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63 Models relevant for Case Study Based Questions

1. **This file has complete description of all 63 Models which are used in solving case study.**
2. **Full Explanation has been covered in 73 Pages.**
3. **If you read 1 hour daily & just read 6 pages daily then you need just 12 days to master all models which are required to solve case study based questions.**

1. Value Chain Analysis	**2. Industry Structure Analysis – Porter**	3. Segmentation Analysis
4. Competitive Advantage Model	**5. Vertical Linkage Analysis**	**6. Value Shop Model**
7. Cost of Quality	8. Cost of Quality – components	**9. Total Quality Management**
10. PDCA Cycle	11. Business Excellence Model	**12. EFQM Business model**
13. Goldratt's Five-Step Method for Improving Performance	14. Supply Chain – Push & Pull Model	15. Gain Sharing arrangement
16. Just in time	17. Backflush Costing	**18. Kaizen Costing**
19. 5S Approach	20. Total Productive Management	**21. Six Sigma**
22. Six Sigma – Methods to implement	23. Lean Six Sigma	24. Business Process Re-Engineering (BPR)
25. Target Costing Approach	26. Product Life Cycle	**27. Various Strategies under Product Life Cycle**
28. Pareto Analysis	**29. Pareto Analysis – How Apply**	**30. Environment Cost – Mendoza (1999)**
31. Price Customization	32. Cost based Pricing Technique	**33. Value Based Pricing Model**
34. Pricing Strategy for New Product	**35. Skimming & Penetration Pricing**	**36. Predatory Pricing**
37. Responsibility Accounting	38. Return on Investment Model	39. Residual Income Model
40. EVA Model	**41. Shareholder value added Model**	**42. Triple Bottom Line Model**
43. The Performance Pyramid Model	**44. The Performance Prism Model**	**45. The Building Block Model**
46. Linking CSFs and KPIs to strategy	**47. Balance Score Card**	**48. Strategy Mapping (Kaplan and Norton)**

49. Negotiated Pricing	50. Resolve Divisional Conflict	**51. Strategic Profitability Analysis**
52. Direct Product Profitability	53. Customer Profitability Analysis	**54. Activity Based Management**
55. Value Added Activities	**56. Activity Based Budgeting**	57. Feedback & Feed Forward Control
58. Negative Feedback – Impact	**59. Beyond Budgeting**	60. Beyond Budgeting – How Implement
61. Planning Variances	62. Variance Analysis	63. Learning Curve


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Question 1 What are the classification of business activities in relation to value chain analysis as per Porter?

Answer:- Porter classified business activities into primary activities & secondary activities as follows

Primary activities:- It includes activities which are directly involved in converting raw material into finished goods, activities helping in delivery of goods and after-sales support.

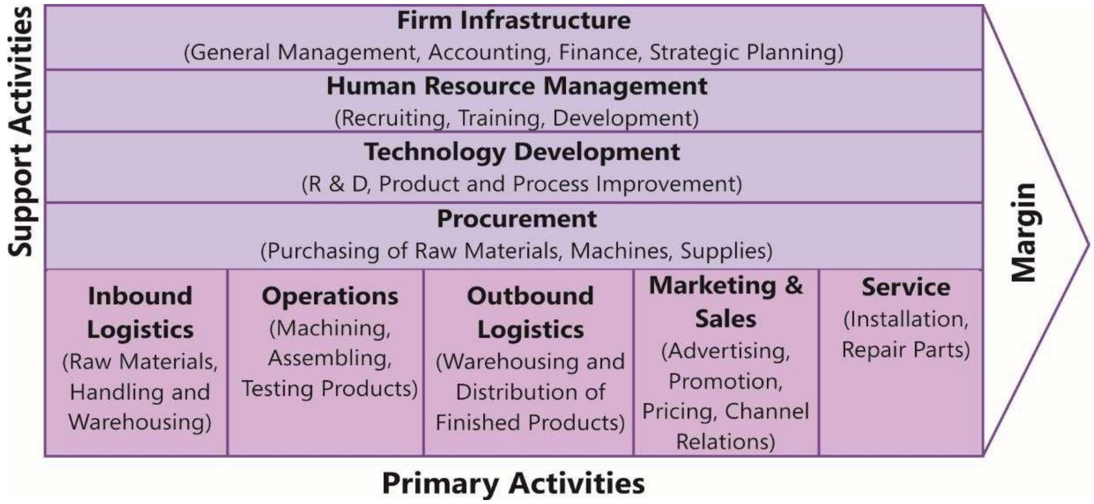
Support Activities:- It includes activities which help in carrying out primary activities e.g. purchase of raw material is support activity required for manufacturing of finished goods.

Primary Activities Include

a) Inbound activities:- These include activities in receiving, storing & distributing raw material to production process e.g. material handling & warehousing activities
b) Operations:- These include activities in transforming raw material in finished goods e.g. packing, testing
c) Marketing & Sales:- These include activities to make customer aware of product e.g. advertising, promotion
d) Service:- These include activities related to after sales service e.g. replacement of parts of product

Support Activities Include

a) Procurement:- These activities includes purchase of raw material required as input for primary activities
b) Technological Development:- These include technical knowledge, hardware & software used in transformation of raw material to finished goods
c) Human Resource Management:- These include activities involved in selection, recruitment, training & promotion of employee/labour
d) Firm Infrastructure:- These include activities involved in general management e.g. finance department, accounting department.



Question 2 Write short notes on industry structure analysis of Michael Porter?

Answer An organisation may not earn high profit just because it's size is large. Hence Porter suggested 5 factors to determine potential profitability of firm in an industry. Under this model, the profitability of an industry depends mainly upon following 5 factors -

1. **Bargaining Power of Buyers:** Bargaining power of buyers determines **<u>ability of buyer to push the price down</u>** e.g. Customer will pay less price when many alternatives with same quality is available. The bargaining power of Buyer depends on -

(a) Customer Concentration (higher concentration of customers means higher price negotiation power),

(b) Costs of switching Suppliers (lower switching costs means greater bargaining power), and

(c) Number of Alternative Suppliers (Greater alternatives means Greater bargaining power).

2. **Bargaining Power of Suppliers:** Bargaining power of suppliers is high when number of suppliers are few e.g. Raw material supplying company shall charge high price if supplier of such materials are few.

a) Just as powerful Buyers can reduce profits by putting downward pressure on selling prices, suppliers can reduce profits by increasing raw material costs.
b) The Bargaining Power of Suppliers to the Firm depends upon their contribution towards activities in Value Chains.
c) Microsoft dominate operating system business of computers and laptops and can determine terms to its buyers because buyers do not have multiple options to choose from.

3. **Threat of Substitute Products or Services:** Selling price of a product need to be very competitive when multiple substitutes are available.

(a) Profit potential is determined by the maximum price that customers are willing to pay, which in turn depends on the availability of substitutes.

(b) Products with few substitutes has higher prices than products with many close substitutes since customer will prefer switching in the latter case.

4. **Threat of New Entrants:** If an industry is profitable and barriers to entry are low, then new firms could enter industry & make pressure on existing firms to reduce selling prices.

(a) When an industry is earning a return on invested capital above the cost of capital, that industry will attract more Firms into it. Unless the entry of new Firms is barred, the rate of profit will fall to the competitive level.

(b) Even a mere threat of entry may be sufficient to ensure that existing Firms keep the selling price at low.

5. **Intensity of Competition:** In highly competitive market, a firm may resort to cut-throat competition to win more customers. Normally competition is high if number of firms are high. Intensity to competition is higher –

a) When firms are of equal size
b) When it is difficult to differentiate in the products
c) When exit cost is high since firms would continue to operate in industry inspite of changing the industry.

Question 3 Write short note on segmentation analysis ?

Answer:- A single Industry is collections of different market segments e.g. Motor vehicle industry can be seen as composite of tyre, glass, battery & metals segment. Segment analysis include analysis of competitive advantage of different segment. A firm may use this information to decide to exit a particular segment, to enter a new segment etc. Following steps are used in doing segmentation analysis –

1. Identify segmentation variables and categories: First of all a market is divided into a number of segments depending upon nature & complexity of industry. A Market may be segmented depending upon geographical area, life style of customers, price sensitivity of product, loyalty towards brand, leve of competition etc.

2. **Construct a Segmentation Matrix:** After the segments are identified, a Segmentation Matrix is created e.g. ITC company may create a matrix based on

- nature of products (Cigarettes, Hotels, Textile etc.)
- geographies (North, East, West & South)
- distribution channel (Wholesale, retail, direct)

3. **Analyse Segment Attractiveness:** The segmentation matrix is used to evaluate profitability and performance of each segment. The interrelationship among segments must be carefully considered while analysing segmental attractiveness.

4. **Identify Key Success Factors for each segment:** Make assessment of each segment on the basis of relative measure of performance. Measurement of performance is Quality, delivery, customer satisfaction, market share, profitability and return on investment. Each segment must be assessed using the most appropriate key success factors.

5. **Analyse attractiveness of Broad versus Narrow Segment Scope:** The competitive advantage of each segment may be identified in terms of low cost and / or product differentiation. Sharing the costs across different market segments may provide a competitive advantage. A segment justifying a unique strategy must be of worthwhile size to support a business strategy.

Question 4 Explain Superior performance & Competitive advantage. What are possible forms of competencies?

Answer:- Competitive Advantages:-

1. To survive in an industry, a Firm must meet two criteria - (a) Supply what customers want to buy, and (b) Survive competition. So, a Firm's overall **Competitive Advantage** is derived from the difference between Value of product to Customers and Cost of creating that product.

2. This Competitive Advantage takes two possible forms - (a) Differentiation Advantage, and (b) Low-Cost Advantage. A comparative analysis of these forms is given below –

Differentiation Advantage	Low-Cost Advantage
It occurs when **customers perceive** that a Firm's product is of higher quality, involves less risk & outperforms competing products offered by Competitors. In such case, Customers are willing to pay a premium price for this product.	A Firm **enjoys** a relative low-cost advantage if its total costs are lower than the market average.
Obtained due to - 1.Higher Quality of Products / Services, 2.Innovative Products & superior customer service, 3.Offering of a wide range of products / services in	**Obtained due to -** 1. Availability of low-cost Raw Materials, 2. Availability of Innovative technology, 3. Availability of Low-cost Distribution Channels,

accordance with Customer Expectations 4.After-Sales Support, On-Time Delivery, reducing waiting time of Customers, etc.	4. Economies of Scale, 5. Learning Curve Effects (Less Labour hours are required when workers gain more & more experience)
Advantage of differentiation advantage can be taken by **-** 1. Increasing selling prices until it just offsets the improvement in customer benefits & at same time maintaining current market share or 2. keeping Pricing at below the 'Full Premium' level in order to build Market Share.	Advantage of Low-Cost advantage can be taken by - 1. Pricing the products lower than its Competitors' so as to gain Market Share and maintain current profitability, or 2. Matching with the price of competing products and increase its profitability.
Superior relative differentiation position offers the customers **better value for an equivalent price.**	Superior relative cost position offers customers **equivalent value for a lower price.**

Question 5 Describe the steps involved in vertical linkage analysis ?

Answer:-

Vertical Linkage Analysis is a much broader application of Internal Cost and Differentiation Analysis, that includes all upstream and downstream value-creating processes throughout the industry. It considers all links from the source of raw materials to the disposal and/or re-cycling of the product. It involves the following steps -

1. Identify the Industry's Value Chain and assign Costs, Revenues and Assets to value-creating processes:

(a) The Firm should identify the Vertical Linkages in the industry Value Chain, e.g. the Petroleum Industry consists of numerous value creating processes or activities, including exploration, production, refining, marketing and distribution, which defines its Value Chain.

(b) Costs, Revenues and Assets of each value-creating process may be determined based on Relevant Cost approach, use of Market Prices, Transfer Prices, Current Replacement Cost of Assets, etc. The Information Systems to identify and analyse these subtle relationships should be developed.

2. **Diagnose the Cost Drivers for each value-creating process:** Different Cost Determinants (Cost Drivers) should be identified for each value-creating process. Direct labour-based measures or Operating Hours or other suitable measure may be identified, for each value-creating process.

3. **Evaluate the Opportunities for sustainable Competitive Advantage:**

(a) Using Benchmarking processes and by understanding how other Companies compete in each process of the industry Value Chain, a Firm can use the qualitative analysis to seek out competitive niches, even if financial data are unavailable or unreliable.

(b) To evaluate the opportunities for competitive advantage in the global marketplace, Firms should consider aspects like a country's values, political climate, environmental concerns, trade relations, tax laws, inflation rates and currency fluctuations.

Question 6 Explain "Value shop Model OR Service Value Chain" ?

Asnwer The principles of Value Shop were first conceptualized by Thompson in 1967, and properly defined by Stabell & Fjeldstad (1998), who also created the name. It is also referred to as the **Service Value Chain Model.**

A Value Shop is an organization designed to solve Customer problems rather than creating value by producing output from an input of Raw Materials.

Features of value chain concepts are as follows:-

1. Value Shops **mobilize resources** (viz. people, knowledge or money) **to solve specific problems,** i.e. delivering a solution to a business problem.

2. In Value Shop Principle, **no value addition** takes place. It only deals with the problem, figure-out the main area requires its service and finally comes with the solution.

3. The Value Shop process is **iterative,** involving repeatedly performing a generic set of activities until a solution is reached.

4. Value Shop Model is applicable for **Service Sector Entities,** like Telecommunication Companies, Insurance Companies and Banks.

5. **Support Activities** in a Value Shop comprise of –

(a) Infrastructure,

(b) Human Resource Management,

(c) Technology Development, and

(d) Infrastructure.

<u>Activities in Value Shop</u> include -

1. **Acquisition** - i.e. Identification of Problem,

2. **Problem Solving** - i.e. identifying various alternatives as Solutions to the Problem,

3. **Decision-making** - i.e. Choosing from amongst various alternative Solutions,

4. **Execution** - i.e. implementation of the appropriate Solution,

5. **Control** - i.e. evaluating the effectiveness of the Solution in solving the Problem.

Focus Areas of Value Shop includes –
1. Problem and Opportunity Assessment,
2. Resource Mobilisation,
3.Project Management,
4. Solutions Delivery,
5. Outcome Measurement, and
6.Learning.

Question 7 Write short note on Cost of Quality (COQ) ?

Answer:- During the past two decades, the business environment in many sectors has been characterized by rapid changes. The environment is ever changing and dynamic in nature. The main revolution has been the transition from a seller's market to a buyer's market. Today's business environment is characterized by Fierce competition etc. The challenge for businesses today is to satisfy their customers through the exceptional performance of their processes. We use Cost of Quality, Total Quality Management & Supply Chain Management to evaluate all business processes.

The concept of cost of quality has been around for many years. Dr. Joseph M. Juran in 1951 in his Quality Control Handbook included a section on COQ. Mr. Philip B. Crosby in his book Quality Is Free has popularized the COQ concept.

Quality is concerned with conformance to specification; ability to satisfy customer expectations and value for money. The cost of control/conformance and the cost of failure of control/non- conformance is the quantitative measure of COQ.

Views regarding Cost of Quality

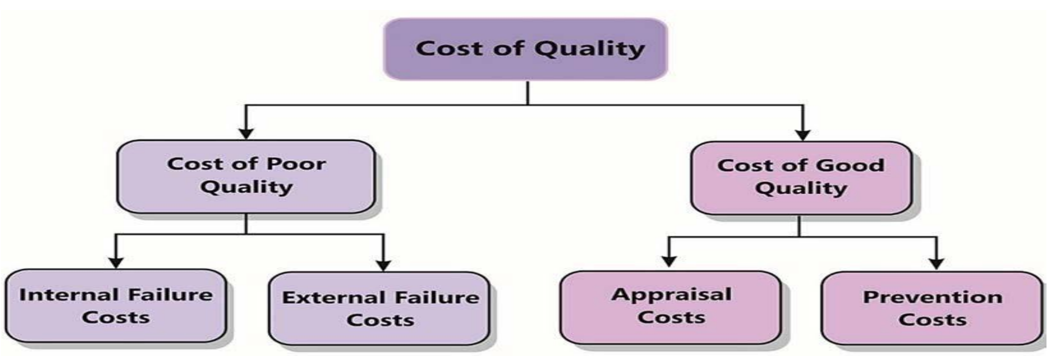
Today view of quality cost among practitioners seems fall into three categories:

Approaches to COQ:

View	Explanation
1. Higher Quality means Higher Cost.	• Quality can be achieved only by spending more towards Materials, Labour, and Expenses. • Additional Benefits obtained from such improved quality, may not always compensate for the Additional Costs incurred by the Entity. Hence, Quality Costs need not be incurred.
2. Cost Savings Cost of improving Quality	• Improving or maintaining quality, leads to higher cost. • However, such higher costs can be offset by Cost Savings in less rework, less scrap, less defectives, etc. So, it is preferable to incur Costs of Quality.
3. Quality Costs are Relevant Costs for being in business	• Quality Costs are those incurred in excess of those that would have been incurred if the product was produced / service was rendered exactly right the first time. • Costs of Quality comprises both Direct Costs (tangible, accounting costs), and also Indirect Costs (loss of Market Share, Opportunity Costs, etc. that are intangible and non-a/cing costs).

Question 8 Write short note components of Cost of Quality (COQ) ?

Answer



Components of COQ are as follows:-

1. **COQ Conformance / Compliance**:- it is also referred as Cost of Good Quality, Price of Conformance, Cost of Control, etc. It includes
   a. **Prevention Costs:** These are incurred in preventing the production of products that do not conform to specification.
   b. **Appraisal Costs:** These are incurred to ensure that materials and products meet quality conformance standards.

2. **COQ Non-conformance / Non-Compliance**:- it is also referred as Cost of Poor Quality, Price of Non- Conformance, Cost of Failure to Control, etc.
   a. **Internal Failure Costs:** These are associated with materials and products that fail to meet quality standards. They include costs incurred before the product is despatched to the customer.
   b. **External Failure Costs:** These are incurred when inferior products are delivered to customers.

Notes:

1. COQ is referred to as the P-A-F (Prevention-Appraisal-Failure) Model, which comprises the following steps -

(a) Obtain information on the number of failures / defects / quality-related problems.

(b) Identify appropriate assumptions to process the quality-reiated data effectively,

(c) Analyse the impact of various resolutions that the available to resolve the quality-related problems,

(d) Allocate the resources to address quality-related problems,

(e) Evaluate the impact of whether the resolutions have sufficiently tackled the occurrence of quality-related problems.

2. COQ can be computed - (a) in terms of effort (i.e. hours / days), (b) in terms of money (i.e. amounts), (c) in terms of percentage (% of Total Costs, % of Revenue, etc.)

3. Optimal COQ is the level at which the total of all Costs above are minimized. The relationships of COQ are as under-

(a) A small increase in Prevention Costs can lead to higher savings in Appraisal Costs,

(b) A small increase in Internal Failure Costs, can lead to reduction / avoidance of many External Failure Costs.

(c) A small increase in Cost of Compliance, leads to higher savings in Costs of Non-Compliance.

Examples of COQ

Prevention Costs	Quality Engineering, Quality Planning and Training, Quality Circles, Design Review, Preventive
Appraisal Costs	Inspection & Testing of Purchased Parts and Components, Continuing Supplier Verification & Rating, Product Acceptance
Internal Failure Costs	Waste, Scrap, Re-work, Re-inspection, Re-testing, Repair
External Failure Costs	Contribution (or) Revenue lost due to loss of reputation and Goodwill, Product Liability Warranties & Claims, Service Centre Costs for handling Customer Complaints, Replacement of Parts in Warranty

Cost of Quality (COQ)
=
Cost of Control
(Prevention Cost + Appraisal Cost)
+
Cost of Failure of Control
(Internal Failure Cost + External Failure Cost)

Question 9 Write short note on Total Quality Management ?

Answer:- Meaning

1) TQM is the integrated and comprehensive system of planning and controlling all business functions so that products or services are produced which meet or exceed customer expectations. TQM is a philosophy of business behaviour, embracing principles such as Employee Involvement, Continuous Improvement at all levels and focus, as well being a collection of related techniques aimed at improving quality such as full documentation of activities, dear goal-setting and performance measurement from the customer perspective."

2) TQM seeks to increase customer satisfaction by finding the factors that limit current performance. The TQM approach highlights the need for a **customer-oriented approach** to management reporting, eliminating some or more of traditional reporting practices.

3) The emphasis of TQM is to **design and build quality** in the product, rather than allow defectives and then inspect and rectify them. The focus is on the causes rather than the symptoms of poor quality.

Principles of TQM

1. Clear exposition of the benefits of a project. 2. Total Employee involvement (TEI). 3.Process measurement. 4. Involvement of all customers and contributors. 6. Understanding the needs of the whole process.
7. Use of graphical & pictorial techniques to achieve understanding.
8. Establishment of performance specifications and targets.
9. Use of errors to prompt continuous improvement.
10. Use of statistics to tell people how well they are doing.

Benefits of TQM:- Implementation of TQM leads to the following benefits to a Firm -

1. Increased awareness of **Quality Culture** in the Firm, 4. Greater emphasis on **Team Work,** and

2. Commitment to **Continuous Improvement,** 5. Better **Control** over processes, operations and costs.

3. Greater focus on **Customer Satisfaction.**

Question 10 Discuss PDCA Cycle in Quality Control ?

Answer:- The Plan- Do-Check-Act (PDCA) Cycle describes the activities a Firm should perform in order to incorporate **continuous improvement** in its operation. It is also referred to as the **Shewhart Cycle** or the **Deming Wheel.**

PLAN	DO
• Evaluate current process and make plans. • Identify Problems in current procedures. • Formulate basic policy to remove problems. • Prepare concrete action plans	• Translate Plans into practices through operations. • Instruct / educate / enlighten workers on Plans. • Document all changes. • Collect Data for Evaluation.

Continual Activities

ACTION	CHECK
• Review policy and plans based on audit results. • Respond to risks and initiate corrective action. • Communicate results to other Members, and implement new procedure, if successful.	• Study Data collected in earlier "Do" Phase. • Conduct Awareness Survey and Compliance Audit. • Identify and assess risks. • Compare impact on "Critical Success Factors".

Note: The circular nature of PDSA Cycle shows that Continuous Improvement is a never-ending process.

Question 11 Describe Business Excellence model in detail ?

Answer:- Concept:-

1. Business Excellence (BE) is a philosophy for developing and strengthening the management systems and processes of an Entity to improve performance and create value for stakeholders.

2. BE Model seeks to -

(a) develop **Quality Management Principles** that - (i) increase the overall efficiency of the operation, (ii) minimize waste in the production of goods and services,

(b) increase **Employee Loyalty** for maintaining high standards throughout the business,

(c) achieve **excellence** in everything that an Entity does (including Leadership, Strategy, Customer Focus, Information Management, People and Processes),

(d) **collaborate** various management thoughts as Core Concepts, and thus **structure Quality Management** in a manner that can be adapted by any Entity.

Need for BE:-

1. To strengthen the internal function and communication,
2. To cultivate strong ties with Consumers and incorporate into the Organisational Culture,
3. To develop an organizational culture oriented towards Quality, etc.

Related Points

1. Employee Involvement: Excellence cannot be attained if the Employees / Staffs are **forced** to conform to certain norms. They have to be motivated to understand -

(a) that by pursuing the goal of their Entity, they are meeting their own objectives, and

(b) that in pursuit of excellence, they learn and develop new skills.

2. **Leadership:** For achieving Business Excellence, effective leadership is required to manage all the resources efficiently. Thus, Good Leadership, Effective Communication System, Employee Empowerment, Employee Motivation, Innovative and Creative Culture are some strategies to make the employees feel connected to the Entity's Management Philosophy.

Some of the BE Models available are –

1. EFQM Excellence Model (European Model),
2. Baldrige Criteria for Performance Excellence (US Model),
3. Singapore BE Framework,
4. Japan Quality Award Model,
5. Australian Business Excellence Framework, etc.

Question 12 Describe EFQM Business model ?

Answer:- EFQM Excellence Model is a self-assessment model for an Entity that wants to assess its level of excellence. The EFQM Model presents set of three integrated components -

1. The **Fundamental Concepts of Excellence** - i.e. the basic principles that describe the essential foundation for any Entity to achieve sustainable excellence.

2. The **Criteria** - i.e. Conceptual Framework comprising five **"Enablers"** and four **"Results".**

3. The **RADAR** - i.e. logic assessment framework - management and evaluation tool for analysing the performance of an Entity.

Fundamental Concepts of Excellence:-

According to EFQM Model, the Fundamental Concepts of Excellence are -

1) Adding Value for Customers
2) Creating a Sustainable Future
3) Developing Organisational Capability
4) Harnessing Creativity & Innovation
5) Leading with Vision, Inspiration & Integrity
6) Managing with Agility
7) Succeeding through the Talent of People
8) Sustaining Outstanding Results

EFQM Criteria Model:-

According to EFQM Model –

"Enablers" Criteria covers what an Entity **does.** The 5 **"Enablers"** are –	**"Results"** Criteria cover what an Entity **achieves.** The 4 **"Results"** are –
1. Leadership	1. People Results
2. People	2. Customer Results
3. Strategy	3. Society Results
4. Partnerships & Resources, and	4. Business Results
5. Processes, Products and Service	

Relationship:

• "Results" are caused by "Enablers". There is a cause-and-effect relationships between what the Entity does and the results it achieves.

• Learning, Creativity and Innovation can help the **Enablers,** thereby leading to improved **Results.**

RADAR stands for "Results-Approaches-Deploy-Assess-Refine" logic.This represents the **Circular Flow** amongst the following components -

(a) **Results** required to be achieved,

(b) **Approaches** to be planned and developed, for achieving the Results,

(c) **Deployment** of the approaches, and

(d) **Assessment and Refinement** - of both the Approaches, and their Deployment.

Question 13 What are the steps involved in managing bottlenecks ?

Answer:- **Goldratt's Five-Step Method for Improving Performance**

The theory of constraints describes the process of identifying and taking steps to remove the bottlenecks that restrict output. The theory of constraints considers short-run time horizons and assumes other current operating costing to be fixed costs. The key steps in managing bottleneck resources are as follows:

The key steps in managing Bottleneck Resources are -

1. **Identify System Bottlenecks:** This involves identification of Constraints, which restrict output from being expanded / increased. Bottleneck Factor is the Department/Resource with the highest $\frac{\text{Re source Re quirement}}{\text{Re source Availability}}$ Ratio.

[Note: This Ratio is called as the Machine Utilisation Ratio (sometimes this is itself considered as TA Ratio).]

2. **Describe how to exploit the bottlenecks:** Only the Bottleneck can restrict or enhance the flow of products. So, it is essential to ensure that the bottleneck activity is **fully utilised.** Decision should be taken on the optimum-mix of products to be produced by the Bottleneck Activity.

3. **Sub-ordinate decisions:** Optimum Production Plan of bottleneck activity will determine the Production Schedule of the non-bottleneck activities. The production of the entire Factory is set at the pace / speed of the Bottleneck Resource.

4. **Bottleneck Removal or Improvement:** To arrive at best results, TOC emphasizes the importance of removing Bottlenecks or Limiting Factor. This involves either of two actions -

(a) **Remove the bottleneck:** e.g. replacing a Bottleneck Machine with a faster one. If the Bottleneck Activity has been replaced by a new bottleneck activity, it is necessary to return to Step 1 and repeat the process.

(b) **Increase Bottleneck Efficiency and Capacity:** This might involve providing additional training for a slow worker or changing the product design to reduce the processing time required by a Bottleneck Activity.

5. **Repeat for Other Constraints:** To arrive at best results, TOC emphasizes the importance of removing Bottlenecks or Limiting Factor. This involves either of two actions -

Question 14 What are the types of supply chain – Push & Pull ?

Answer:- During the traditional chain suppliers were at one end. Suppliers give their products to manufacturer or distributers who further send it to retailers. Although customers are the source of the profits, they are at the end of the chain in the 'push' model.

Under Push model stocks are produced on the basis of anticipated demand. Demand forecasting can be done via a variety of sophisticated techniques may be from operations research area or data mining.

Push Model	Pull Model
Process Flow: (a) Supplier gives materials to the Manufacturer/Producer. (b) Manufacturer produces Products as per Demand Forecast, and supplies to Wholesaler Distributor. (c) Wholesaler forwards goods to Retailer based on past stock movements and demand forecast. (d) Retailer stocks goods as per Supplies received. (e) Customer buys the goods, if available with Retailer. **Note:** Demand Forecasting is done by many advanced techniques including Operations Research, Data Mining, etc.	Process Flow: (a) Customer orders the Goods with Retailer. (b) Retailer calls for Stock from the Wholesaler Distributor, as per Orders received. (c) Wholesaler calls for Products from the Manufacturer as per Retailers' Orders received. (d) Manufacturer produces Products as per Orders received from Wholesaler Distributor. (e) Supplier gives materials to the Manufacturer as per orders received from the Manufacturer.
This is a production-availability based approach. Customer is generally required to buy whatever is available in the market.	This is a customer-oriented and market-driven approach. Customers have a significant voice in the functioning of the Supply Chain

Question 15 Explain gain sharing arrangement ?

Answer:-

Meaning:- It is an arrangement where a Supplier agrees to perform its side of the contract with no guarantee of receiving a payment. Instead, any payment received is based upon the benefits that emerge to the Customer as a result of the successful completion of the Supplier's side of the bargain.

Risk:- The Supplier can be described as taking an Equity Stake in the Customer rather than entering into a contract with the Customer. The Supplier has the risk of receiving no payment at all.

Returns:- If the benefits to the Customer are very high, the Supplier can be rewarded with a large return. Thus, Gain-Sharing Arrangements constitute a win-win situation for Suppliers and their Customers.

Effectiveness:- For Gain-Sharing to be effective, there must be no rewards for the Suppliers to achieve a higher return through adversarial behaviour or by hiding behind the contract.

Question 16 Write short note JIT and Scope of JIT Philosophy ?

Answer:-

A. Concept: "Just-in-Time" is a time management philosophy that seeks to utilize the most important resource, i.e. time, in an efficient and effective manner. JIT philosophy/ concept operates as under -

1. Identify significant activities in the Firm, and classify into VA (Value-Added) and NVA (Non-Value-Added) activities.

2. Simplify VA Activities so as to improve productivity/ efficiency/ output.

3. Eliminate NVA Activities, so that time earlier spent on NVA Activities can now be used for VA Activities.

4. Achieve significant cost reduction by eliminating time-related, and NVA Activity-related costs.

Scope of JIT Philosophy: To initiate processes that -

1. reduces the amount of Raw Material Inventory, and improves the quality of received parts,

2. reduces the amount of Work in Process, also reducing the number of products that can be produced before defects are identified and fixed, thereby reducing Scrap Costs,

3. manages the variety of Finished Products, aligning Production, Sales and Despatch Schedules, in order to reduce Finished Goods Inventories,

4. alter the supporting accounting systems, e.g. -

(a) Payment of Materials / Parts Suppliers on a consolidated basis per month, per quarter, etc. instead of multiple payments for every small lot purchases,
(b) Elimination of Paperwork by making payment to Suppliers based on internally generated documents,
i.e. Entity's Production as per its Production Records × Standard Material Consumption (adjusting for normal wastages).

Pre-Requisites of JIT

1. Lower Variety of Goods / Products	4. Defect-free Materials	7. TQM Culture
2. Demand Stability	5. Preventive Maintenance	8. Process Orientation
3. Vendor Reliability	6. Trained Workforce	9. Communication & Co-ordination

Question 17 What is backflush costing in JIT?

Answer:-

1. **Sequential Tracking:** Traditional normal and standard costing systems use the **Sequential Tracking** method for accounting costs. This involves recording journal entries in the same order as transactions occur, i.e. purchase, issue of materials, production, OH absorption, etc.

2. **Backflush Costing:** An alternative approach to Sequential Tracking is **Backflush Costing.** It is a costing system that **omits** recording **some or all of the journal entries** relating to the cycle from purchase of Direct Materials to the sale of Finished Goods. The Journal Entries for the subsequent stages use normal or standard costs to **work backward** to **flush out** the costs in the cycle for which the Journal Entries were omitted earlier.

3. **Suitability in JIT:** In JIT, Backflush Costing is better than Sequential Tracking method, due to large transaction volumes. However, the following issues must be corrected before effective implementation of Backflush Costing -

(a) **Accurate Production Reports:** The total production figure entered into the system must be absolutely correct, or else the wrong component types and quantities will be subtracted from stock. Errors in Production Reporting can be reduced by proper staff training and reducing staff turnover.

(b) **Proper Scrap Reports:** All abnormal scrap must be diligently tracked and recorded. Otherwise, these materials will fall outside the Backflushing System and will not be charged to inventory. Since Scrap can occur anywhere in a production process, lack of attention by any of the Production Staff can result in an inaccurate inventory.

(c) **Lot Tracing:** Lot Tracing is impossible under Backflushing System. It is required when a Manufacturer needs to keep records of which production lots were used to create a product in case all the items in a lot must be recalled. Only a **Picking System** can adequately record this information. Some computer systems allow Picking and Backflushing System to co-exist.

(d) **Inventory Accuracy:** The inventory balance may be too high at all times because the Backflushing Transaction that relieves inventory usually does so only once a day, during which time other inventory is sent to the production process. This makes it difficult to maintain an accurate set of inventory records in the warehouse.

The success of a Backflushing System is directly related to the Company's willingness to invest in a well-paid, well- experienced, well-educated production staff that undergoes little turnover.

Question 18 Write short note on Kaizen Costing?

Answer:-

1. **Meaning:** Kaizen Costing refers to the ongoing **continuous improvement program** that focusses on the reduction of waste in the production process, thereby further lowering costs **below** the initial targets specified during the design phase. It is a Japanese term for a number of cost reduction steps that can be used, subsequent to issuing a new product design to the factory floor.

2. **Need:** The need for **continuous** cost reduction, i.e. Kaizen Costing, is brought out as below -

(a) At the time of implementation of Cost Reduction Methods, there may be further chances of waste reduction, cost and time reduction and product improvement, which were not visualized or identified in earlier review.

(b) There are always opportunities to control costs, **after the Design Phase** on a new product is completed, though these opportunities are fewer than during the Design Phase.

(c) The Firm can obtain further **unplanned** cost reductions at the implementation stage, on account of workers' feedback and newer shop floor techniques.

3. **Kaizen Costing Process:** Activities in Kaizen Costing include elimination of waste in production, assembly, and distribution processes, as well as the elimination of unnecessary work steps in any of these areas. Thus, Kaizen Costing is intended to repeat many of the Value Engineering steps, continuously and constantly refining the process, thereby eliminating out extra costs at each stage.

4. **Savings from Kaizen Costing:** Cost reductions resulting from Kaizen Costing are much **smaller** than those achieved with Value Engineering. But, these are significant, since competitive pressures are likely to force down the price of a product over time, and any possible cost savings allow a Company to still attain its targeted profit margins.

5. **Kaizen Costing Principles:**

(a) It seeks to achieve gradual improvements in the existing situation, at an acceptable cost.

(b) It involves setting standards and then improving them, to achieve long-term sustainable improvements.

(c) It recognises that Improvements are endless, i.e. there is no limit to the level of improvements that are possible.

(d) It encourages collective decision-making, and application of knowledge.

(e) It covers all areas of business, and is not restricted to Shop-Floor only.

(f) It focuses on eliminating wastes, improving systems and improving productivity.

6. **Multiple Versions of Products, i.e. Continuous Kaizen Costing:** Multiple improved versions of products can be introduced to meet the challenge of gradually reducing costs and prices. The market price of products continues to drop over time, which forces a Company to use both Target Costing and Kaizen Costing to reduce costs and retain its profit margin.

However, prices eventually drop to the point where margins are reduced, which forces the Firm to develop a new product with lower initial costs, and for which Kaizen Costing can again be used to further reduce costs. This pattern may be repeated many times as the Firm forces its costs down through successive generations of products.

The exact timing of a switch to a new product is easy to determine well in advance since the returns from Kaizen Costing follow a trend line of gradually shrinking savings. Since prices also follow a predictable downward track, plotting these two trend lines into the future reveals when a new product version must be ready for production.

Question 19 Describe 5S?

Answer:-

1. **Concept:** 5S is the name of a workplace organization method that uses a list of five Japanese words: **Seiri, Seiton, Seiso, Seiketsu,** and **Shitsuke.** It explains how a work space should be organized for efficiency and effectiveness by identifying and storing the items used, maintaining the area and items, and sustaining the new order.

2. **Phases In 5S:** The 5S Phases translated are - (a) Sort, (b) Set in Order, (c) Shine, (d) Standardise, (e) Sustain.

Phase	Description
(a) **SORT** (Seiri)	• Make work easier by eliminating obstacles. • Reduce chances of being disturbed with unnecessary items. • Evaluate necessary items with regard to Cost or other factors. • Remove all parts or tools that are not in use. • Segregate unwanted material from the workplace. • Define Red-Tag area to place unnecessary items that cannot immediately be disposed of. Dispose of these items when possible. • Need fully skilled Supervisor for checking on a regular basis. • Ensure waste removal. • Make clear all working floor except using material. • Ensure daily fillings.

(b) **SET IN ORDER** (Seiton)	• Arrange all necessary items so that they can be easily selected for use. • Prevent loss and waste of time by arranging work station in such a way that all tooling / equipment is in close proximity. • Make it easy to find and pick up necessary items. • Ensure First-In-First-Out basis. • Make workflow smooth and easy. • All of the above work should be done on a regular basis. • Place components according to their uses, with the frequently used components being nearest to the work place.
(c) **SHINE** (Seiso)	• Clean the workplace on daily basis completely or set cleaning frequency time to time. • Use cleaning as inspection. • Prevent Machinery and Equipment deterioration. • Keep workplace safe, easy to work, clean and pleasing to work in. • When in place, anyone not familiar to the environment must be able to detect any problems within 50 feet in 5 seconds.
(d) **STANDARDIZE** (Seiketsu)	• Standardize the best practices in the work area. • Maintain high standards in workplace organization at all times. • Ensure that everything is in its right place. • Every process has a Standard. People should know the process of that specific job. • Standardize Color Coding of usable items.
(e) **SUSTAIN** (Shitsuke)	• This means - "Not harmful to anyone", and also translated as "do without being told". • Perform regular audits. • Focus on Training and Discipline. • Training is goal-oriented process. Its resulting feedback is necessary monthly. • Ensure Self-Discipline, to maintain proper order. • Ensure all defined standards are being implemented and heard. • Follow the process, but also be open to improvement.

3. **Application:** 5S Methodology has its origins in Manufacturing Sector, but it can also be applied to Knowledge Economy work, with Information, Software, or Media in the place of physical product. It is also applied to Sectors like Healthcare, Government, etc.

Question 20 Explain Total productive management ?

Answer:-

1. **Meaning:** Total Productive Maintenance (TPM) is a system of maintaining and improving the integrity of production and quality systems. TPM is achieved through the Machines, Equipment, Processes, and Employees that add to the value in a Business Entity.

2. **Origin:** TPM helps in keeping all equipment in top working condition so as to avoid breakdowns and delays in manufacturing processes. TPM was first introduced by M/s Nippon Denso Co. Ltd of Japan, a supplier of M/s Toyota Motor Company. Seiichi Nakajima is regarded as the father of TPM because of his numerous contributions to TPM.

3. **8 Pillars:** With 5S Concept as its Foundation, TPM operates through the following **8 Pillars,** to achieve its Goals -

Pillar	Activity and Objectives	How Achieved?
Pillar-1: **Autonomous Maintenance**	This involves operation of Equipment without breakdown and eliminating the defects at source through active Employee Participation.	Cleaning, Lubricating, Visual Inspection, Tightening of Loosened Bolts, etc.
Pillar-2: **Focussed Improvement**	This involves making minor improvements on continuous basis, reducing losses in the workplace that affect efficiencies, etc. (Kaizen Principle)	Kaizen Register, Kaizen Summary Sheet, Why-Why Analysis, Summary of Losses, etc.
Pillar-3: **Planned Maintenance**	This involves having a proper maintenance system for - (a) improvement in reliability and maintainability of equipment, (b) zero breakdowns, (c) optimum maintenance cost.	Preventive Maintenance, Breakdown Maintenance, Corrective Maintenance, and Maintenance Prevention.
Pillar-4: **Early Management**	This focuses on shortening the time required for product and equipment development.	Engineering and Re-engineering Processes.
Pillar-5: **Quality Maintenance**	This aims at achieving customer satisfaction through delivery of highest quality product.	Root Cause Analysis, Customer Data Analysis, etc.
Pillar-6: **Education 8L Training**	It aims to improve knowledge/ skills and enhance morale of employees.	Training Calendar, Policies for Education and Training, On-site Training, etc.
Pillar-7: **Office TPM**	This is the application of TPM techniques in administration to improve productivity & efficiency in those functions, and eliminate losses.	Office Automation, Analysis of Processes, Process Flow Study, etc.

Pillar-8: **Safety, Health, and Environment**	Here, the objective is to have zero accidents and zero health damages.	Safety Slogans, Quizzes, Posters, etc. to create awareness related to safety.

4. **Performance Measurement using OEE:** In TPM, Performance Measurement is done using "Overall Equipment Effectiveness" (PEE) measure, where PEE % = Performance × Availability × Quality, as explained below -

Aspect	**Performance**	**Availability**	**Quality**
Formula	$\frac{\text{Standard Time}}{\text{Actual Time}}$	$\frac{\text{Actual Time worked}}{\text{Time Available}}$	$\frac{\text{Output Qtty Accepted}}{\text{Output Qtty Produced}}$
Losses measured in this aspect	• Idling & Minor Stoppages • Reduced Speed	• Equipment Failure/ Breakdown • Set-up/ Adjustments	• Reduced Yield, • Quality Defects & Rework
Ideal Measure	> 95%	> 90%	> 99%

Note: The above Ideal Measures are as per the view of certain Scholars. However, other Scholars are of the view that an overall OEE > 50% may be considered acceptable.

5. **Implementing TPM:** Successful introduction of TPM in an Entity can be analysed in 4 stages -

(a) **Preparation** Stage: Create a suitable environment, conducting TPM awareness, training programmes, etc.

(b) **Introduction** Stage: Initialization of TPM, information to Suppliers, Customers, and other Stakeholders.

(c) **Implementation** Stage: Implementation of the Eight Pillars of TPM.

(d) **Institutionalization** Stage: Achieving the rewards for the efforts put in TPM.

6. TQM vs TPM:

Common Points: Both TQM and TPM -	• require commitment from Top Management for successful implementation, • make the Entity more competitive by reducing costs and improving customer satisfaction, • require the involvement of the Workers at all Phases, • need fundamental training and education of all Participants and Stakeholders,

	• take longer time period to obtain sustained tangible benefits.
Differences	TQM focusses on the quality of the **product,** while TPM focusses on the **equipment** used to produce the products.
Relationship	By preventing equipment break-down, improving the quality of the equipment and by standardizing the equipment, the quality of the products increases. So, TPM can be seen as a way to help achieving the goal of TQM.

Question 21 Write a short note on Six Sigma?

Answer:- Numerical Concept of Six Sigma

1. **Sigma** is a statistical term that measures how far a process deviates from perfection. The higher the Sigma Number, the closer the process is to perfection.

2. Six Sigma is 3.4 Defects Per Million Opportunities, i.e. getting things right 99.99966% of the time, as given below -

Six Sigma Capability / Productivity Chart

Level	One Sigma	Two Sigma	Three Sigma	Four Sigma	Five Sigma	Six Sigma
Denoted as	**1σ**	**2σ**	**3σ**	**4σ**	**5σ**	**6σ**
Defects per Million Opportunities (DPMO)	6,91,462	3,08,538	66,807	6,210	233	3.4
% Defectives	69%	31%	6.7%	0.62%	0.023%	0.0034%
% Yield	31%	69%	93.3%	99.38%	99.977%	99.99966%
Quality / Profitability	Loss	Non-Competitive	Average	Above Average	Below Maximum	Near Perfection

Note: It may not be possible to achieve "perfect Six Sigma" but significant benefits can be achieved from a rise from one Sigma Level to another.

Six Sigma - Concept

1. Continuous Improvement can be brought into the Firm's culture by introducing continuously changing planned targets.

2. One of the targets can be **Six-Sigma Accuracy,** i.e. the process is 99.99966%accurate. In other words, the process will/can produce only 3.4 defects per million. This is the structural meaning of Six-Sigma.

3. Six Sigma Concept is based on the fact that it is possible to develop ways of reducing defects by measuring the level of defects in a process and discovering the causes.

4. **Lean Six Sigma:** It is the combination of Lean and Six Sigma which help to achieve greater results that had not been achieved if Lean or Six Sigma would have been used individually. It increases the speed and effectiveness of any process within the Entity. By using Lean Six Sigma, Entities will be able to - (a) Maximize Profits, (b) Build Better Teams, (c) Minimize Costs, and (d) Satisfy Customers.

Question 22 What are the procedures / methodologies for implementing Six Sigma. Also provide points of distinction between DMAIC and DMADV?

Answer:-

Six Sigma Implementation Methodologies for -

Improvements in **existing** products, processes or services	Designing **new** products, processes or services
↓	↓
D, M, A, I, C Define, Measure, Analyse, Improve, Control	**D, M,A,D,V** Define, Measure, Analyse, Design, Verify

These are explained below -

1. DMAIC (for **existing** products, processes and services)

Define	• Define the process improvement goals that are consistent with the Firm's overall strategy 8i customer demands.
Measure	• Measure the existing processes to determine current performance, and to facilitate future comparison. • Collect process data by mapping and measuring relevant processes.
Analyse	• Verify Cause-and-Effect relationship between the factors in the processes. • Identify the inter-relationship between the factors which affect performance. • Make a comprehensive analysis to identify hidden or latent factors, and Root Causes for defects.

Improve	• Make a detailed plan to improve the process, by addressing and eliminating the Root Causes.
Control	• Perform initial trials or Pilot Runs, to establish process capability and transition to production. • Measure the process continuously to ensure that Variances are identified and corrected before they result in defects.

2. **DMADV** (for **new** products, processes and services)

Define	• Define the goals of the design activity, consistent with the Firm's overall strategy and Customer Demands.
Measure	• Identify the factors that are Critical To Quality (CTQs). Also assess the risks involved. • Measure factors such as Product Capabilities and Production Process Capability.
Analyse	• Develop and design alternatives & process options, to meet the Customer Demands. • Create high-level design and evaluate to select the best design.
Design	• Develop details of design and optimise it using various techniques.
Verify	• Verify designs through Simulations or Pilot Runs. • Hand over the verified and implemented processes to the Process-Owners.

DMAIC vs DMADV:

DMAIC	DMADV
Review the **existing** processes and fixes problem(s)	Emphasis on the **design** of the product and processes.
More **reactive** process.	**Pro-active** process.
Increases the **capability.**	Increases the **capacity.**
Easier to quantify the Benefits in Rupee Terms, even in short run.	Difficult to quantify the Benefits in Rupee Terms, they arise only in the long run.
Examples of DMAIC problem-solving methods: • Reduce the Cycle Time to process a Patent, • Reduce the number of errors in Sales List, • Improve Search Time for critical information, etc.	Examples of procedures that the DMADV Development Method is designed to address: • Add a new service, • Create a real-time system, • Create a multiple-source lead tracking system.
DMAIC is used when - • A. product or process exists. • The Project is part of ongoing continuous improvement process. • Strategic importance of the Project is comparatively less. • Only a single process needs to be altered. • Competitor's actions are stable.	DMADV is used when - • A product or process is not in existence • Existing process has been optimised using either DMAIC or some other process. • Projects have high strategic importance. • Multiple Processes need to be altered. • Competitor's actions are changing. • Customer's Behaviour is changing.

• Customer's Behaviour is unchanging. • Technology is stable.	• Technology is growing.

Question 23 Explain Lean Six Sigma ?

Answer:- It is the combination of Lean and Six Sigma, to achieve greater results that had not been achieved if Lean or Six Sigma would have been used individually. It increases the speed and effectiveness of any process within the Entity. By using Lean Six Sigma, Entities will be able to - (a) Maximize Profits, (b) Build Better Teams, (c) Minimize Costs, and (d) Satisfy Customers.

Question 24 Describe Business Process Re-engineering (BPR)?

Answer:-

1. Business Process: A Business Process consists of a collection of activities that are linked together in a co-ordinated and sequential manner to achieve specified goals and objectives. For example, in a broad sense, Material Handling Management may be taken to include - (a) Scheduling Production, (b) Storing Materials, (c) Processing Purchase Orders, (d) Inspecting Materials, and (e) Paying Suppliers.

2. **Business Process Re-Engineering (BPR):**

(a) BPR refers to the analysis and re-design of workflows and processes. It is a total deconstruction and re-thinking of a business process in its entirety, unconstrained by its existing structure and pattern.

(b) BPR is the fundamental re-thinking and radical re-design of business processes to achieve dramatic improvements in critical contemporary measures of performance, such as cost, quality, service, and speed.

(c) Porter's Value Chain is commonly used in BPR as a technique to identify and analyse processes that are of strategic significance to the Entity.

3. **Concept / Key Components:** The Key Components of BPR are -

(a) **Fundamental Re-thinking** of Business Processes requires Management to challenge the very basic assumptions under which it operates and to ask as "Why do we do what we do?" and "Why do we this way?"

(b) **Radical Re-design** relies on a fresh-start, clean-slate approach to examining an organization's business processes. For considering totally new ways of re-designing processes, every concept, assumption, purpose and principle should be abandoned temporarily. There is a need to proceed afresh, without influence of old ideas.

(c) **Dramatic Improvement** in performance is the pre-requisite for overcoming competition. Continuous Improvement is not sufficient when the Company is far below industry standards. In such cases, the Company needs to make **quantum leaps** in performance. Making marginal, incremental, superficial improvements to what is already being done is not the objective of BPR.

(d) A customer-focussed Firm should be re-aligned in terms of a **Process Orientation.** Processes (not functions) need to be managed effectively. The Firm should look at **"what** work is being done" & also **"how** work is being done". BPR focusses on **end-to-end Business Processes** rather than on the individual activities that comprise the processes. BPR takes a holistic view of a Business Process as comprising a string of activities that cuts across traditional departmental or functional lines.

4. **Purpose:** The aim of BPR is to improve key Business Processes in a Firm by focussing on - (a) Simplification, (b) Cost

Reduction, (c) Improved Quality, (d) Enhanced Customer Satisfaction, (e) Operational Excellence, (f) Competitive

Advantage, i.e. **"how** to compete".

5. Stages of BPR: BPR Implementation involves the following stages -

(a) **Process Identification:** Each task performed being re-engineered is broken down into a series of processes.

(b) **Process Rationalisation:** Processes which are non-value adding, should be discarded.

(c) **Process Re-Design:** Remaining processes (Value Adding) are re-designed.

(d) **Process Re-Assembly:** Re-engineered Processes are implemented in the most efficient manner.

6. **Principles of BPR:** The principles of successful BPR include the following -

Principle	Description
(a) Focus on "Outcomes" and not on tasks	• An Entity should have one person perform all the steps in a process, design the job around an objective or outcome rather than a single task. • This eliminates many handoffs, numerous errors, delays, misunderstandings, and also the traditional segregation of duties that relate to job performance. • The Customer is not concerned about how the Entity organizes itself to carry out his job. He is more concerned on the timely "outcome" and quality delivery.

(b) Single Point Data / Information Capture	• Data should be collected at a single point and stored in online data-bases for all who need them, using Information Technology Tools. • Some tools are Telecommunications, Networking, Client/Server Architecture, EDI, Image Processing, Relational Database System, Bar Coding, Intelligent Workflow Software.
(c) Link the persons performing the process, to the results expected	• BPR seeks to have those who need the results of a process perform the process. • Departments in organizations are organized around specialized functions performed for Customers for the output of other units. BPR can provide "Customers" with more timely service and reduce the OH needed to coordinate the activities of these units by having customers provide their own service.
(d) Integrate Information with Work Process	• BPR should integrate the processing of information into the Work Process that produces the information. • Thus, when a Suppliers' Invoice is submitted, the Material Receiving Department (not the Accounts Department) should compare it with the goods received and take appropriate action (e.g. rejection of Invoice or authorizing for Payment).
(e) Centralise Activities to achieve economies	• Decentralized Resources may provide better service to Customers, but lead to redundant operations and lost economies of scale. • BPR should treat geographically dispersed resources as though they were centralized, in order to achieve economies of scale, and effectiveness of operations.
(f) Line Parallel Activities instead of integrating their results	• If parallel activities have been created, BPR seeks to use Communications Networks, Shared Databases, and Teleconferencing to coordinate activities that must eventually come together.
(g) Decision Point is where the work is performed, but build controls	• Entities distinguish those who do the work from those who monitor and make decisions about the work, based on the assumption that those who do the work do not have the time, inclination, knowledge, or responsibility for monitoring and controlling what they do. • However, Information Technology Tools can be used to capture and store data, and Expert Systems to supply knowledge, to enable people to make their own decisions. • Thus, BPR seeks to changes the role of a Manager from Controller and Supervisor, to a Supporter and Facilitator. This also eliminates the Middle

	Managers who had been summarizing and reporting information to Top Management.

Process Innovation vs BPR

Process Innovation (PI)	BPR
PI seeks to implement **new processes** into an Entity.	BPR focusses on amending **existing processes.**
PI is more radical than BPR, since it seeks to change the overall structure of an Entity.	BPR is streamlining processes that are **already in place.**

Question 25 What is meaning of target costing and enumerate the steps / Features involved in target costing ?

Answer:- Meaning of Target Costing:- In today's perfect competition, selling price of product is determined by customers. A firm cannot sell at its desired selling price. Hence to earn desired profit, the only option available with a firm is to reduce cost per unit. Hence to reduce per unit cost & bring down to desired level, A firm set a standard cost to produce a product. This decided cost is called target cost.

Target Costing is defined as "a structured approach in determining the cost at which a proposed product with specified functionality and quality must be produced, to generate a desired level of profitability at its anticipated Selling Price". It is part of an overall **Profit Management** Process.

Steps involved in Target Costing

Step	Description
1	Identify **market requirements** e.g. which features, utility & design is required by customer.
2	Set **Target Selling Price** based on market competition & customer capability to pay.
3	Set **Target Production and Sales Volumes** based on expected market share & capacity of factory.
4	Set **Target Profit Margin**
5	Set **Target Cost** (or Allowable Cost) per unit. Target Cost = Target Selling Price Minus Target Profit Margin.
6	Determine **Current Cost** of producing the product.
7	Set **Cost Reduction Target** in order to reduce the Current Cost to the Target Cost.
8	Analyse **Cost reduction opportunities** using Value Engineering (VE), Value Analysis (VA) & Activity Based Costing (ABC) techniques.

9	Achieve Cost Reduction and Target Profit by **Effective Implementation** of cost reduction decisions.
10	Focus on further possibilities of cost reduction, i.e. **Continuous Improvement** program.

Question 26 Describe phases in product life cycle?

Answer:- The 4 identifiable phases in the Product Life Cycle are - (a) Introduction, (b) Growth, (c) Maturity, and (d) Decline. A comparative analysis of these Phases is given below –

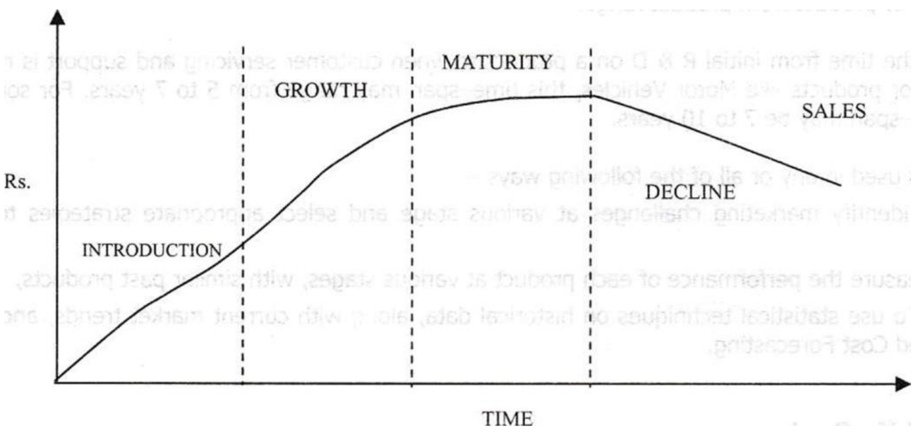
Particulars	Introduction / Development	Growth	Maturity / Stabilization	Saturation/ Decline / Replacement
Phase	**I**	**II**	**III**	**IV**
Sales Volume / Quantities	Initial stages, hence low.	Rise in sales quantities at increasing rates.	Rise in sales quantities at decreasing rates.	Sales level off and then start decreasing.
Prices of Products	Either high prices (Skimming Pricing) or low prices (Penetration Pricing).	Retention of high level prices except in certain cases. **(See Note)**	Prices fall closer to cost, due to effect of competition.	Gap between Price and Cost is further reduced.
Sales Values	Low (even inspite of skimming pricing), due to low sales quantities.	Rise in Sales Values at increasing rates.	Rise in Sales Values at decreasing rates.	Sales Value starts decreasing.
Ratio of Promotion Expenses to Sales	Highest, due to effort needed to inform potential customers, launch products, distribute to customers, etc.	Amount of SOH increases, while Ratio of S&D OH to Sales Value is reduced due to increase in sales.	Ratio reaches a normal % of sales. Such normal % becomes the industry standard.	Reduced, due to low promotional efforts as the product is no longer in demand.
Nature of Customers	Innovators, Acceptors of new changes	Early Adopters	Middle Majority	Resistors of Change, Prefer Old Styles.
Nature of Competition	Negligible and insignificant.	Entry of a large number of competitors.	Fierce Competition.	Starts disappearing due to withdrawal of products.
Major Cost	R&D Costs, Design	Manufacturing Costs,	Manufacturing	Plants re-used / sold

Items involved **(M 07)**	Costs, Promotional Costs, Capacity Costs	Distribution Costs, Product Support Costs	Costs, Distribution Costs, Product Support Costs	/ scrapped / related costs
Profits	Nil, due to heavy initial costs. Sometimes, even cash losses are possible.	Increase in Profits at increasing rates.	Normal Rate of Profits since Costs and Prices are normalised.	Declining Profits due to price competition, new products, etc.

Note 1: In the Growth Stage, the Firm will maintain prices at high levels, in order to realise maximum profits. Price Reduction will not be undertaken unless - (a) the low prices will lead to market penetration, (b) the Firm has sufficient production capacity to absorb the increased sales volume, and (c) Competitors enter the market.

Note 2: Sometimes, the above broad stages may be sub-classified into sub-stages as under -

1. Market Research
2. Design Specification
3. Design
4. Prototype Manufacture
5. Development
6. Tooling
7. Manufacture
8. Selling
9. Distribution
10. Product Support
11. Decommissioning or Replacement



Question 27 What strategies are adopted by an organisation during product life cycle stages?

Answer:- A summary of strategies during various stages of Product Life Cycle is as under –

Aspect	Introduction	Growth	Maturity	Decline

Pricing Strategies	Penetration Pricing to attract more customers, or Skimming Pricing for Niche Customers.	• Cost plus Pricing, • Value based Pricing, • Demand-Elasticity based pricing	• Pricing to match or beat competitors • Reduced prices to attract price- sensitive customers	Price Cutting to sell-off existing stocks.
Product Strategies	Basic Product only - No product refinements or addons.	Product Extensions and Add-ons, Service, Warranty features, etc.	• Brand Diversification, • More Models & Versions, • Improved Product Features.	Phasing out of weak products at lower prices.
Customer Strategies	• Acquisition of Customers, • Motivating Product Trials,	• Customer Retention, • Repeat Purchases, • Building Brand Loyalty	Preserve Loyalty of existing customers, and encourage switch-over from Competitors.	Preserve Loyalty of existing customers for next product version.
Adver tising Strategies	• Create Product Awareness and Visibility, • Inform Product Features, • Inform Dealers/Customers.	• Create interest in the product in the mass market, • Create Brand identity	Focus on Brand Differences, Superior Quality & Benefits, etc.	Maintain hard core loyalty of customers for next product version.
Distribution Strategies	• Selective Distribution to Focus Group Customers who are Early Adopters	• Expanding Supply Chain Relationships, • Make product more available & visible.	• Extensive Distribution, • Higher Incentives to Dealers, to handle competition.	Selective Distribution, Close down unprofitable distribution outlets / channels.
Promotion Strategies	• Heavy Sales Promotion • Free Trials to Customers • Sale or Return Offers	Leveraging the products' "perceived" differentiation advantages for securing market position	Incentives for - • Brand Switching, • Higher buying from loyal customers, etc.	Reduce all Promotional Expenses, and spend only for reducing inventory levels.

Question 28 Write short note on Pareto Analysis ?

Answer:- Pareto Analysis

1. Meaning:

(a) **Pareto Analysis** is a rule that recommends focus on the most important aspects of decision making, in order to simplify the process of decision-making.

(b) It is based on the 80:20 phenomenon, first observed by **Vilfredo Pareto,** an Italian economist. He noticed that 80% of the wealth of Milan was owned by 20% of its citizens. This pattern of 80:20, or approximations like 70:30 can be observed in many different business situations.

(c) Management can use this 80:20 relationship in a number of business situations to direct its attention to key control mechanism or planning aspects. It helps to clearly establish top priorities and to identify both profitable and unprofitable targets.

2. **Usefulness:** Pareto Analysis is useful to -

(a) Prioritize problems, goals, and objectives.

(b) Identify root causes.

(c) Select and define key quality improvement programs.

(d) Select key customer relations and service programs.

(e) Select key employee relations improvement programs.

(f) Select & define key performance improvement programs.

(g) Maximize Research and Product Development time.

(h) Verify operating procedures & manufacturing processes.

(i) Sales/distribution of products or services.

(j) Allocate physical, financial and human resources.

Question 29 Write short note on applications of Pareto Analysis ?

Answer:- Pareto Analysis is generally applicable to the following business situations -

Aspect	Description

Product Pricing	(a) If a Firm sells a number of products, it may not be possible to analyse cost-volume-price-profit relationships for all products. Pareto Analysis might indicate that approximately 80% of the Total Sales Revenue is earned from about 20% of the Firm's products. (b) This helps Top Management to delegate the pricing decision for approximately 80% of its products to lower managerial levels, and concentrate on pricing decisions for the important 20% products. (c) Sophisticated pricing methods can be adopted for the important products while for other products, Cost Based Pricing methods may be used.
Customer Profitability Analysis	(a) Instead of products, Customers can be analysed for their relative profitability to the Firm. Using Pareto analysis, it is often found that approximately 20% of customers generate 80% of the profit. (b) Such analysis is useful for evaluation of the portfolio of customer profile, and decision making such as whether to continue serving a Customer Group, extent of promotion expenses to be incurred, etc.
ABC Analysis - Stock Control	(a) In Raw Material Stock Control, about 80% of the materials value, is due to high priced materials, which constitute only 20% of the quantity. Hence, these materials are classified into A, B and C categories based on their importance. Control is directed primarily over 'A' category items by setting EOQ, Stock Levels, Surprise Stock Verification Procedures, etc. (b) By concentrating on small proportion of stock items that jointly accounts for 80% of the total value, a Firm will be able to control most of the monetary investment in stocks.
Activity Based Costing	(a) Activity Based Costing involves the identification of Cost Drivers for various items of OH Expenses. (b) Generally, 20% of the Firm's Cost Drivers are responsible for 80% of the Total Cost. (c) By analysing, monitoring and controlling those Cost Drivers that attribute to high costs, a better control and understanding of Overheads will be obtained.
Quality Control	(a) Pareto Analysis can be extended to discover from an analysis of Defects Report or Customer Complaints, as to which "vital few" causes are responsible for most of the reported problems. (b) Pareto Analysis indicates how frequently each type of failure (defect) occurs. The purpose of the analysis is to direct managerial attention to the area where the best returns can be achieved by solving most of quality problems, perhaps just with a single action. (c) Generally, 80% of reported quality problems are traceable to 20% of the underlying

	causes. By concentrating the efforts on rectifying the vital 20%, the Firm can have the greatest immediate impact on product quality.

Question 30 Explain the relationship of environmental costs with COQ ?

Answer:-

1. Hansen and Mendoza (1999) point out that Environmental Costs are incurred because of poor quality controls.

2. Accordingly, an Entity can manage these costs better by preparing a periodical Environmental Cost Report, based on the principles of COQ Report.

3. The categories of Environment Costs from a COQ Report Perspective is as under -

Type	Environmental Prevention Costs	Environmental Appraisal Costs	Environmental Internal Failure Costs	Environmental External Failure Costs
Meaning	Costs associated with preventing adverse environmental impacts	Cost of activities performed to examine whether products, process and activities, comply with environmental standards, policies and laws.	Costs incurred from activities that have been produced but not discharged into the environment.	Costs incurred on activities performed after discharging waste into the environment.
Examples	• Investment in Pollution Control Equipment • Defining Environmental Policies • Environment-friendly R & D • Site & Feasibility Studies	• Monitoring, testing, inspection and reporting • Improved systems & checks to prevent fines/ penalties • Regulatory Compliances • Contamination Tests • Audit of Environmental Activities	• Recycling Scrap • Disposing off toxic material • Back-end costs, e.g. Decommissioning Costs on project completion	• Cleaning up contaminated Soil. • Restoring Land to its natural state. **Note:** These costs have adverse impact on the Entity's reputation and Natural Resources.

Question 31 Describe Price customization?

Answer:- Price Customisation (or) Customary Pricing

1. **Customary Pricing** is a method of determining the Price for a good or service based on the **perceived expectations** of customers.

2. Customary Pricing is generally used for products with a relatively long market history of being sold for a particular amount, and is driven by **intuitive notions of value** on the part of Buyers.

3. Price Customization can be done in many ways, including -

(a) **Product Line:** Products and their prices can be customized based on Customer requirements. In case of Smartphone, different product versions have different prices, based on customers' preferences/ requirements as to Memory / Speed / Camera features, etc.

(b) **Past Behaviour:** A customer with good payment record may be given more discounts than new / other customers.

(c) **Demographics:** Different Pricing may be applied based on age, social status, other demographic factors, e.g. Railway Fare Concession for Senior Citizens, and Concessional Price Tickets for Students / Military Personnel, etc.

(d) **Time Differential:** This involves fixing different prices for different time period.

Question 32 Describe in detail cost based pricing method?

Answer:-

Pricing Methods

Cost Based Pricing **Competitive Pricing** **Value Based Pricing**

Cost Plus Pricing:- Cost based Pricing can take any of the following variants - (a) Cost Plus Pricing, (b) ROCE Pricing, (c) Variable Cost Pricing

1. **Cost plus Pricing:** Selling Prices of a product are determined based on its estimated Cost plus a Profit Margin. Here, 'Cost' means Full Cost at Current Output and Cost Levels.

2. **Cost Determination:** For cost determination purposes, the following principles are adopted -

Aspect	Description
Classification	Costs may be classified into - (a) Manufacturing, Administration and Selling & Distribution Costs, or (b) Variable and Fixed Costs.
Fixed Costs	(a) Variable Costs can be easily determined on a per unit basis. (b) Fixed Cost per unit should normally be based on the level of production and capacity utilisation likely to be achieved, i.e. Normal Capacity or Capacity based on Sales Expectancy.
Depre Citation	(a) Depreciation should be included as part of cost so as to leave sufficient profits for Asset Replacement. (b) Depreciation based on Historical Cost of Fixed Assets would be adequate for achieving this objective, in case of relatively stable price levels. Otherwise, Current Cost Method may be adopted.
Interest	Generally, Interest is not included for the purpose of "Cost" Computation. Interest is recognised while adding the Profit Margin, i.e. in this case, Profit means EBIT Marqin.
Different Factories	(a) **Small Entities:** An individual Manufacturer may take his Cost of Production into account and arrive at a price at which the products are to be sold in the concerned region. (b) **Medium & Large Entities:** A Manufacturer having several Factories all over the country may determine the **Weighted Average Cost** of the Factories so as to arrive at a **uniform Ex-Factory Price** for the Country as a whole.
Uniform Costing	The Selling Price may be fixed after taking into account the cost of representative unit from the Industry, which may fall within the range of lowest cost unit and the highest cost unit.

3. **Advantages:** The merits of Cost Plus Pricing include -

(a) **Guaranteed Contribution:** When Full Costs Plus basis is used for pricing, the Firm earns a guaranteed Contribution equivalent to Fixed Costs plus Profit Margin. Even, if Profit Margin is taken as Nil, Fixed Costs included in prices will guarantee minimum Contribution.

(b) **Assured Profit:** Cost plus is a fair method of price fixation. The Management is convinced that the Selling Price so determined, will cover the Cost.

(c) **Reduced risks and uncertainties:** If Sale Price is greater than cost, the risk is covered. This is true when normal expected capacity basis of cost estimation is used. It is useful particularly in long-term contract work, when the cost of work to be done is not definitely fixed at the time of making the estimate.

(d) **Most suitable in long run:** Cost plus pricing is ideal in the long run, since there are no permanent Opportunity Costs. The effect of seasonal fluctuations is ironed out and prices are established based on normal long-run costs.

(e) **Market Factors:** Cost plus pricing recognizes market forces indirectly. The mark-up added to the cost to make a price reflects the well-established customs of trade, which guide the Price Fixer towards a competitive price.

(f) **Full Recovery of all costs:** For long-run pricing decisions, Full Costs of the product inform Managers of the minimum costs to be recovered so as to continue in business rather than shut down.

(g) **Price Stability:** Price fixation based on Full Costs of the product promotes price stability, because it limits the ability of Salespersons to cut prices. Price stability facilitates planning.

(h) **Simplicity:** A Full-Cost formula for pricing does not require a detailed analysis of cost-behaviour patterns to separate Costs into Fixed and Variable components for each product. It is simple to operate.

4. Disadvantages: The demerits of Cost Plus Pricing include -

(a) **Ignores demand:** Cost Plus Pricing ignores demand and fails to take into account the buyers' needs and willingness to pay, which govern the sales volume obtainable at each series of prices.

(b) **Ignores competition:** It fails to reflect competition adequately.

(c) **Arbitrary Cost allocation:** It assumes that the costs have been estimated with exact accuracy. But, this assumption is not true in multi-product firms where the Common Costs are allocated arbitrarily.

(d) **Ignores Opportunity Costs:** For many decisions, Incremental Costs play a vital role in pricing, rather than Full Costs. Also Opportunity Costs, which are most relevant for decision-making, are fully ignored.

(e) **Price-Volume relationships:** Since Fixed OH are apportioned based on volume of production, the cost will be more if sales volume is less and vice-versa. The increase or decrease in sales volume is dependent on price. Thus it is a vicious circle - Cost plus Mark up is based on Sales Volume, and Sales Volume is based on Price.

ROCE Pricing

1. **Investment Centres:** Rate of Return Pricing is used when each division is treated as an Investment Centre. Determination of Return on Capital Employed is one of the most crucial aspects in price fixation and performance evaluation of Investment Centres.

2. **Determination of ROCE:** The Firm should determine an **average mark-up on cost,** which is necessary to produce a desired rate of ROCE. The issues to be considered are -

(a) Basis and Assumptions on which the Capital Employed is computed,

(b) Components to be covered in the ROCE, and

(c) Fairness of the ROCE.

Note: Fairness of ROCE varies from industry to industry and from time to time and is primarily dependent on - (a) the risks involved, and (b) the desirability of earning adequate profits to plough back into business.

3. **Advantages:** Allowing each Firm (and hence the industry as a whole) to earn an adequate ROCE would - (a) attract additional capital, (b) increase the number of factories and production of the commodity, which would ultimately lead to competition and reduction in costs and prices.

Variable Cost Pricing

1. Pricing below Variable Cost: To earn contribution, Selling Price is fixed above Variable Cost. However, in the short run, Selling Price may be equal to Variable Cost or sometimes even below Variable Cost. Some illustrative situations are -

(a) When goods are of perishable nature.

(b) When the Firm has already purchased huge quantities of Raw Materials, and the prices of these Materials is falling considerably in the market.

(c) To launch or introduce a new product in the market at competitive prices (using Penetration Pricing Strategy).

(d) To eliminate Competitors from the market.

(e) To obviate shut-down costs.

(f) To push up sales of another highly profitable product.

(g) To capture / retain future market.

(h) To capture / retain foreign market.

(i) To ensure sale of old and defective stocks, seconds, etc.

2. **Pricing above Variable Cost but below Total Cost:** In periods of recession, a Firm may sell its articles at a price less than the Total Cost but above the Marginal Cost for a limited period. The advantages of this policy arise due to avoidance of Shut-Down. The benefits are -

(a) The Firm can continue to produce and use the services of Skilled Employees who are well trained and will be difficult to re-employ later if discharged now.

(b) Plant and Machinery can be prevented from deterioration through idleness.

(c) The Firm would be ready to take advantage of improved business conditions later.

(d) The Firm can continue in the market and reduce loss of market share to Competitors.

Such pricing policy is necessarily restricted to the **short-run.** When business conditions improve in the long run, such pricing below Total Cost but above Marginal Cost is not advisable.

3. **Differential Selling Prices:** Use of Differential Selling Price, which is above Marginal Cost but below Total Cost, is primarily intended to **absorb surplus capacity.** It can be achieved in any of the following ways -

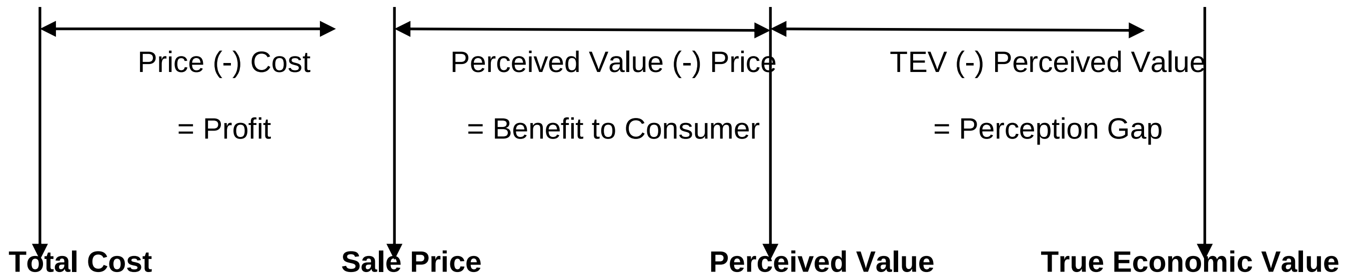
(a) **Different Markets (e.g. Export Pricing):** The Firm producing a branded article may use the surplus capacity to produce the same article to be sold above Variable Cost in a **different market,** e.g. Export Sales. The articles sold in the home market will recover all Fixed Expenses. Price reduction in the local market (DTA) will reflect on sales value and profits, and is not resorted to. Any reduction in the Selling Prices in the Export Market will not affect the price prevailing in the home market.

(b) **Different products:** The Firm may produce and sell one product, which covers the entire Fixed Overheads and use the surplus capacity to produce another product, which may be sold at a price above its Marginal Cost. The overall profitability will thus increase. The manufacture of the second product should be confined to surplus capacity, and it should not have the possibility of becoming a major product at the low price at which it is sold. If it becomes so, there will be a reduction in profit.

Question 33 Write short note on value based pricing model?

Answer:- there is an increasing trend to price the product on the basis of customer's perception of its value. This method helps the firm in reducing the threat of price wars. Marketing research is important for this method. It is based on

1. Objective value or true economic value (TEV)
2. Perceived value
3. The relationship between the terms Cost, Price, Perceived Value and True Economic Value is as under-



4.

Term	Meaning /Description
Total Cost	Total of all Costs in producing the product / rendering the service, i.e. Cost of Sales
Sale Price	Consideration charged from the Customer, for the Product / Service.
Perceived	1. It is the Value that the consumer **understands** the product delivered to it.

Value	2. It is the price of a product that a consumer is willing to spend to have that product.
True Economic Value (TEV)	1. TEV is a measure of benefits that a product is intended to deliver to the consumers relative to the other products, without giving any regard whether the Consumer can recognise these benefits or not. 2. It is also called **Objective Value.** 3. TEV = Cost of the next best alternative (i.e. cost of a comparable product offered by another Firm) + Value of Performance Differential (i.e. value of additional features provided by the Seller Firm).

Question 34 Describe pricing strategy for new product?

Answer:- New Product Pricing

A New Product is analysed into three categories for the purpose of pricing -

Category	Description
1. Revolutionary Product - i.e. a product that	(e) is **new** to the market and has the **potential** to create its own value. (f) has a **revolutionary impact** on the market and consumer behaviour. (g) replaces the existing method or technology with a **different and unique method.** (h) enjoys the benefit of **product differentials.** (i) has the potential of being a **Market Leader.** (j) may enjoy the **Premium Price** as a reward for its innovation and taking first initiative, and hence may be a **"Price Maker".**
2. Evolutionary Product - i.e. a product that	(e) introduces an **upgraded version** (with few additional characteristics) of an existing product. (f) may be priced taking Cost-Benefit, Competitor and Demand for the product into account.
3. Me-too Product - i.e. a product that	(a) emerges as a result of the success of a revolutionary product. (b) may be seen as a "imitation" of an revolutionary and/or evolutionary products' of other Firms. (c) is generally considered as a "Market Follower" (as opposed to a Market Leader) (d) is a **"Price Taker",** as the Price is determined by the mainly by the competitive

	forces.

For determining optimal prices for new products, the following procedure may be adopted -

1. **Market Survey:** Experimental sales are conducted in different markets using different prices to see which price is suitable. For example, choose three different markets and by using the same amount of sales promotional activities, ascertain what is the right price.

2. **Price Volume Relationship:** The relationship between Price and Volume should be ascertained, using the concept of elasticity of demand. The extent of volume increase due to price reduction and vice-versa, can be reasonably quantified through such analysis.

3. **Incremental Contribution Approach:** Using Incremental Contribution, i.e. Additional Total Contribution from additional sales quantity, the Firm can increase its prices as long as there is further Incremental Contribution. Such analysis may prove that the highest prices yielding the largest unit contributory margin need not necessarily maximise the profits. A lower price sometimes result in maximum profits.

Question 35 Write short note on skimming & penetrating pricing for new products ?

Answer:- Skimming Pricing for New Products

Skimming Pricing is a policy of charging **high prices** during the early period of a product's existence and in the later years the prices are gradually reduced. The reasons for following such a policy are -

1. **Inelastic Demand:** The demand is likely to be inelastic in the earlier stages till the product is established in the market. The Firm can take advantage of high prices.

2. **Sales Boost:** The change of high price in the initial periods serves to skim the cream of the market that is relatively insensitive to price. The gradual reduction in price in the later year wiil tend to increase the sales.

3. **Assured Profit:** This method is preferred in the beginning because in the initial periods when the demand for the product is not known, the price covers the initial cost of production. Contribution is guaranteed.

4. **Cost-Revenue Matching:** High initial capital outlays needed for manufacture, results in high cost of production. Also, the Manufacturer has to incur huge promotional activities resulting in increased costs. High initial prices will be able to finance the cost of production. Gradually, the economies of scale and savings in costs are passed on to customers.

Penetration Pricing for New Products

1. Penetration Pricing is a policy of using a **low price** as the principal instrument for penetrating mass markets early. This method is used for pricing a new product and to popularise it initially.

2. Profits may not be earned in the initial stages. However, Prices may be increased as and when the product is established and its demand picks up.

3. The low price policy is introduced for the purpose of long-term survival and profitability. Hence, careful analysis of the scope for market expansion and considerable amount of research and forecasting are necessary before determining the price under this Strategy.

4. The circumstances in which Penetrating Pricing can be adopted are -

(a) **Elastic demand:** The demand of the product is high when price is low. Hence, lower prices mean large volumes and so more profits.

(b) **Mass Production:** When there are substantial savings in large-scale production, increase in demand is sustained by the adoption of low pricing policy.

(c) **Frighten off competition:** The prices fixed at a low-level act as an entry barrier to the prospective Competitors. The use of this policy by existing Firms will discourage the new Firms to enter the market. This pricing policy is aiso known as **"Stay-Out-Pricing".**

Question 36 Describe non-cost factors in pricing policy? OR Write short note Predatory Pricing?

Answer:- Some pricing practices in which non-cost reasons are important when setting prices are -

1. **Price Discrimination:** This is the practice of charging to some customers a higher price than that charged to other customers, e.g. in the case of Airline Tickets, for Business Class and Economy Class.

2. **Peak Load Pricing:** This pricing system is based on capacity constraints, where a higher price for the same service or product is demanded when it approaches physical capacity limits, e.g. Telephones, Telecommunications, Hotel or Car Rentals, etc.

3. **Predatory Pricing:** Such pricing happens when a Firm with significant market power sets prices at a sufficiently **low level** with the purpose of damaging or forcing a Competitor to withdraw from the market. It may involve **dumping,** i.e. selling a product in a Foreign Market at below cost, or below the domestic market price (subject to, e.g. adjustments for taxation differences, transportation costs, specification differences), if applicable.

Question 37 Explain responsibility accounting and state types of responsibility centres?

Answer:- Responsibility Accounting

1. Responsibility Accounting is a control system of Management Accounting and Reporting.

2. It involves the creation / recognition of various responsibility centers in an organisation, classified into - (a) Cost Centre, (b) Revenue Centre, (c) Profit Centre, and (d) Investment Centre.

3. The standards of performance are clearly defined in respect of each Executive / Head of Responsibility Centre. He is clearly informed of what he is required to do and what performance is expected of him.

4. At periodic intervals, Performance Reports are furnished by the heads of Responsibility Centres.

5. The actual performance is compared with standards to identify deviations and initiate appropriate action.

Types of Responsibility Centres:

Particulars	Cost Centres	Revenue Centres	Profit Centres	Investment Centres
Meaning	A centre for which a standard amount of cost is pre-determined and used for control.	A centre devoted to raising revenue (no responsibility for production).	A centre whose performance is measured in terms of income earned and cost incurred (profit earning).	A centre responsible for earning profits and also for asset utilization.
Primary responsibility	Cost Reduction and Cost Control.	Generation of Sale Revenue.	Profit earning.	Earning Return on Investments.
Performance Evaluation	Standard Cost **Less** Actual Cost.	Budgeted Revenue **Less** Actual Revenue.	Budgeted Profits **Less** Actual Profits.	Budgeted ROI **Less** Actual ROI.
Other points	Control of cost is subject to - 1. Time, 2. Location, 3. Product.	Also responsible for some expenses related to marketing of products.	It includes those divisions which sell their output to other divisions within the Firm - i.e. inter-divisional transfer pricing.	—

Question 38 Write a short note on Return on Investment (ROI)?

Answer:- Return on Investment (ROI) Model:

Concept	1. Divisional ROI = Divisional Profit expressed as a percentage of the Assets employed in the Division.

	2. Assets Employed can either be - (a) Total Divisional Assets, (b) Assets controllable by the Divisional Manager, or (c) Net Divisional Assets.
Merits	1. Ideal for comparison across Corporate Divisions for Companies of similar size and in similar sectors. 2. Focus is on the ROI, and not on the absolute size (amount) of a Division's Profits. 3. Easy to understand, compute, and evaluate performance.
Demerits	1. May not support Goal Congruence, since there can be decisions which may decrease the Divisional ROI, but may make the Company as a whole better off. 2. Does not recognize the effects of one Division's decisions on the other Corporate Divisions.

Question 39 Write a short note on Residual Income (RI) Model?

Answer:- Residual Income (RI) Model:

Concept	1. Residual Income is defined as Controllable Contribution less a Cost of Capital Charge on the Investment controllable by the Divisional Manager. So, Residual Income of a Division = Divisional Profit (less) [Divisional Investment × Cost of Capital]. 2. Cost of Capital may be taken as applicable for the overall Company, or as applicable for a particular Division.
Merits	1. There is a greater probability that Divisional Managers will be encouraged, when acting in their own best interests, also to act in the best interests of the overall Company. 2. Easy to understand, compute, and evaluate performance.

and measures of a Firm's BSC are derived from the Firm's vision and strategy.

Question 40 Write short note on economic value added (EVA) model?

Answer:- Economic Value Added (EVA) Model:

Concept	1. **EVA** = Net Operating Profit after Tax (NOPAT) less [WACC × Capital Employed]. 2. **NOPAT** is computed as - (a) Operating Profit (EBIT) (-) Tax Expense (+) (Interest × Tax Rate) [OR] (b) Profit After Tax (EAT) + [Interest × (100% - Tax Rate)].
	1. EVA seeks to overcome the shortcomings of EBIT or Profit as a Performance Measure.

Merits	2. EVA recognizes the Cost of Equity Capital. Entities generate wealth only when they generate a Return in excess of the Return required by Providers of Capital - both Equity and Debt. 3. Profit as per Financial Statements is calculated as per Accounting Standards and does not truly reflect the wealth that has been created. Hence, EVA is a better performance evaluation measure.
Demerits	1. Use of WACC (Opportunity Cost of Capital) requires careful consideration of many factors, and may not always be subjective. 2. The base figure for computation viz. Operating Profit, may be manipulated in Financial Statements.

Question 41 Write short note on Shareholder value added (SVA) model?

Answer:- Shareholder Value Added (SVA) Model: (Alfred Rappaport)

Concept	1. Shareholder Value = Value of a Company's present and future Cash Flows, discounted at an appropriate Cost of Capital. SVA per Share = Total Shareholder Value ÷ Number of Shares Outstanding. 2. SVA can be used at - (a) the overall Entity level (for decisions like re-investment in present businesses vs dividends, Mergers & Acquisitions, etc. and (b) Business Unit Level (for evaluating Divisional Performance). 3. The following **"Value Drivers"** are considered to impact Shareholder Value - (a) Fixed Capital Investment, (b) Investment in Working Capital, (c) Rate of Sales Growth, (d) Operating Profit Margin, (e) Income Tax Rate, (f) Cost of Capital, and (g) Life of the Project.
Merits	1. It recognizes Future Cash Flows also. It is not merely a historical measure of profits actually earned. 2. It has all the advantages of EVA as to recognition of Capital provided by Equity and Debt.
Demerits	1. Value is not just a financial concept. Shareholders can attach non-financial values also, e.g. Corporate Social Responsibility. 2. Most Shareholders are not informed enough to understand the basis of computation of SVA. For them, it is merely a number provided by the Company in its Annual Reports.

Question 42 Write short note on Triple Bottom Line (TBL) model?

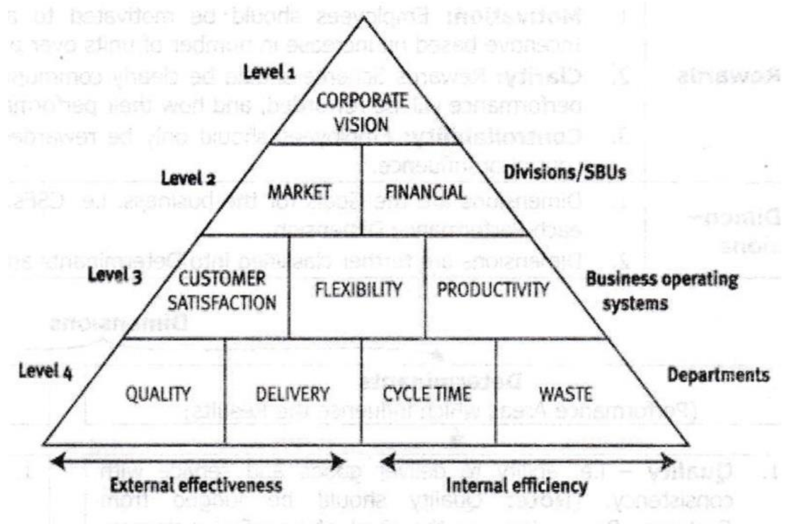
Answer:- Triple Bottom Line (TBL) Model: (John Elkington)

Concept	Bottom Line represents "Profit" or "Loss". TBL (or 3BL or 3P) Concept focusses on the following dimensions - 1. **People,** i.e. the **Social Equity** Bottom Line - relates to Corporate Governance, Motivation, Incentives, Health and Safety, Human Capital Development, Human Rights, Ethical Behaviour - i.e. Fair and Beneficial Business Practices toward Labour and the Community and region in which an Entity conducts its business. 2. **Planet,** the **Environmental** Bottom Line - relates to sustainable environmental practices, and measures the impact on resources, such as air, water, ground and waste emissions. 3. **Profit,** the **Economic** bottom line - deals with the Economic Value added by the Entity, i.e. "real" economic benefit enjoyed by the host society, and measures the Company's success in that context.
Merits	1. TBL expands the traditional Financial Reporting Systems, and includes social and environmental performance, in addition to financial performance. 2. TBL can be used to help encourage each Division and Manager to act in a socially responsible manner. 3. TBL recognizes all Stakeholders' interests in the 3P Dimension - People, Planet and Profit.
Demerits	1. TBL is unenforceable due to the difficulty of achieving global agreement on simultaneous policy on all 3Ps. 2. The 3Ps cannot easily be added up. It is difficult to measure the Planet and People dimensions in the same terms as Profits - that is, in terms of money.

Question 43 Write short note on “The Performance Pyramid” model ?

Answer:- “The Performance Pyramid” Model: (Cross and Lynch)

Performance Pyramid links the business strategy with day-to-day operations, as under -



1. **Level 1 or Top Level:** The Entity's Corporate Vision of long term success and Competitive Advantages are described in this level.

2. **Level 2 or Business Level:** This focusses on achievements of an Entity's CSF in terms of market and financial measures. The marketing and financial success of a proposal is the initial focus for the achievement of Corporate Vision.

3. **Level 3 or Operating System Level:** The

above businesses are linked to achieving Customers' Satisfaction, Increase in Flexibility and High Productivity. The above driving forces can be monitored using the Operating Forces of the Entity.

4. **Level 4 or Department Level:** These deal with the measureable factors through which the work is performed.

5. "Objectives" are shown from top to bottom, whereas "Measures" are from bottom to the top.

6. The Left-hand side of the pyramid contains External Effectiveness which are primarily "non-financial" in nature, while the Right-hand side contains Internal Efficiency which are pre-dominantly "financial" in nature.

Question 44 Write short note on "The performance Prism" model?

Answer:- "The Performance Prism" Model (Andy Neely and Chris Adams):

Concept	The Performance Prism aims to manage the performance of an Entity from five inter-related "facets" - 1. **Stakeholder Satisfaction** - who are the Stakeholders and what do they want? 2. **Stakeholder Contribution** - what does an Entity want and need from its Stakeholders? 3. **Strategies** - what Strategies an Entity should adopt, to satisfy the wants and needs of the

	Entity, as well as its Stakeholders? 4. **Processes** - what Processes does the Entity need to put in place to enable it to execute its Strategies? 5. **Capabilities** - what Capabilities does the Entity need to put in place to allow it to operate its Processes?
Features	1. It takes Stakeholder Requirements as the start point for the development of Performance Measures rather than the strategy of the Entity. 2. It recognises the need to work with Stakeholders to ensure that their needs are met.
Merits	1. Whiie Balanced Score Card and Performance Pyramid focus only on Shareholders and Customers, the Prism approach focusses on **all** Stakeholders, including Regulators, Business Communities, etc. 2. Prism Approach is much better when compared to Value-based management (EVA, SVA, etc.), which prioritizes the needs of Shareholders only. 3. Use of Prism Approach to develop measures for each relevant Stakeholder, facilitates the communication and implementation of strategy. 4. Prism Approach enables an Entity to more directly address the risks and opportunities in its business environment.

Question 45 Write short note on "The Building Block" model?

Answer:- 'The Building Block" Model: (Fitzgerald and Moon)

Concept	This Mode! focusses on three aspects - **1. Standards-** i.e. KPIs or Measures used for performance evaluation, 2. **Rewards** - i.e. Incentives provided if Standards are met, KPIs are achieved, etc. 3. **Dimensions** - i.e. Goals of the Business, measured from different viewpoints.
Standards	Standards are the KPIs or Performance Measures used for evaluation. It should have the following features - **1. Ownership** (acceptable to everyone): Ownership here refers to the responsibility for the results. Employees should be got involved in the identification of measures rather than being imposed on them. 2. **Achievability** (realistic): Standards perceived as impossible, do not motivate people into performance. To ensure that Employees are motivated to meet Standards, the Standards should be clear and linked to controllable factors.

	3. **Equity** (equally challenging for all parts of business): Relaxation given to one part of the Business leads to perception of unfair treatment and affects productivity.
Rewards	Reward Schemes should have the following features - 1. **Motivation:** Employees should be motivated to achieve the Business Goals. **Example:** Employee Incentive based on increase in number of units over previous year, for Sales Growth Goal. 2. **Clarity:** Rewards Scheme should be clearly communicated to employees in advance, as to what kind to performance will be rewarded, and how their performance will be measured. 3. **Controllability:** Employees should only be rewarded or penalized of the result over which they some control or influence.
Dimensions	1. Dimensions are the Goals for the business, i.e. CSFs. Suitable Measures must be developed to measure each Performance Dimension. 2. Dimensions are further classified into Determinants and Results, as explained below.

Question 46 Write a short note on linking CSFs and KPIs to strategy?

Answer:- Linking CSFs and KPIs to Strategy

	Critical Success Factors (CSF)	**Key Performance Indicators (KPI)**
Meaning	CSFs represent objectives that Businesses are trying to achieve, as an Entity, as a Department, or as a Business Unit.	KPIs are the sets of measures and associated targets, that will result in successful completion of a CSF.
Focus	CSFs denote the **"what"** factors - i.e. what are the things the Company needs to do in order to achieve its goals.	KPIs represent the **"how"** factors - i.e. how the Company will achieve what it wants to.
Linkage	CSFs are elements tied to the overall strategy of the Business. They are derived from the strategic goals.	KPIs are elements linked to the CSF. A single CSF can have more than one KPI, if required.
Purpose	CSFs seek to go deeper into the high-level strategic goals, and lay them out as a list of categorized objectives that will collectively drive the Company's strategy forward.	KPIs seek to operationalize the CSFs into achievable elements called Targets or Thresholds. KPI Targets should be specific, measurable, achievable, relevant and time-constrained.

Factors	CSFs are determined using factors like - (a) Industry Structure, (b) Competitive Strategy, (c) Environmental Factors, and (d) Temporary Influences.	KPI Targets are ascertained using factors like Industry Analysis, and Internal Analysis.
Review	CSFs should be reviewed and evaluated with respect to the Company's high-level strategic goals.	KPIs should be governed by a feedback and monitoring process, to achieve CSFs & Goals.

Question 47 Write concept of Balanced score card (BSC)?

Answer:- Concept of BSC

1. BSC is a set of financial and non-financial measures relating to a Company's Critical Success Factors (CSF).

2. It is an approach advocated by Kaplan & Norton, which provides information to Management to assist in strategic policy formulation and achievement.

3. The main objective of Balanced Score Card is to provide a comprehensive framework for translating a Firm's strategic objectives into a coherent set of performance measures.

4. A well-designed BSC combines financial measures of past performance with measures of the Firm's drivers of future performance. The specific objectives

Perspectives in BSC

Perspectives in a Balanced Score Card

What we want to achieve?	How we plan to accomplish it?

↓ ↓ ↓ ↓

Financial Perspective	**Customer** Perspective	**Internal Business** Perspective	**Learning & Growth** Perspective
↓	↓	↓	↓
To succeed financially, how should we appear to our Shareholders?	To achieve our Vision, how should we appear to our Customers?	To satisfy our Shareholders and Customers, What Business Processes must we excel at?	To achieve our Vision, how wili we sustain our ability to change and improve?

Perspective	Description
Financial Perspective	• Corporate strategy and strategic initiatives are examined from the financial perspective to see feasibility of these initiatives of being met. • Financial performance measures indicate whether the company's strategy implementation and execution are contributing to its revenue and earnings.
Customer Perspective	• Companies should identify customers and market segments in which they compete and also the means by which they provide value to these customers and markets. • Lead indicators or Differentiation features which make a particular business unit or product different from that of others should be identified. • Examples of Lead indicators include - (i) On-time delivery, (ii) On-site service, (iii) After sales support, (iv) Defects per order, (v) Cost of the product, (vi) Free shipments, etc.
Internal Business Perspective	• Companies should identify processes and activities which are necessary to achieve the objectives as identified at financial perspectives and customer perspective stage. • These objectives may be achieved by reassessing the value chain and making necessary changes to the existing operating activities.
Learning & Growth Perspective	• Companies should determine the activities and infrastructure that the company must build to create long term growth, which are necessary to achieve the objectives set in the previous three perspectives. • Organisational learning and growth comes from three principle sources - (i) People i.e. employee capabilities, (ii) Systems i.e. information system capabilities, and (iii) Organisational procedures i.e. motivation, empowerment and alignment.

Question 48 Write short note on strategy mapping (Kalpan & Norton)?

Answer:- Strategy Mapping (Kaplan and Norton)

1. Strategy Mapping -

(a) allows Entities to describe and communicate their strategies,

(b) serves as a basis for the development of financial and non-financial BSC measures that can be used to monitor strategy execution and performance,

(c) links & aligns organisational and individual targets and initiatives with a defined mission and desired strategic outcomes,

2. Strategy Maps can be created for Profit-oriented as well as Not-For-Profit Entities.

Question 49 Write short note on bargained or negotiated pricing?

Answer:- **Negotiated or Bargained Transfer Pricing**

1. Meaning:

(a) Negotiated Transfer Pricing refers to the determination of Transfer Prices based on active participation, involvement, co-ordination and agreement of the Managers of the Transferring and Recipient Divisions.

(b) In this method, each decentralised unit is considered as an independent unit. Such units decide the Transfer Price by negotiations or bargaining.

(c) Divisional Managers have full freedom to purchase their requirement from Outside Suppliers, if the prices quoted by the Transferring Division are not acceptable to them.

2. **Advantages:** (a) **Proper Decisions:** Negotiated Prices lead to business-like attitude amongst divisions of the Company. The Buying Division may purchase from outside sources, if the outside prices are lower than the Internal Division's price.

(b) **Autonomy and Motivation Vaiue:** Buying and Selling Divisions are completely free to deal outside the Company. This promotes sub-unit autonomy and motivates Managers.

(c) **Optimality:** Through properly directed negotiations, Managers can determine the appropriate Transfer Prices that satisfy the requirements of the Divisions and is in the best interest of the Company as a whole.

3. **Limitations: M 03**

(a) **Sub-Optimal:** The agreed Transfer Price may depend on the negotiating skills and bargaining powers of the Managers involved. The final result may not always be optimal.

(b) **Conflicts:** Rather than agreement on Transfer Prices, negotiations can lead to conflict between divisions and may require top-management mediation.

(c) **No scope for Performance Evaluation:** Transfer Prices dependent on Manager's negotiation skills will defeat the very purpose of performance evaluation.

(d) **Time and Cost:** Negotiations are time-consuming for the Managers involved, particularly when the number of transactions and inter-dependencies are large.

4. **Pre-conditions for Negotiated Transfer Pricing:** For an effective system of transfer pricing -

(a) Prices of all transfers in and out of a Profit Centre should be determined by **negotiation** between the buyer and the seller divisions.

(b) Negotiations should have **access to full data** on alternative sources and markets, and to public and private information about market prices.

(c) Buyers and Sellers should be completely **free to deal outside** the Company.

Question 50 Explain divisional conflict and ways to resolve it?

Answer:- Conflicts between Divisions and Company

1. **Objectives and Conflicts:** The criteria for fixing Transfer Prices are - (a) Goal Congruence, (b) Management Effort, (c) Segment Performance Evaluation, (d) Sub-unit autonomy, and (e) Motivation Value. However, no single transfer price can serve all of these criteria. They often conflict and managers are forced to make trade-offs.

Some situations of conflicts between objectives are -

(a) **Goal Congruence vs Performance Evaluation:** The Transfer Price that leads to the short-run optimal economic decision is Relevant Cost. If the Transferring Division has excess capacity, this cost will be equal to Variable Cost only (since Opportunity Costs are Nil). The Transferring Division will not recover any of its Fixed Costs when transfers are made at Variable Costs, and will therefore report a Loss.

(b) **Goal Congruence vs. Divisional Autonomy:** In case of failure of a division to achieve the objective of 'Goal Congruence', the Management of the Company may dictate their 'Transfer Price'. If a Transfer Price is imposed on the Manager of the Supplying Division, the concept of divisional autonomy and decentralisation is undermined.

(c) **Performance Evaluation vs Profitability:** A Transfer Price that may be satisfactory for evaluating divisional performance may lead divisions to make sub-optimal decisions when viewed from overall Company perspective.

2. **Conflicts between Divisions and Company as a whole:** If Divisional Managers are given "absolute free hand" in decision making on Transfer Prices, there is a possibility that divisional goals may be pursued, ignoring overall Company interests. This may force the top Management to interfere in decision-making.

However, interference of top Management and "dictating a Transfer Price" on the divisions is usually the main basis of conflict between a Division and the Company as a whole.

3. **Conflicts Resolution:** To resolve transfer pricing conflicts, the following transfer pricing methods can be suggested -

(a) Dual-Rate Transfer Pricing System, and / or (b) Two-Part Transfer Pricing System.

Dual Rate Transfer Pricing System

1. **Dual-Rate Transfer Pricing** uses two separate Transfer Prices to price each inter-divisional transaction, as under –

Dual Rate Transfer Pricing Method

Debit Cost in Recipient Division Cost = Relevant Costs, i.e. Variable Cost + Opportunity Cost, if any	Credit Income in Transferring Division Income = Market Price, or Full Cost plus mark-up (whether or not Intermediate Product is marketable)

Under this method, **Company Profits = Total of Divisional Profits Less Inter-Divisional Mark-up,** (i.e. difference between two Transfer Pricing Rates used above X Quantity Transferred)

2. **Advantages:**

(a) **Incentive to Transferring Division:** The Transferring Division Manager is motivated to transfer the Intermediate Product internally, since each unit transferred generates a profit (due to mark-up).

(b) **No Unjust Enrichment:** If the Transfer Price is set at the Transferring Division's Marginal Cost for the Intermediate Product, that division will not have any contribution from internal transfers. All the total contribution from inter-divisional trading will be assigned to the Recipient Division. Such unjust enrichment is avoided through the use of mark-up.

(c) **Optimal Decisions:** Since Relevant Cost is used as the second Transfer Price, (for debiting Cost in Recipient Division) the Transfer Pricing system automatically promotes goal congruence by leading to optimal decisions.

3. Disadvantages:

(a) **Confusing:** Use of different Transfer Prices causes confusion, particularly when more than two divisions are involved.

(b) **Artificial:** Dual Transfer Prices are considered to be artificial.

(c) **No incentive:** Fixed Price with mark-up protects Transferring Divisions from competition. It gives them little incentive to improve their productivity.

(d) **Misleading:** Dual Transfer Prices can result in misleading information and create a false impression of divisional profits. There is a possibility of double-counting of profits. At the extreme, ail divisions may report profits, when the Company as a whole is losing money.

Two Part Transfer Pricing System

1. This is another method of resolving Transfer-Pricing disputes between a Division and the Company as a whole.

2. Under this method, **Transfer Price** = **Marginal Cost** + **Lump-sum Fixed Fee.**

3. This Method is most suited when there is **no market** for the Intermediate Product, and the Transferring Division has no capacity constraints.

4. The Transferring Division is provided with sufficient incentive for internal transfer, since Marginal Costs are fully recovered and the lump-sum fee received will reduce its losses by recovering Fixed Costs.

5. The Recipient Division is also interested in the internal procurement, since the Transfer Price will be less than the Market Price or Cost of alternative option like outsourcing, etc. Moreover, the lump-sum fixed fee constitutes a commitment of the Recipient to utilise a portion of the capacity of the Transferring Division, for an agreed compensation.

Question 51 Write short note on Strategic profitability analysis?

Answer:- Strategic Profitability Analysis

Variance Analysis (Standard Costing) provides a means for evaluating the reasons for variation between Budgeted and Actual Profit. The Strategic Analysis of Operating Profit under 3 major components - (a) Growth, (b) Price Recovery, and (c) Productivity - are discussed.

Strategic Analysis of Operating Profit

Growth Component

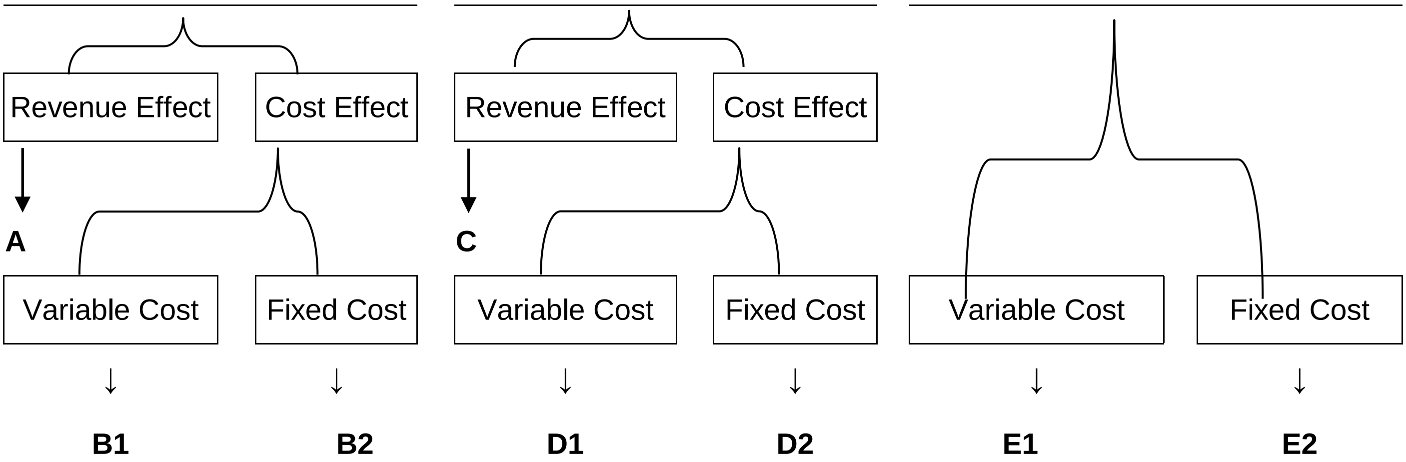
(for measuring the increase/ decrease in Revenue and Costs, due to **change in jSale Quantity)**

Price Recovery Component

(for measuring the Change in the Revenue & Costs due to **Changes in Prices)**

Productivity Component

(for measuring the Change in Operating Income due to **Changes in Product Mix and/or Yield of Inputs)**



Formula for measuring the above: Note: CY = Current Year, **LY** = Last Year

Note: All Formula (whether Revenue or Cost Effect) should be carefully applied so as to correctly recognise Favourable and Adverse impact on Operating Profit.

Component	**Computation Formula**
Growth Component	
A. Revenue Effect	(Sales Quantity in CY - Sales Quantity in LY) × Selling Price in LY
BI. Variable Cost Effect	Input Prices for LY × (A - B) where - A = Actual Units of Input used to produce LY Output, i.e. Base Year Standards. B = Units of Input that would have been used to produce CY output, i.e. Standard Consumption for Actual Output, assuming the same input-output relationship in LY.
B2. Fixed Cost Effect	Price pu of Capacity in LY × (A - B) where - A = Actual Units of Capacity used to produce LY Output, i.e. Base Year Standards. B = Units of Capacity that would have been used to produce CY output, i.e. Standard Capacity for Actual Output, assuming the same relationship in LY.
Price Recovery Component	
C. Revenue Effect	(Selling Price of CY - Selling Price of LY) × Sale Quantity in CY
D1. Variable Cost Effect	(A - B) × C where - A = Input Prices for LY, i.e. Standard Prices of Materials, etc. for LY. B = Input Prices for CY, i.e. Standard Prices of Materials, etc. for CY.

	C = Units of Input that would have been used to produce the CY output, i.e. Standard Consumption for Actual Output, assuming the same input-output relationship in LY.
D2. Fixed Cost Effect	(A - B) × C where - A = Input Prices for LY, i.e. Standard Prices of Materials, etc. for LY. B = Input Prices for CY, i.e. Standard Prices of Materials, etc. for CY. C = Units of Capacity that would have been used to produce CY output, i.e. Standard Capacity for Actual Output, assuming the same relationship in LY.
Productivity Component	
El. Variable Cost Effect	Input Prices for CY × (A - B) where - A = Units of Input that would have been used to produce CY Output, i.e. Standard Consumption for Actual Output, assuming the same input-output relationship in LY. B = Actual Input or Capacity used for CY.
E2. Fixed Cost Effect	Price pu of Capacity in CY × (A - B) × C where - A = Units of Capacity that would have been used to produce CY Output, i.e. Standard Capacity for Actual Output, assuming the same relationship in LY. B = Actual Input or Capacity used for CY.

Question 52 Write short note of Direct Product Profitability (DPP)?

Answer:- Direct Product Profitability (DPP)

1. Cost Analysis: The Traditional Absorption Costing System is not suitable for Retail Trade businesses, for cost analysis and control. Hence, to meet the requirements of retail trade activity the concept of **Direct Product Profitability** has been developed parallel to ABC. For Retail Trade Business, Costs are classified as under -

COSTS

Costs of Purchases

(i.e. Bought-In Costs)

Other Costs

Attributable Product Costs

Indirect Costs

(a) **Volume / Space related Costs** - e.g. storage charges, insurance etc.

(b) **Transport Cost** - e.g. Delivery Costs, Fuel, Vehicle Maintenance, Transport Labour, etc.

(c) **Batch-related Cost** - e.g. Shelf Stocking Costs, other time and product related costs

(d) **Inventory Financing Costs**

Incurred for an activity **not** directly linked to a particular product.

2. **DPP Statement:** The Direct Product Profit Statement is presented in the following format -

	Particulars / Product	**A**	**B**	**C**	**D**	**Total**
	Selling Price per unit	XX	XX	XX	XX	XX
Less:	Bought-in-Price per unit	XX	XX	XX	XX	XX
	Gross Margin per unit	XX	XX	XX	XX	XX
Less:	Directly Attributable Product Costs	XX	XX	XX	XX	XX
	1. Warehousing and Storage Costs - e.g. space, insurance	XX	XX	XX	XX	XX
	2. Transport Costs - e.g. fuel, vehicle maintenance, labour	XX	XX	XX	XX	XX
	3. Product Batch Costs	XX	XX	XX	XX	XX
	4. Inventory Financing Costs	XX	XX	XX	XX	XX
	Direct Product Profit per unit	XX	XX	XX	XX	XX
Less:	Indirect Costs and Common Overheads					XX
	Net Profit					XX

3. **Benefits of DPP Analysis:**

(a) Better Cost Analysis,

(b) Better Pricing Decisions,

(c) Better Management of Stores and Warehouse Space, and

(d) Rationalisation of Product Ranges.

4. **DPP in Decision making:** DPP per unit is used for decision-making along with the following indicators -

(a) **DPP as % of Sales Value:** DPP as % of Sales Value is determined to identify products with the highest DPP return. This is used as an indicator for decisions like - where to display the stock and in what position on the shelves, etc. Generally - (i) Stock at eye level sells more quickly than that above or below eye level, and (ii) Goods at the front of the store tend to sell faster than goods at the back. Hence, the brand with the greatest DPP should be placed at eye level and in front of the store.

(b) **DPP per unit of time:** DPP per unit of time, say hour, helps in determining the nature of movement of products. This helps in identifying fast moving products with higher gross margin and DPP.

(c) **DPP per unit of space:** DPP per unit of space helps in product and inventory planning, particularly when the showroom / shop space is the Key Factor.

Question 53 Write short note on Customer Profitability Analysis?

Answer:- Customer Profitability Analysis

1. Meaning: Different customers or groups of customers differ in their profitability. Hence, using ABC, profitability can be analysed customer group-wise, since ABC creates cost pools for activities. Customers use some activities but not all, and different groups of customers have different 'Activity Profiles'. Hence analysis of relative profitability based on customer category and related decision-making is called Customer Profitability Analysis.

2. **Illustrative areas of Customer Profitability Analysis:**

(a) **Banks:** Activities such as - (i) Withdrawal of cash, (ii) Request for a statement, (iii) Stopping payment of a cheque, and (iv) Returning a cheque because of insufficient funds, are analysed. Different customers or categories of customers will each use different amounts of these activities and so customer profitability profiles can be built up, and customers can be charged according to the cost of serving them.

(b) **Hotels:** Facilities offered and the category of customers who use them can be related or linked in order to determine relative profitability. Such analysis will show the relative profitability and lead to strategies for encouraging the more profitable group of guests.

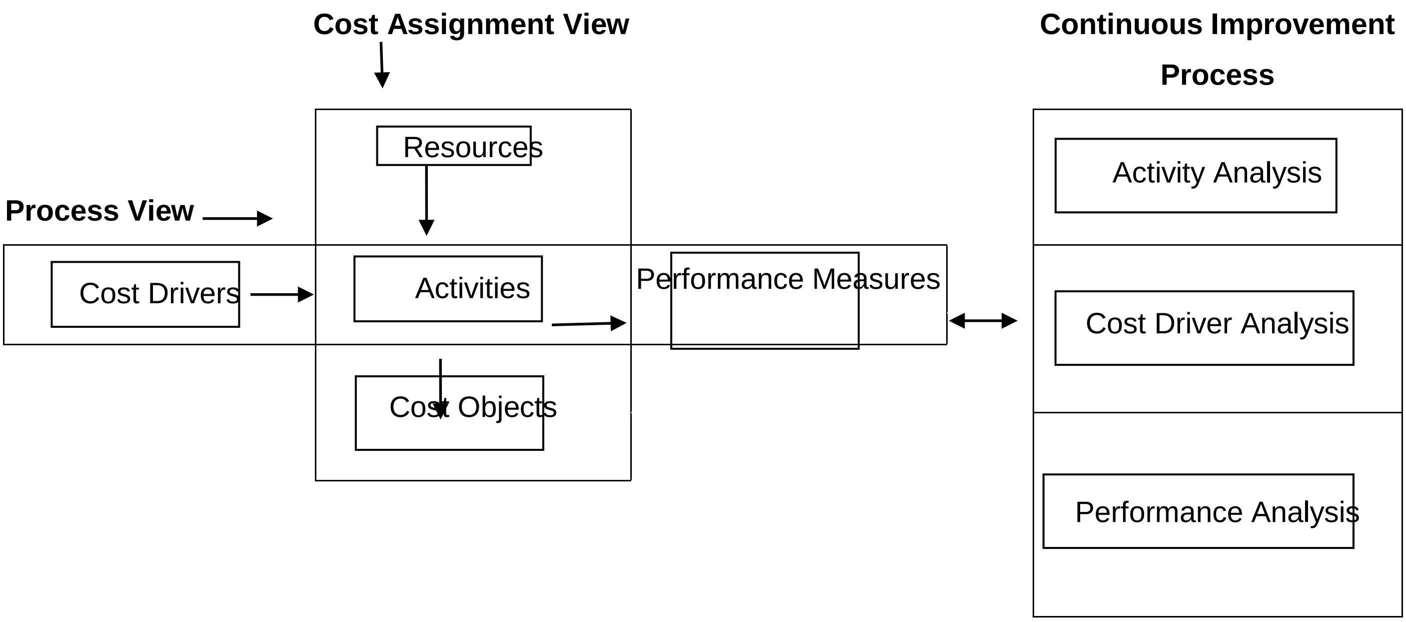
(c) **Manufacturing Organisation:** Attributable S & D Expenses and identifiable General Administration Expenses are analysed based on customers, in order to determine relative profitability. Some customers may be located a long way from the factory and transport may cost more. Other customers may be disruptive and place rush orders that interrupt production scheduling and require immediate, special transport. Some customers may need after sales service and help with technical matters. Hence, analysis of costs is made customer-wise to facilitate better sales decisions.

Benefits of customer profitability analysis

1) It helps the supplier to identify which customers are eroding overall profitability and which customers are contributing to it.
2) It can help to provide a basis for constructive dialogue between buyer and seller to improve margins.

Question 54 Elaborate Activity based cost management along with stages in ABM?

Answer:- Activity Based Management Model:



1. The use of ABC as a costing tool to manage costs at activity level is known as Activity Based Cost Management (ABM). ABM utilises cost information gathered through ABC.

2. Through various analyses, ABM manages activities rather than resources. It determines what drives the activities of the Firm and how these activities can be improved to increase the profitability.

3. ABM is a discipline that focusses on the management of activities as the route to improving the value received by the customer and the profit achieved by providing this value. This discipline includes - (a) **Cost Driver Analysis,**

(b) **Activity Analysis,** and (c) **Performance Analysis.**

4. ABM seeks to satisfy the following customer needs while making fewer demands for resources - (a) Lower Costs, (b) Higher Quality, (c) Faster Response Time, and (d) Greater Innovation.

Stages in ABM

Stage	Activities

1	Identification of the activities that have taken place in the Firm.
2	Assigning Costs to Cost Pool for each activity.
3	Spreading of Support Activities Costs across the Primary Activities.
4	Determining Cost Driver for each activity.
5	Assigning the costs of Activities to Products, according to product demand for Activities.

ABM Analysis

The various analyses under ABM are -

1. **Cost Driver Analysis:** This identifies the factors that cause activities to be performed, in order to manage activity costs. An activity may be performed inefficiently due to a particular reason. Managers have to address this Cost Driver to correct the root cause of the problem.

2. **Activity Analysis:** It involves identification of the activities of the Firm and the activity centres (or activity cost pools) that should be used in an ABC system. Activity analysis also identifies Value Added (VA) and Non Value Added (NVA) activities. The number of activity centres is likely to change over time, as organisational needs for activity information evolve.

3. **Performance Analysis:** This involves the identification of appropriate measures to report the performance of activity centres or other organisational units, consistent with each unit's goals and objectives. This aims to identify the best ways to measure the performance of factors that are important to the Firm, in order to stimulate continuous improvement.

Question 55 Distinction between value-added activities and non-value added activities?

Answer:- Value Added vs Non-Value Added Activities

The difference between Value Added and Non-Value Added Activities is as under -

Particulars	Value-Added Activities (VA)	Non-Value-Added activities (NVA)
1. **Meaning**	These are activities **necessary** for the utility or performance of the product.	These are **additional and extraneous activities,** not fully necessary for product performance / utility.
2. **Customer Perception**	These are activities that customers perceive as adding usefulness to the	If eliminated, this will not reduce the actual or perceived value that customer obtain by using the

	product or service that they purchase.	product or service.
3. **Customer Requirement**	These represent work that is valued by the external or internal customer.	These represent work that is not valued by the external or internal customer.
4. **Role**	They improve or maintain the quality or function of a product. Hence, Customers are usually willing to pay for such value addition. VA activities result in "costs" and not in losses.	NVA activities do not improve the quality or function of a product or service, but they can adversely affect costs and prices. NVA activities create waste, result in delay of some sort, add cost to the products or services for which the customer is not willing to pay.
5. **Examples**	Making product more versatile for certain other uses.	Expediting due to work delays, cost of re-work of defectives, etc.
6. **Management Focus**	Management aims to simplify VA Activities and thereby manage "costs".	Management should focus on elimination of NVA Activities and thereby avoid "losses".

Question 56 Describe Activity based budgeting?

Answer:- Activity Based Budgeting (ABB)

Point	Description
Meaning	1. **Activity Based Budget** is a quantitative expression of the expected activities of the Firm, reflecting Management's forecast of workload and financial and non-financial requirements, to meet agreed strategic goals and planned changes to improve performance. 2. **Activity Based Budgeting (ABB)** is a process of planning and controlling the expected activities of the Firm, to derive a cost-effective budget, that meets forecast workload and agreed strategic goals.
Focus	ABB focusses on activity / business processes. Resources required are determined on the basis of expected activities & workload. Expenses necessary to perform these activities are estimated, with a focus on overall efficiency.
Point	**Description**
Key Elements	**Key Elements** of ABB are - (a) **Type** of work / activity to be performed,

	(b) **Quantity** of work / activity to be performed, and (c) **Cost** of work / activity to be performed.
Advantages	The advantages of Activity Based Budgeting (ABB) over Traditional Budgeting are - 1. **Better Cost Analysis:** ABB focusses on outcomes (activities) rather than listing of expense by "head of account" categories. Hence, ABB is more amenable for cost analysis, by focusing on behaviour of costs. 2. **Better Cost Control:** ABB helps in focussing on NVA Costs and the variances thereof. Investigation of expense variances will now be more meaningful for cost control purposes. 3. **Management Focus:** ABB leads to increased management commitment to the budget process, since it enables Management to focus on the objectives of each activity, and compare the outcomes with the costs that are allocated to that activity. 4. **Resource Management:** ABB identifies resources requirements to meet the demand for activities, whereas traditional budgeting adopts and incremental approach. Hence, excess resources if any can be identified. These excessive resources can either be eliminated or re-deployed in some other manner. 5. **Realistic Approach:** ABB avoids arbitrary cuts in specific budget areas in order to meet overall financial targets. Hence, ABB leads to more realistic budgeting.

Question 57 Write short note on feedback and feed forward control?

Answer:- Feedback Control and Feed-Forward Control

1. **Concept:** Control is a management function of establishing Benchmarks and comparing actual performance against the Benchmarks and taking corrective actions. Control is required at all levels of an Entity, to ensure that the Entity achieves its intended objective. Control may be - (a) Feedback Control, or (b) Feed-Forward Control.

2. **Common Features:** Feedback and Feed-Forward are two types of control schemes for systems that react automatically to changing environmental dynamics. Each utilizes sensors to measure important factors and a set of rules to react to changes in those factors.

3. **Differences:** Feedback and Feed-Forward Controls may **co-exist** in the same system, but the two designs are different, as explained below –

Point	Feedback Control	Feed-Forward Control

CIMA Terminology	It is the measurement of differences between planned outputs and actual outputs achieved, and the modification of subsequent action and/or plans to achieve future required results. Feedback Control is an integral part of Budgetary Control and Standard Costing Systems.	It is the forecasting of differences between actual and planned outcomes and the implementation of actions before the event, to avoid such differences. **[Example:** anticipated price rise in Raw Materials, to trigger immediate purchase action.]
Comparison	Feedback System compares the actual historical results with the budgeted results.	Feed-Forward System compares the budgeted results with the forecasted results. **[Note]**
Source of Information	Feedback Information is primarily obtained from the System **Outputs or Outcomes** (i.e. after comparing Actuals with Budgets).	Feed-Forward Information is primarily obtained from the **External Environment** Changes / Developments / Disturbances.
Scope	It is primarily a **Corrective** Control. According to Norton Bedford, to be effective, such Feedback Control Reports should be - • be in standardized format, • be available in a timely manner, • disclose variations from standards, • disclose trends and relationships, • disclose both accomplishment and responsibility.	It is primarily a **Preventive** Control. According to John Camillus, Preventive Management Control should include - • Indicators, "leading" & "early warning", • Trend Analysis, • Adaptive Mechanisms, • Congruent System Design, • Policy Directives, and • Contingency Plans.
Happening of Error	Feedback is a reaction **after** an action has taken place. So, there has to be an error, in order to take corrective actions.	It involves measuring the amount of error, **before** it has actually taken place, and placing a control mechanism therefor.
Advantages	• It is simple and easy to implement. • It does not involve much investment.	• It identifies errors even before they occur. • It eliminates inefficiencies, defects, etc.
Limitations	• It is only as effective as the Error Detection System. • There may be time lags between the error detection, error confirmation, and error revision during which actual results may	• There is a high cost of implementation. • There may be multiple variables or estimates in an uncertain future. • Forecasting Tools have not evolved

	change again.	adequate for applying this control.

Question 58 What are types of feedback?

Answer:- Types of Feedback

Feedback may be classified in many ways -

1. **Positive vs Negative Feedback**

Positive Feedback	**Negative Feedback**
(a) It is taken to reinforce a deviation from standard.	(a) It is taken to reverse a deviation from standard.
(b) The Inputs or Process are not altered.	(b) It involves amending the Inputs or Process, so that the system reverts to a steady state.

2. **Primary vs Secondary Feedback**

Primary Feedback	**Secondary Feedback**
(a) It is the reporting to the immediate Line Management in the form of Control Reports, comparing actual and budgeted results.	(a) It is the Feedback sent to a higher level in an Entity, and can lead to a plan being reviewed and possibly changed.
(b) It is not escalated to higher levels in the Entity, e.g. if the variances are minimal, or can be corrected easily.	(b) It is required to, when the Variances are beyond the control of the immediate Line Management.

Question 59 Describe concept and characteristics of beyond budgeting?

Answer:- Concept of Beyond Budgeting

Point	Description

<table>
<tr><td>Meaning</td><td>Beyond Budgeting (BB) is a leadership philosophy that relates to an alternative approach to budgeting which should be used instead of Traditional Annual Budgeting.</td></tr>
<tr><td>CIMA Definition</td><td>BB is an idea that Companies need to move beyond budgeting because of the inherent flaws in budgeting especially when used to set contracts. It is argued that a range of techniques, such as rolling forecasts and market related targets, can take the place of Traditional Budgeting.</td></tr>
<tr><td>Features of BB</td><td>1. Focus of the Managers shifts to improving future results, and not merely compliance with Budgets.
2. Rolling Budgets may incorporate KPIs.
3. Benchmarking can be incorporated in Budgets.</td></tr>
<tr><td>Benefits of BB</td><td>1. BB helps Managers to work in coordination to beat the competition. Internal Rivalry between Managers is reduced as target shifts to Competitors.
2. BB eliminates some behavioural issues by making rewards team-based. Divisional Performance is secondary,and Organisational Performance is primary now.
3. BB allows Operational Managers to react to the environment. BB ensures proper delegation of authority to Operational Managers who are close to the concerned action, and can react quickly.
4. BB encourages a culture of innovation. Operational Managers do not restrict themselves to budget iimits and focus on achieving key ratios.
5. BB ensures more timely allocation of resources.
6. BB is a more adaptive process than Traditional Budgeting.
7. BB is a decentralised process, unlike Traditional Budgeting where leaders plan and control organisations centrally.
8. BB helps in motivating individuals by defining clear responsibilities and challenges.
9. BB creates Information Systems which provide fast and open information throughout the Entity.
10. BB establishes customer-orientated teams.</td></tr>
<tr><td>Suitability of BB</td><td>BB is suitable in the following situations -
<table>
<tr><th>Industries</th><th>Why BB is required?</th></tr>
<tr><td>1. Industries where there is rapid change in the business environment</td><td>Flexible Targets are to be set in response to external environment changes.</td></tr>
</table></td></tr>
</table>

	2. Industries using **Management Methods** such as TQM, TPM, etc.	Continuous Improvement is the key. Mere compliance with Budgets is not sufficient.
	3. Industries undergoing **radical change,** e.g. using BPR.	Traditional Budgets may be hard to achieve in such circumstances.

Question 60 What are steps required for implementation of beyond budgeting?

Answer:- Implementation of Beyond Budgeting

According to Hope and Fraser, effective implementation of the Beyond Budgeting approach involves the following -

1. Define the **case for change** (from Traditional Budgeting to BB), and provide an outline Vision thereof.
2. Be prepared to **convince the Board** and Top Management, for changing to BB Approach.
3. Establish a framework for BB Approach, i.e. **"Get Started".**
4. **Design and implement** New Processes.
5. **Train and Educate** People, so that the implementation process will be smooth and acceptable.
6. Rethink the **Role of Finance** - from "Number Providers" to "Facilitators of Strategy".
7. **Change Behaviour** to accept BB - Focus on New Processes, not compliance with Management Orders
8. **Evaluate the Benefits** of implementing BB Approach.
9. **Consolidate the Gains** achieved by implementing BB Approach.

Question 61 Write short note on planning and operational variances?

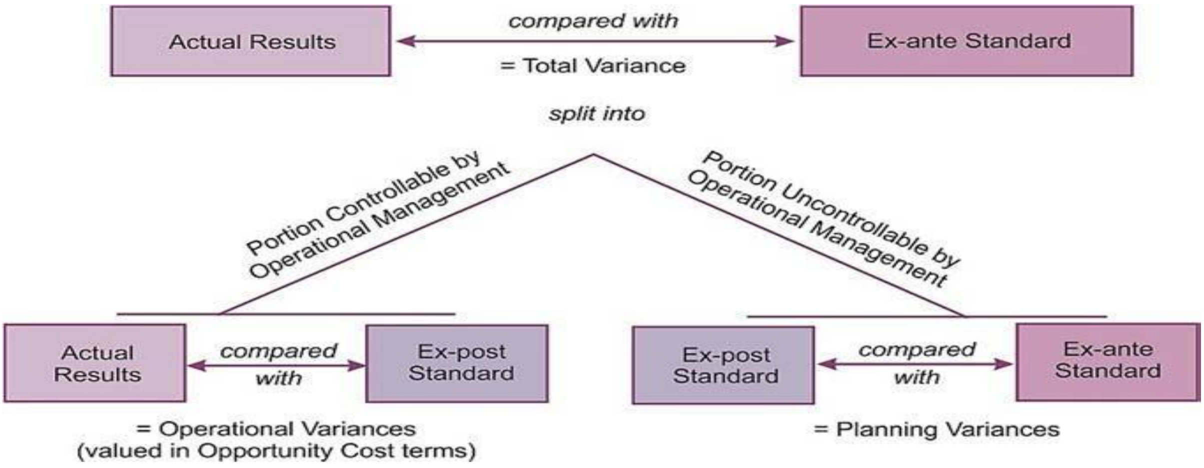
Answer:- Planning and Operational Variances

1.**Basis** When the current environmental conditions are different from the anticipated environmental conditions (which were prevailing at the time of setting Standards or Plans), the use of routine analysis of variance for measuring the performance of a Manager is neither suitable nor desirable.

2. **Points of Difference**

Meaning	**Planning Variance**	**Operational Variance**
Comparison	Comparison between Original Standard and Revised Standard.	Comparison between Revised Standard and Actual Results.

Item		
Control by Operational Management	These are **Non-Controllable** by Operational Management, since they arise due to factors beyond the control of Management / Department.	These are **Controllable** by Operational Management, since they arise due to efficiency or inefficiency of the Cost Centre / Department.



Example:- In case of material purchase price variance, suppose the standard price of raw material determined was Rs. 5 per unit, the general market price per unit at the time of purchase was Rs.5.20 and actual price paid per unit was Rs.5.18 on the purchase of say 10,000 units of raw material. In this case the variances to be computed should be:

Material purchase price variance

Planning variance

= (Standard price p.u. – General market price p.u.) x Actual Quantity Purchased

= (Rs. 5 – Rs. 5.20) x 10000 units

= Rs. 2000(A)

Uncontrollable

Operational variance

= (General Market price p.u. – Actual price paid p.u.) x Actual Quantity purchased

= (Rs. 5.20 – Rs. 5.18) x 10,000 units

= Rs. 200(F)

Question 62 Write short on variance analysis in activity based costing ?

Answer:- Variances in ABC System

1. **Setting Standards:** In ABC System, Costs are collected around Activity Pools and are assigned to products and services using appropriate Cost Drivers. Therefore, Standards can be set for carrying out each type of activity. Such Standards can be set for all levels of Costs, viz. Unit Level, Batch Level, Product Level and Facility Level.

2. **Variances:** OH Variances can be calculated using ABC Concepts as under -

Total OH Variance = Efficiency Variance + Price Variance, as computed below -

Efficiency Variance =	**Expenditure (or Price) Variance =**
(Resources Allowed - Actual Resources)×Std ABC Rate	(Std Rate - Actual Rate) × Actual Cost Driver Units used
↓	↓
This Variance recognises the Cost Impact of undertaking more or less activities than Standard.	This Variance recognises the Cost Impact of paying more or less than the Standard, for the Actual Activities undertaken.

Question 63 Write short on Learning Curve – Impact on Variances?

Answer: Impact described as below:-

1. Learning curve is a geometrical progression, which reveals that there is steadily decreasing cost for the accomplishment of a given repetitive operation, as the identical operation is increasingly repeated.
2. The amount of decrease will be less and less with each successive unit produced. As more units are produced, people involved in production become more efficient than before.
3. Each additional unit takes less time to produce. The amount of improvement or experience gained is reflected in a decrease in man-hours or cost. Where learning takes place with a regular pattern it is important to take account of reduction in a labour hours and cost per unit`.
4. Automated manufacturing is unlikely to have much variation or to display a regular learning curve. In less-automated processes, however, where learning curves do occur, it is important to take the resulting decline in labour hours and costs into account

in setting standards, determining prices, planning production, or setting up work schedules.

5. With the help of the learning curve theory the standard time of any batch or unit can be computed then compare the actual data with the standard and compute the variances.