumping etc. This system of rain water management is also very important in order to eliminate water accumulation in the plant premises.