ME6005 - PROCESS PLANNING AND COST EVALUATION

UNIT-I

INTRODUCTION TO PROCESS PLANNING

1. Define product design & selection.
Product design is a critical function in the production system. The commercial success and societal value of, a product is mainly determined by the quality of that product design. It is proven that a very significant portion of the cost of the product is determined by its design. If the product design is poor, no matter how well it is manufactured, the product will not contribute to the wealth and well being of the firm that produced it. How manufactured products are designed and how the process to produce them is selected are the focuses of this section.

2. Define product design.
Product design deals with conversion of ideas into reality and, as in other forms of human activity, aims at fulfilling human needs.

3. *What designing includes in product design?*
(i) Specifications
(ii) Experimental and development work for the production of desired product ;
(iii) Calculation of all estimates; and
(iv) Issuing necessary instructions to the production department for production.

4. What are the characteristics of a good product design?
(i) Repairability: The design of the product should be such that it is easily repairable whenever necessary.
(ii) Modular design : The product should be composed of detachable components or sub assemblies so that whenever any part of component fails that part can be replaced by a new one.
(iii) Redesigning (ie., upgrading) capability : The product should be possible for customers, who purchased the base' model, to subsequently buy additional options to upgrade the product.
(iv) *Miniaturisation : The* product should be smaller and lighter in weight
(v) Drawing and specifications: The drawings of the design should be explicit in exact size and shape of the product, its parts and
sub components. The specifications of each part, operation and process involved should be clear and detailed.
(vi) Reliabithy : The designed product should have required d of reliability.
(vii) *Maintainability : Product* design should be such that it is easy to achieve accessibility for servicing.
(viii) *Functionality : The* product should function correctly.

(ix) Warranties : The product should be given warranty for a specific period.

5. What are factors influencing the Marketing Aspects in product analysis?
After the product selection, it is important to know the marketability of the product.

All further steps are dependent upon the demand for the proposed product and customer acceptability to the product.
It is easy to estimate the demand for the existing product. But if the product is entirely new, then a detailed market survey should be carried out to estimate the demand for the product.
Thus, marketing aspects which analyses the factors that influence the demand for the product is an important step in product analysis.

6. What are factors influencing the Functional Aspects in product analysis?

The functional analysis helps in analysing the importance and worth of each function to be built into the product. Some of the functional aspects are :
*(a)*What are the functions the product is expected to perform ?
(b) Whether we should go for a single function or multiple functions ?
(c) Cost considerations for multiple functions.
For example, a kitchen mixer allows for a large number of attachments to be added for a variety of duties.

7. What are factors influencing the Operational Aspects in product analysis?

After determining the functional aspect, the operational aspect has to be considered.
The product should be easy to handle and operate at the customers end.
The product is used at different operational conditions and the customers vary with respect to skill and knowledge. Therefore these operational aspects should be considered while designing the product.

8. What are factors influencing the Aesthetic Aspects in product analysis?

Aesthetic aspect refers to the style or external look of the product. It is concerned with moulding the final shape around the basic skeleton.
Aesthetic aspects attract customers and create the first impression about the product.
The designer can improve the aesthetic value of a product by using special materials, changing different colours, textures, lines, packaging methods.

9. What are factors consider for Economic analysis? Economic Analysis

Economic analysis is concerned with the answers to the following questions
1. How much investment is needed to manufacture the new product ?
2. Who are the estimated production cost per piece ?
3. What is the expected volume of sales ?
4. What will be the expected profit margin ?
Techniques like breakeven analysis, cost volume profit analysis are used to do these economic analysis.

10. Write the approaches to process planning.

The two general-approaches to, process planning are
I. Manual process planning, and
2. Computer Aided Process Planning (CAPP).
(i) Retrieval CAPP system, and
(ii) Generative CAPP system.

11. Define manual process planning.

In traditional process planning systems the process plan is prepared manually. The task involves examining and interpreting engineering drawings, making decisions on machining

processes selection, equipment selection, operations sequence, and shop practices.Therefore, the manual process plan is very much dependent on the skill, judgement and experience of the~process planner. That's why, if different planners were asked to develop a process plan for the same part, they would probably come up with different plans.

12. Write Advantages and Disadvantages of Manual Process Planning.

Advantages

Manual process planning is very much suitable for small scale companies with few process plans to generate.
This method is highly flexible**.**
This requires low investment, costs.

Disadvantages

Manual process planning is a very complex and time consuming job requiring a large amount of data.
This method requires the skilled process planner.
More possibilities for human error
It increases paper work

13. Define CAPP

In order to overcome the drawbacks of manual process planning,
The Computer Aided Process Planning (CAPP) is used. With the use of computers in the process Planning
One can reduce the routine clerical work of manufacturing engineers, Also it provides the opportunity to generate rational consistant and optimal plants. In addition CAPP provides interface between CAD and CAM.

14. What are the approaches of CAPP?

The two basic approaches or types of CAPP system are :
1. Retrieval (or variant) CAPP system,, and
2. Generative CAPP system.

15. Define retrieval (or variant) CAPP system.

1. A retrieval CAPP system, also called a variant CAPP system, has been widely used in machining applications.
1. The basic idea behind the retrieval CAPP is that similar parts will have similar process plans.
2. In this system, a process plan for a new part is created by recalling, identifying and retrieving an existing plan for a similar part and making the necessary modifications for the new part.

16. Drawbacks of Retrieval CAPP System

The components to be planned are limited to similar components previously planned.
Experienced process planners are still required to modify the standard plan for the specific component.
The retrieval CAPP system has the capacity to alter an existing process plan. That's why it is also known as **variant CAPP** system
The commercially available retrieval CAPP systems are MultiCapp and MIPLAN.

17. Define generative CAPP systems.

In the generative approach, the computer is used to synthesize or generate each individual process plan automatically and without reference to any prior plan.

A generative CAPP system generates the process plan based on decision logics and precoded algorithms. The computer stores the rules of manufacturing and the equipment capabilities (not any group of process plans).

When using a system, a specific process plan for a specific part can be generated without any involvement of a process planner.

The human role in running the system includes:

inputting the GT code of given part design. and (ii) monitoring the function.

18. What are the Components of a Generative CAPP System

The various components of a generative system are : .

1. A part description, which identifies a series of component characteristics, including geometric features, dimensions, tolerances and surface condition.
2. A subsystem to define the machining parameters, for example using look-up tables and analytical results for cutting parameters.
3. Asubsystem to select and sequence individual operations decision logic is used to associate appropriate operations with features of a component, and heuristics and algorithms are used calculate operation steps, times and sequences.
3. A database of available machines and tooling.
4. A report generator which prepares the process plan report.

19. Advantages of Generative CAPP.

Generative CAPP has the following advantages

1. It can generate,consistent process plans rapidly.
2. New components can be planned as easily as existing components.
3. It has potential for integrating with an automated manufacturing facility to provide detailed control information.

20. What are the factors should be considered for process and equipment selection?

While selecting a process or equipment, the following factors considered -

1. Economic-consideradons: Cost analysis should be made with respect to the initial cost, maintenance and running cost. An alternative which results in lower total cost should be selected

2. Production rate and unit cost of production.
3. Quality and reliability aspects.
4. Lower process rejection.
5. Minimum set-up time.
6. Longer productive life of machines or equipment.
7. Functional versatility *ie.,* ability to perform. more than one function.

UNIT – II
PART – A (2 Marks)

1. Define – Process Planning (M/J 2009)

Process planning has been defined as the sub-system responsible for the conversion of design data to work instruction. Process planning can also be defined as the systematic determination of the methods by which a product is to be manufactured economically and competitively. It consists of devising, selecting and specifying processes, machine tools and other equipment to convert raw material into finished and assembled products.

2. What are the functions of process planning? (M/J 2009)

The systematic determination of the engineering processes and systems to manufacture a product competitively and economically is a called operation planning. It is the stage between design and production. The plan of manufacture considers functional requirements of the product, quantity, tools and equipment, and eventually the costs for manufacture.

3. What are the information required to do process planning? (N/D 2012)

(a) Quantity of work to be done along with product specifications.
(b) Quality of work to be completed.
(c) Availability of equipments, tools and personnel.
(d) Sequence in which operations will be performed on the raw material.
(e) Names of equipment on which the operations will be performed.
(f) Standard time for each operation.
(g) The time of operations will be performed.

4. What is sequencing? (N/D 2012)

Sequencing is one of the process planning activities in which the order of the manufacturing process is decided based on various factors.

5. Write the approaches of process planning. (M/J 2013)

The two general-approaches to process planning are
(a) Manual process planning, and
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6. Define – Manual Process Planning (M/J 2013)

In traditional process planning systems the process plan is prepared manually. The task involves examining and interpreting engineering drawings, making decisions on machining processes selection, equipment selection, operations sequence. and shop practices. Therefore, the manual process plan is very much dependent on the skill, judgment and experience of the process planner.

7. What are the advantages and disadvantages of Manual Process Planning? (N/D 2010)

Advantages

(a) Manual process planning is very much suitable for small scale companies with few process plans to generate.
(b) This method is highly flexible.
(c) This requires low investment, costs.

Disadvantages

(a) Manual process planning is a very complex and time consuming job requiring a large amount of data.
(b) This method requires a skilled process planner. More possibilities for human error
(c) It increases paper work

8. Define – CAPP (N/D 2011)

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2. Production rate and unit cost of production.
3. Quality and reliability aspects.
4. Lower process rejection.
5. Minimum set-up time.
6. Longer productive life of machines or equipment.
7. Functional versatility.

16. What are the Aims of break-even analysis?

The important aims and objects of break-even analysis are :-

1. To help in deciding profitable level of output, below which losses will occur.
2. To compute costs and revenues for all possible volumes of output to fix budgeted sales.
3. To take decision regarding make or buy.
4. To decide the product mix and promotion mix.
5. To take plant expansion decisions.
6. To take equipment replacement decisions.
7. To indicate margin of safety.
8. To fix the price of an article to give the desired profit.
9. To compare a number of business enterprises.
10. To compare a number of facility locations.

17. What are the assumptions in break-even analysis?

The break-even analysis is based on the following assumptions :

1. Selling prices will remain constant at all sales levels (i.e.,quantity discounts are not available).
2. There is linear relationship between sales volume and costs.
3. It assumes that costs are classified into fixed and variable costs, ignoring semi-variable costs.
4. It considers that production is equal to/ the sales *(i.e.,* there is no inventory).
5. No other factors will influence the cost, except the quantity.

18. What you mean by break-even point?

1. The ***break-even point*** may be defined as the level of sales at which total revenues and total costs are equal. It is a point at which the, profit is zero.

2. It is also known as "no-profit ***no-loss point".***
3. If a firm produces and sells above the break-even point, it makes profit. In case it produces and sells less than the breakeven point, the firm would suffer losses.
4. Management can change the break-even point by changing fixed cost, variable-cost and selling price.

19. What are the method of determination of break even point?
(i) The algebraic method, and (ii) The graphical method.

20. Define algebraic method.
Break Even point in terms of Physical Units: Let FC = Fixed cost, VC = Variable cost per unit, VC = Total variable cost, TC = Total costs, TR = Total revenue *i.e.*, total income, Q = Sales volume *Le.*, quantity sold, and SP = Selling price per unit that,
We know that
Total costs = Fixed cost + Variable cost
TC = FC + (VC x Q)
We also know that
Total revenue = Selling price / unit x Quantity sold
TR = SP x Q
At Break Even Point (BEP),
Total costs = Total revenue
TC = TR
FC+(VC x Q) = SP x Q
Q_{BEP} = FC/(SP-VC)
Fixed costs
Break Even quantity = (Selling price / unit) - (Variable cost / unit)

21. What do you mean by *Break-even point in terms of Sales Value?*
This method is suitable for a multi-product firm. Break-even sales Fixed costs
(BEP in rupees) = 1 - Variable cost/Unit Selling price / unit

22. Define contribution
The difference between selling price and variable cost per unit is known as ***contribution or contribution margin.***
Contribution = Selling price - Variable cost
C = SP-Vc
Contribution is a companion measure of value that tells how much of the revenue from the sale of one unit of a product will
contribute to cover fixed costs with the remainder going to profit,
Contribution margin divided by selling price is known as ***contribution ratio.***
Contribution.ratio = Contribution

23. Define P/V Ratio (i.e., Profit - Volume Ratio)
P/V Ratio = Contribution
Sales

24. What do you mean by margin of safety?

Margin of safety is the difference between the existing level of output and the level of output at BEP.
Margin of safety (in %) = Sales - Sales at BEP x 100
Sales
Greater value of margin of safety means higher profits to the firm.
If the safety margin is low, then the firm runs the risk of incurring losses.

25. What are the limitations of break-even analysis?
(i) Break-even analysis is a static picture as it assumes constant relationship of output to costs and revenue.
(ii) Practically, the selling price and variable cost per unit are not constant. So the break-even analysis cannot be more realistic.
(iii) Break-even analysis is based on accounting data which may suffer from several limitations like neglect of imputed costs, arbitrary depreciation estimates, inappropriate allocation of overheads, etc.
(iv) The break-even chart is a tool for short run analysis. It cannot be used for long-range analysis

UNIT – III
PART-A

1. What are factors for calculating the probable cost of the product? (M/J 2009)

(a) Design time,
(b) Amount and cost of materials required,
(c) Production time required,
(d) Labour charges,
(e) Cost of machinery, overheads and other expenses,
(f) Use of previous estimates of similar parts,
(g) Effect of volume of production on costing rates,
(h) Effect of changes in facilities on costing rates, and
(i) Probable future changes in unit prices for materials, labour and expenses when the proposed product is manufactured at a future date.

2. Write the importance of cost estimating. (M/J 2009)

Cost estimating is very important for all organizations, before starting actual production or filling up the tenders. because only accurate estimating can enable the factory - owner to make vital decisions such as manufacturing selling policies.

3. Write the aims of cost estimation. (N/D 2009)

(a) To establish the selling price of a product for. a quotation or contract, so as to ensure reasonable profit to the company.
(b) To determine the most economical process, tooling.
(c) To prepare production budget.
(d) To evaluate alternate designs of product.
(e) To initiate means of cost reduction in existing production facilities by using new materials, new methods of tooling and processing.

4. What are the functions of cost estimation? (N/D 2009)

(a) Cost estimates are required to submit accurate tenders for getting the contracts.
(b) Cost estimates are required for the manufacturer to choose from various methods of production the one which is likely to be most economical.
(c) Cost estimates are required for fixing the selling price of a product.
(d) Cost estimate gives detailed information of all the operations and their costs, thus setting a standard to be achieved in actual practice.

5. What are the types of estimates? (N/D 2011)

The four groups of estimates generally used in a manufacturing enterprise are :
(a) Estimates for fixing the selling price of the product.
(b) Estimates to help the contractors to submit accurate tenders for entering into new contract.
(c) Estimates for setting various standards for the purpose of comparison.

(d) Estimates to forecast the progress of production and cost of the order to keep control of any variation of the material costs

6. What are the importances of realistic estimates? (N/D 2011)

Three possible estimates are over estimation, Under-estimation, and Realistic estimation.Both the over-estimation and underestimation are dangerous because both will ultimately lead the enterprise to failure. In over estimating, the firm will not be able to compete with its competitors who estimated the price correctly and will loses the order to its competitors. In case of under estimating, the firm will face huge financial loss which may utter failure or closure of firm. Therefore a realistic estimation is the need of the hour for any concern.

7. What are the components of a job estimate? (N/D 2012)

Before doing the cost estimation of a product, one should know the constituents of estimation.
design cost, R & D cost, labour cost, drafting cost, materials cost, inspection cost, cost of tools, jigs and fixtures, and overhead cost.

8. Define – Design Cost (N/D 2012)

The cost of design of a product is estimated by ascertaining the expected time for the design of that product.
Estimated design cost = Estimated design time x Salary of designer per unit time.
The design time can be estimated on the basis of similar products already designed in the past or on the basis of good judgement of designer. If the design of the product is done by some outside agency, the total amount paid to outside agency gives the cost of design.

9. Define – Drafting Cost (N/D 2013)

After the completion of the design, the drawing has to be prepared by draftsman.
Drafting cost = Estimated time by draft man in preparing drawings x Salary of the draftsman per unit time

10. Define – Overhead Cost (N/D 2013)

Overhead expenses are those which cannot be charged directly to a particular product manufactured. All expenses other than the direct material cost, direct labour cost, and direct expenses are known, as overhead costs or indirect expenses. Administrative expenses, selling and distribution expenses are added to the overhead costs. The overhead costs may be estimated by referring to the records of overhead costs in similar parts produced in past.

11. Define – Cost of Research and Development Work (M/J 2010)

Considerable time and money has to be spent on research and development work. The research may be theoretical, experimental or developmental research. The estimated time and the costs to be incurred on it are decided by judgement or past experience.

12. Define – Costing (M/J- 2010)

Costing is the determination of an actual cost of a component after adding different expenses incurred in various departments.

13. What are the aims of costing? (M/J-2011)

The main aims of costing are

1. Cost determination: To determine the actual cost of each mponent and cost of the final product.
2. For fixing selling price: To provide information to ascertain e selling price of the product.
3. Cost control - To analyse the expenses incurred in production, that control can be kept over them.

14. Write the common methods of costing.
1. Job costing or order costing,
2. Batch costing,
3. Process costing,
4. Departmental costing,
5. Operating cost method,
6. Unit cost method, and
7. Multiple cost method.

15. Define – Job Costing
This method is concerned with finding the cost of each individual job or contract.In this method, the total cost for each order is obtained from the daily cost sheet. This method is adopted in job order industries such as ship building, machine manufacturing, fabrication and building contracts.

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17. Define Batch Costing
Batch costing is a form of job costing. In this method, instead of costing each batch of components separately, each batch of components is taken together and treated as a job.

18. What you mean by Process Costing?
1. This method is employed' when a standard product is made which involves a number of distinct processes performed in a definite sequence.
2. This method is adopted in industries such as oil refining, chemical, paper making, paint, cement manufacturing and other similar industries.
3. This method indicates the cost of a product at different stages as it passes through various operations or processes. or departments.

For example,, in the manufacture of cement, the operations of mixing, grinding the raw material, burning, cooling and grinding the clinker are readily separable and cost of each of these stages can be accurately calculated.

19. Define Departmental Costing
1. This method is adopted in determining the cost of the output of each department separately for the manufacture of the standardised products.
2. This method is applied in industries like steel industry, automobile industry, *etc.*, where each department is producing independently one or more components.

3. In this method, the actual expenditures of each department on various components is entered on a separate cost sheet and the costing for each department is separately undertaken.

20. Define Operating Cost Method

This method is used in firms providing utility services.

Example : In transport services, water works, electricity boards, railways, etc., cost is determined on the basis of operating expenses. That is, charges are made as.passenger per km per m^3 volume, per kilowatt-hour, tonne, *etc*.

21. Define Unit Cost Method

This method is adopted by the firms, which supply a uniform product rather than a variety of products such as mines, quarries, *etc.*

22 . Define Multiple Cost Method

This method is used in firms which manufacture variety of standardised products, having no relation to one another in cost, quality and the type of.process, *etc*.

UNIT – IV

PART-A

1. Define – Batch Costing (M/J 2013)

Batch costing is a form of job costing. In this method, instead of costing each batch of components separately, each batch of components is taken together and treated as a job.

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4. Define – Unit Cost Method (M/J 2012)

This method is adopted by the firms, which supply a uniform product rather than a variety of products such as mines, quarries.

5. Define – Multiple Cost Method (M/J 2011)

This method is used in firms which manufacture variety of standardised products, having no relation to one another in cost, quality and the type of process.

6. What is meant by materials cost? (N/D 2010)

It is the cost of materials required for the manufacturing of the product. It consists of direct material cost and indirect materials cost. Direct materials cost is the cost of direct materials required for the manufacturing of the product. Indirect material cost is the cost of materials which are essentially needed in various shops for helping the direct materials to be converted into finished product.

7. What is meant by direct material? (N/D 2009)

Direct material is one which becomes a part of the product. It is the material which is consumed in the, manufacturing of product. It can be measured and charged directly to the cost of the product.

8. What is meant by indirect material? (N/D 2009)

Indirect material is the one which cannot be traced as a part of the product. It is the material required for maintaining and operating the plant and equipment but cannot be a part of the product.

9. Define – Direct Labour Cost (N/D 2008)

Direct Labour Cost is the wages paid to the direct labour. Direct laborers are the workers who actually work or process different materials either manually or with the help of machines.
Direct labour cost can be charged directly to the job under preparation.

10. What are the factors considered for calculating the time required for a particular job? (M/J 2009)

The factors considered for calculating the time required for a particular job are set up time, operation time, handling time, machining time, tear down time and miscellaneous allowances.

11. Define – Depreciation due' to Physical Decay (M/J – 2010)

There are certain items or equipments of a factory which do not have motion but get decay because of climatic and atmospheric effects.

12. What is meant by Depreciation due to Accident? (M/J -2009)

We know that inspite of a number of precautionary measures, sometimes accidents may occur in the industry due to hazard and facility operations. This may cause damage to the machines, plants, buildings,

vehicles or such other fixed assets. The loss in the value of the asset mainly due to undesirable, uncontrollable and unforeseen accidents is" known as depreciation due to accidents.

13. Define – Production or Manufacturing or Office Cost (N/D – 2013)

It is the cost of manufacturing a product. It includes the cost of each item incurred in manufacturing the finished product, right from purchasing the raw material to the point when the finished product is ready for sale.
It consists of factory cost and administrative expenses.
Manufacturing cost = Factory cost + Administrative expenses

14. Define – Prime Cost (M/J – 2009)

Prime cost is also called Direct cost. It consists of direct material cost, direct labour cost and direct expenses.

15. Define – Factory or Works Cost (N/D -2010)

It consists of prime cost and factory expenses. Factory cost = Prime cost + Factory expenses

16. What are the factors considered for calculating the time required for a particular job?

(i) Set up time,
(ii) Operation time,
(a) Handling time, and (b) Machining time.
(iii) Tear down time,
(iv) Miscellaneous allowances,
(a) Personal allowances, *(b)* Continoencv allowances *(c)* Fatigue allowances,
(d) Process allowances, *(e)* Interference allowances, and. (f) Special allowances.

17. Define Tear Down Time

It is the time taken to remove job, tools, and other auxiliary equipment from the machine after the last element of operation has been completed.

18. Write the definintion of Miscellaneous Allowances

Allowance is the additional time allowed to perform the Work over and above the basic time.
To obtain the standard time a proper allowances must be added depending upon the working conditions.
Standard time = Basic time + Allowances

19. Define PersonalAllowances

They are provided to the worker to fulfill his / her personal needs such as washing hands, going to the lavatory, getting water, tea, coffee, etc.
They are usually taken as 5% for male and 7% for female worker of the total working time.

20. Define Fatigue Allowances

They are intended to provide a workman an opportunity to recover from physiological and phychological effects of fatigue caused by carrying out a specified task under specified

conditions.
Fatigue may be due to excessive work, repeated work, poor lighting, poor ventilation, machine noises, visual and mental strain, etc.

UNIT – V

PART- A

1. Define – Shear Loss **(M/J 2013)**

The blank required for forging a component is cut from billets or long bars, by means of a sawing machine. During sawing, the material equal to the product of thickness of sawing blade and cross-section of bar is lost for each cut. This material loss is known as shear loss.

2. Define – Scale Loss **(M/J 2012)**

As the workpiece in high temperature during the forging processes, the oxidation of the outer surface of the workpiece will take place. That is, the heated workpiece reacts with oxygen from air forms a thin film of iron oxide on the outer surface of the wokpiece. This thin film of iron oxide is called scale.

3. Define – Flash Loss **(N/D 2012)**

When dies are used for forging, certain quantity of material comes out of the die at the parting line of the top and bottom halves of the die. This surplus wastage material is called flash.

4. What are the analysis used for overhead expenses? (N/D 2012)

(a) Factory expenses
(b) Administrative expenses
(c) Selling expenses and
(d) Distribution expenses

5. Define – Factory Expenses (N/D 2011)

It includes all indirect expenses which are incurred in connection with manufacture of the products, right from the receipt of the work order till it is completed and ready for despatch.

6. What is meant by distribution Expenses? (M/J 2011)

These are the expenses which are spent for the distribution of the product.
It includes the expenditure made on holding finished stock, packing cost and dispatching them to the customer.

7. What are the components of cost? (M/J 2011)

a. Prime cost
b. Factory or works cost
c. Manufacturing or production cost
d. Total or ultimate cost
e. Selling price

8. What is meant by Depreciation? (M/J 2010)

It is the method of spreading the cost of fixed asset over the life or experted years of use. Depreciation is the process of and acquisition cost of the asset less salvage value if any in a systematic and rational manner over the the estimated life of the asset.

9. What are the causes of depreciation? (M/J 2010)

Depreciation due to physical conditions are
1. Wear and tear
2. Physical decay
3. Accident
4. Poor maintenance and neglect

Depreciation due to functional conditions are
1. Inadequacy
2. Obsolescence

10. Define – Inadequacy (M/J 2008)

Sometimes the existing machine is functioning well, but it is not capable of coping with the increased demand. Because of the increased demand, that particular machine becomes inadequate.

11. Define –TongholdLoss (N/D 2011)

While performing some forging operations, some length of the stock (at one end) is required for holding the stock in tong. This small extra length will be removed after completion of the work piece. This loss is known as tonghold loss. Therefore this tonghold loss should be added while calculating the required stock material.

12. Define – Administrative Expenses (M/J 2009)

It includes the expenses which are incurred for general administration and management for efficient and proper functioning of the enterprise. Administrative expenses are also known as Office expenses.

13. Define – Selling Expenses (M/J 2009)

These are the expenses which are incurred for creating and enhancing the demand for the products. It includes the expenditures spent towards securing orders, creating and retaining markets for the products manufactured.

14. Define – Personal Allowances (N/D 2010)

They are provided to the worker to fulfill their personal needs such as washing hands, going to the lavatory, getting water, tea, coffee, etc. They are usually taken as 5% for male and 7% for female worker of the total working time.

15. Define – Fatigue Allowances (N/D 2010)

They are intended to provide a workman an opportunity to recover from physiological and phychological effects of fatigue caused by carrying out a specified task under specified conditions. Fatigue may be due to excessive work, repeated work, poor lighting, poor ventilation,
machine noises, visual and mental strain, etc.

16. Define Direct Expenses

Direct expenses are those which can be charged directly to a particular job and are done for that specific job only. Direct expenses are also known as *'chargeable expenses'*.
Examples of direct expenses are
Cost of preparing designs, drawings for the manufacture of a particular product.
Cost of experimental work done specifically for a *particular* product.
Cost of procuring or manufacturing special types of jigsand fixtures for the manufacture of a particular product.
Cost of hiring special types of patterns, moulding flasks,dies, *etc.*
Cost of consultancy charges for design and manufacture of a specific product.

17. Define Indirect Expenses (Overhead Expenses)

Indirect expenses are those which cannot be charged directly to a particular product manufactured.
All expenses other than the direct material cost direct labour cost and direct expenses are indirect expenses. ' Indirect expenses are also known as *'Overhead charges"* 'On *cost* and *'Burden'*.

18. What are the analysis used for overhead expenses?

(a) Factory expenses,
(b) Administrative expenses,
(c) Selling expenses, and
(d) Distribution expenses.

19. Define Factory Expenses

It includes all indirect expenses which are incurred in connection with manufacture of the products, right from the receipt of the work order till it is completed and ready for despatch.

Factory expenses are also known as *'Factory on-cost, WorksOn-cosj, 'Factory overhead', 'Works overhead" 'Production overhead" etc.*

20. Define Administrative Expenses

It includes the expenses which are incurred for general administration and management for efficient and proper functioning of the enterprise.

Administrative expenses are also known as *'Office expenses',*and *'Establishment on-cost ~*

21. Define Selling Expenses .

These are the expenses whic h are incurred for creating and enhancing the demand for the products.,

It includes the expenditures spent towards securing orders, creating and retaining markets for the products manufactured.

Exanples of selling expenses are:

(i) Expenses incurred on salaries of sales manager, clerks and attendants in the sales department.

(ii) Salaries, commissions and travelling expenses of sales . representatives or agents.

(iii) Cost of advertisement and publicity.