SECTION – A: ENTERPRISE INFORMATION SYSTEMS

Question No. 1 is compulsory.

Answer any three questions from the rest.

Question 1

- (a) Describe any three key functions of RBI. (3 Marks)
- (b) How the inherent risks involved in BPA can be classified? Discuss any four. (2 Marks)

- (a) The key functions of Reserve Bank of India (RBI) are as follows:
 - i. **Monetary Authority:** This function formulates, implements and monitors the monetary policy with the objective of maintaining price stability and ensuring adequate flow of credit to productive sectors.
 - ii. **Regulator and supervisor of the financial system:** It prescribes broad parameters of banking operations within which the country's banking and financial system functions with the objective of maintaining public confidence in the system, protect depositors' interest and provide cost- effective banking services to the public.
 - iii. **Issuer of currency:** It deals with issuing and exchanging or destroying currency and coins not it for circulation with the objective to give the public adequate quantity of supplies of currency notes and coins and in good quality.
- (b) The inherent risks involved in Business Process Automation (BPA) are classified as below:
 - Input & Access: All input transaction data may not be accurate, complete and authorized.
 - File & Data Transmission: All files and data transmitted may not be processed accurately and completely, due to network error.
 - **Processing:** Valid input data may not have been processed accurately and completely due to program error or bugs.
 - **Output:** IT may not be complete and accurate due to program error or bugs and is distributed to unauthorized personnel due to weak access control.
 - **Data:** Master data and transaction data may be changed by unauthorized personnel due to weak access control.
 - **Infrastructure:** All data and programs could be lost if there is no proper backup in the event of a disaster and the business could come to a standstill.

Question 2

- (a) Business Processes are documented/designed using flow-charts to understand the process in visualized form. Being a business advisor, what advantages of flow-charts will you suggest to represent the business processes in diagrammatic form? (6 Marks)
- (b) Explain any four examples of Segregation of Duties (SoD) controls. (4 Marks)

- (a) The advantages of Flowcharts to represent the business process in diagrammatic form are as follows:
 - i. Quicker grasp of relationships: The relationship between various elements of the application program/business process must be identified. Flowchart can help depict a lengthy procedure more easily than by describing it by means of written notes.
 - ii. Effective Analysis: The flowchart becomes a blueprint of a system that can be broken down into detailed parts for study. Problems may be identified, and new approaches may be suggested by flowcharts.
 - **iii. Communication:** Flowcharts aid in communicating the facts of a business problem to those whose skills are needed for arriving at the solution.
 - **iv. Documentation:** Flowcharts serve as a good documentation which aid greatly in future program conversions. In the event of staff changes, they serve as training function by helping new employees in understanding the existing programs.
 - v. Efficient coding: Flowcharts act as a guide during the system analysis and program preparation phase. Instructions coded in a programming language may be checked against the flowchart to ensure that no steps are omitted.
 - vi. **Program Debugging:** Flowcharts serve as an important tool during program debugging by detecting, locating and removing mistakes.
 - vii. Efficient program maintenance: The maintenance of operating programs is facilitated by flowcharts that help the programmer to concentrate attention on that part of the information flow which is to be modified.
 - viii. Identifying Responsibilities: Specific business processes can be clearly identified to functional departments thereby establishing responsibility of the process owner.
 - ix. Establishing Controls: Business process conflicts and risks can be easily identified for recommending suitable controls.
- (b) The examples of Segregation of Duties (SoD) Controls are as below:
 - i. Transaction Authorization: Information systems can be programmed or configured to require two (or more) persons to approve certain transactions. This is seen in retail establishments where a manager is required to approve a large transaction or a

refund. In IT applications, transactions meeting certain criteria may require a manager's approval to be able to proceed.

- ii. Split custody of high-value assets: Assets of high importance or value can be protected using various means of split custody. For example, a password to an encryption key that protects a high-valued asset can be split in two halves, one half assigned to two persons, and the other half assigned to two persons, so that no single individual knows the entire password. Banks do this for central vaults, where a vault combination is split into two or more pieces so that two or more are required to open it.
- iii. Workflow: Applications that are workflow-enabled can use a second (or third) level of approval before certain high-value or high-sensitivity activities can take place. For example, a workflow application that is used to provision user accounts can include extra management approval steps in requests for administrative privileges.
- iv. Periodic reviews: IT or internal audit personnel can periodically review user access rights to identify whether any segregation of duties issues exist. The access privileges for each worker can be compared against a segregation of duties control matrix. When SoD issues are encountered during segregation of duties review, management will need to decide how to mitigate the matter.

Question 3

- (a) An internet connection exposes an organization to the harmful elements of the outside world. As a network administrator, which Network Access controls will you implement in the organization to protect from such harmful elements?
 (6 Marks)
- (b) Every business decision is accompanied with a set of threats and so is BYOD program. Explain briefly the areas in which the risks associated with BYOD program can be classified. (4 Marks)

- (a) The protection of an organization from harmful elements can be achieved through the following Network Access Controls:
 - i. Policy on use of network services: An enterprise wide policy applicable to internet service requirements aligned with the business need for using the Internet services is the first step. Selection of appropriate services and approval to access them should be part of this policy.
 - **ii.** Enforced path: Based on risk assessment, it is necessary to specify the exact path or route connecting the networks; e.g. internet access by employees will be routed through a firewall and proxy.
 - **iii.** Segregation of networks: Based on the sensitive information handling function; say a Virtual Private Network (VPN) connection between a branch office and the head-office, this network is to be isolated from the internet usage service.

- iv. Network connection and routing control: The traffic between networks should be restricted, based on identification of source and authentication access policies implemented across the enterprise network facility.
- v. Security of network services: The techniques of authentication and authorization policy should be implemented across the organization's network.
- vi. Firewall: A Firewall is a system that enforces access control between two networks. To accomplish this, all traffic between the external network and the organization's Intranet must pass through the firewall that will allow only authorized traffic between the organization and the outside to pass through it. The firewall must be immune to penetrate from both outside and inside the organization.
- vii. Encryption: Encryption is the conversion of data into a secret code for storage in databases and transmission over networks. The sender uses an encryption algorithm with a key to convert the original message called the Clear text into Cipher text. This is decrypted at the receiving end.
- viii. Call Back Devices: It is based on the principle that the key to network security is to keep the intruder off the Intranet rather than imposing security measure after the criminal has connected to the intranet. The call- back device requires the user to enter a password and then the system breaks the connection. If the caller is authorized, the call back device dials the caller's number to establish a new connection. This limit access only from authorized terminals or telephone numbers and prevents an intruder masquerading as a legitimate user. This also helps to avoid the call forwarding and man-in-the middle attack.
- (b) The risks associated with Bring Your Own Device (BYOD) program are classified as below:
 - i. Network Risks: It is normally exemplified and hidden in 'Lack of Device Visibility'. When company-owned devices are used by all employees within an organization, the organization's IT practice has complete visibility of the devices connected to the network. This helps to analyze traffic and data exchanged over the Internet. As BYOD permits employees to carry their own devices (smart phones, laptops for business use), the IT practice team is unaware about the number of devices being connected to the network. As network visibility is of high importance, this lack of visibility can be hazardous.
 - ii. Device Risks: It is normally exemplified and hidden in 'Loss of Devices'. A lost or stolen device can result in an enormous financial and reputational embarrassment to an organization as the device may hold sensitive corporate information. Data lost from stolen or lost devices ranks as the top security threats as per the rankings released by Cloud Security Alliance. With easy access to company emails as well as corporate intranet, company trade secrets can be easily retrieved from a misplaced device.

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- iii. Application Risks: It is normally exemplified and hidden in 'Application Viruses and Malware'. A related report revealed that most employees' phones and smart devices that were connected to the corporate network weren't protected by security software. With an increase in mobile usage, mobile vulnerabilities have increased concurrently. Organizations are not clear in deciding that 'who is responsible for device security – the organization or the user'.
- iv. Implementation Risks: It is normally exemplified and hidden in 'Weak BYOD Policy'. The effective implementation of the BYOD program should not only cover the technical issues mentioned above but also mandate the development of a robust implementation policy. Because corporate knowledge and data are key assets of an organization, the absence of a strong BYOD policy would fail to communicate employee expectations, thereby increasing the chances of device misuse.

Question 4

- (a) Central database is the main feature of an ERP system. As the complete data is stored at one place, ensuring safety of data and minimizing risk of loss of data is a big challenge. As an IT expert, discuss the risks associated with various aspects of ERP.
 (6 Marks)
- (b) Explain the concept of E-Commerce briefly. How can you protect your E-Commerce business from intrusion? (4 Marks)

- (a) The Risks associated with various aspect of Enterprise Resource Planning (ERP) are given below:
 - i. **Data Access:** Data is stored centrally, and all the departments access the central data. This creates a possibility of access to non-relevant data.
 - ii. Data Safety: As there is only one set of data, if this data is lost, whole business may come to stand still. For the physical safety of data, risk of total or partial loss of data are considered. Whereas for the electronic safety of data; risk of changes in data, risk of partial/complete deletion of data, risk of leakage of information and risk of incorrect input of data are considered.
 - **iii. Speed of Operation:** As data is maintained centrally, gradually the data size becomes more and more and it may reduce the speed of operation.
 - iv. Change in process: As the overall system is integrated, a small change in process for one department may require lot of efforts and money.
 - v. Staff Turnover: As the overall system is integrated and connected with each other department, it becomes complicated and difficult to understand. In case of staff turnover, it becomes increasingly difficult to maintain the system.

- vi. System Failure: As everybody is connected to a single system and central database, in case of failure of system, the whole business may come to stand still and may get affected badly.
- (b) Definition of E-commerce are as follows:

E-Commerce can be defined as "Sale/Purchase of goods/services through electronic mode." This could include the use of technology in the form of Computers, Desktops, Mobile Applications, etc. In other words, E-Commerce is the process of doing business electronically. It refers to the use of technology to enhance the processing of commercial transactions between a company, its customers and its business partners. It involves the automation of a variety of Business-To-Business (B2B) and Business-To-Consumer (B2C) transactions through reliable and secure connections.

E-Commerce business can be protected from intrusion using following methods:

- i. **Viruses:** Check your website daily for viruses, the presence of which can result in the loss of valuable data.
- ii. **Hackers:** Use software packages to carry out regular assessments of how vulnerable your website is to hackers.
- iii. **Passwords:** Ensure employees change these regularly and that passwords set by former employees of your organization are defunct.
- iv. Regular software updates: The site should always be up to date with the newest versions of security software. If it is not done, the website will become vulnerable to attack.
- v. **Sensitive data:** This involves considering the encryption of financial information and other confidential data (using encryption software). Hackers or third parties will not be able to access encrypted data without a key. This is particularly relevant for any e-Commerce sites that use a shopping cart system.
- vi. Know the details of your payment service provider contract.

Question 5

(a) Banks face the challenge of addressing the threat of money laundering on multiple fronts as banks can be used as primary means for transfer of money across geographies. In light of the above statement, discuss the Money Laundering process and its different stages.

(6 Marks)

- (b) (i) What do you understand by Regulatory Compliance? (2 Marks)
 - (ii) Write a brief description of three tier architecture of Application Software. (2 Marks)

OR

Explain briefly the concept of Role-Based-Access-Control (RBAC) in ERP System.

Answer

(a) Section 3 of Prevention of Money Laundering Act (PMLA), 2002 defines 'Money Laundering' as: 'whosoever directly or indirectly attempts to indulge or knowingly assists or knowingly is a party or is actually involved in any process or activity connected with the proceeds of crime and projecting it as untainted property shall be guilty of the offence of money-laundering".

In other words, **Money laundering** may be defined as the process by which the proceeds of the crime and the true ownership of those proceeds are concealed or made opaque so that the proceeds appear to come from a legitimate source. The objective in money laundering is to conceal the existence, illegal source, or illegal application of income to make it appear legitimate. Money laundering is commonly used by criminals to make 'dirty' money appear 'clean' or the profits of criminal activities are made to appear legitimate.

Stages of Money Laundering are as follows:

- i. **Placement:** The first stage involves the Placement of proceeds derived from illegal activities the movement of proceeds frequently currency, from the scene of the crime to a place, or into a form less suspicious and more convenient for the criminal.
- ii. Layering: Layering involves the separation of proceeds from illegal source using complex transactions designed to obscure the audit trail and hide the proceeds. Layering involves sending the money through various financial transactions to change its form and make it difficult to follow. Layering may consist of several banks to bank transfers or wire transfers between different accounts in different names in different countries making deposit and withdrawals to continually vary the amount of money in the accounts changing the money's currency purchasing high value items (boats, houses cars, diamonds) to change the form of money, thus making it hard to trace.
- iii. Integration: Integration involves conversion of illegal proceeds into apparently legitimate business earnings through normal financial or commercial operations. Integration creates the illusion of a legitimate source for criminally derived funds and involves techniques as numerous and creative as those used by legitimate businesses.
- (b) (i) Regulatory Compliance describes the goal that organizations aspire to achieve in their efforts to ensure that they are aware of and take steps to comply with relevant laws, policies, and regulations. This approach is used to ensure that all necessary governance requirements can be met without the unnecessary duplication of effort and activity from resources.

In other words, Regulatory Compliance is an organization's adherence to laws, regulations, guidelines and specifications relevant to its business. Violations of

regulatory compliance regulations often result in legal punishment, including interest, penalty and prosecution in some cases.

The compliance and regulatory requirements can be classified in two types as under.

- **General –** Applicable to all irrespective of anything.
- **Specific –** Applicable to specific type of businesses only.
- (ii) The layers of Three Tier Architecture of Application Software are as below:
 - The Application Layer receives the inputs from the users and performs certain validations like, if the user is authorized to request the transaction.
 - The Operating System Layer then carries these instructions and processes them using the data stored in the database and returns the results to the application layer.
 - The Database Layer stores the data in a certain form. For a transaction to be completed, all the three layers need to be invoked. Most application software is built on this model these days.

OR

- (ii) Role-Based Access Control (RBAC) is an approach to restricting system access to authorized users. It is used by most enterprises and can implement mandatory access control or discretionary access control.
 - RBAC is a policy neutral access control mechanism defined around roles and privileges that lets employees having access rights only to the information they need to do their jobs and prevent them from accessing information that doesn't pertain to them.
 - RBAC can be used to facilitate administration of security in large organizations with hundreds of users and thousands of permissions.
 - The components of RBAC such as role-permissions, user-role and role-role relationships make it simple to perform user assignments.
 - Roles for staff are defined in organization and permission to access a specific system or perform certain operation is defined as per the role assigned.

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SECTION –B: STRATEGIC MANAGEMENT

Question No. 6 is compulsory

Answer any three questions from the rest.

Question 6

An XYZ Company is facing continuous losses. There is decline in sales and product market share. The products of the company became uncompetitive and there is persistent negative cash flow. The physical facilities are deteriorating and employees have low morale. At the board meeting, the board members decided that they should continue the organization and adopt such measures that the company functions properly. The board has decided to hire young executive Shayamli for improving the functions of the organization. What corporate strategy should Shayamli adopt for this company and what steps to be taken to implement the corporate strategy adopted by Shayamli? (5 Marks)

Answer

XYZ Company is facing continuous losses, decline in sales and product market share, persistent negative cash flow, uncompetitive products, declining market share, deterioration in physical facilities, low morale of employees. In such a scenario, Shayamli may choose *turnaround strategy* as this strategy attempts to reverse the process of decline and bring improvement in organizational health. This is also important as Board has decided to continue the company and adopt measures for its proper functioning.

For success, Shayamli needs to focus on the short and long-term financing needs as well as on strategic issues. During the turnaround, the "product mix" may be changed, requiring the organization to do some repositioning. A workable action plan for turnaround would involve:

Stage One – Assessment of current problems: In the first step, assess the current problems and get to the root causes and the extent of damage.

Stage Two – Analyze the situation and develop a strategic plan: Identify major problems and opportunities, develop a strategic plan with specific goals and detailed functional actions.

Stage Three – Implementing an emergency action plan: If the organization is in a critical stage, an appropriate action plan must be developed to stop the bleeding and enable the organization to survive.

Stage Four – Restructuring the business: If the core business is irreparably damaged, then the outlook for the entire organization may be bleak. Efforts to be made to position the organization for rapid improvement.

Stage Five – Returning to normal: In the final stage of turnaround strategy process, the organization should begin to show signs of profitability, return on investments and enhancing economic value-added.

Question 7

- (a) "Strategic Management concepts are useful for educational institutions." Explain with reasons. (5 Marks)
- (b) "Industry and competitive analysis begins with an overview of the industry's dominant economic features." Explain and also narrate the factors to be considered in profiling in industry's economic features.
 (5 Marks)

- (a) Education is considered to be a noble profession. An educational institution often functions as a not-for-profit organization managed by trusts and societies. They include schools, colleges and universities. Being inherently non-commercial in nature, educational organisations do not have cut-throat competition as in case of their commercial counterparts. However, as the number of institutions belonging to both public and private sector are increasing, the competition is gradually rising. Key reasons for use of strategic management techniques in educational institutes are as follows:
 - Getting better name and recognition.
 - Adopt different strategies for attracting best students.
 - Appointing and retaining quality faculty for teaching.
 - Deliver education to make graduates more employable.
 - Nurturing responsible citizens.
- (b) Industry is "a group of firms whose products have same and similar attributes such that they compete for the same buyers." Industries differ significantly in their basic character and structure. Industry and competitive analysis begins with an overview of the industry's dominant economic features. The factors to be considered while profiling an industry's economic features are fairly standard and are given as under:
 - Size and nature of market.
 - Scope of competitive rivalry.
 - Market growth rate and position in the business life.
 - Number of rivals and their relative market share.
 - The number of buyers and their relative sizes.
 - The types of distribution channels used to access consumers.
 - The pace of technological change in both production process innovation and new product introductions.
 - Whether the products and services of rival firms are highly differentiated, weakly differentiated, or essentially identical?

- Whether organisation can realize economies of scale in purchasing, manufacturing, transportation, marketing, or advertising.
- Whether key industry participants are clustered in a location.
- Whether certain industry activities are characterized by strong learning and experience effects ("learning by doing") such that unit costs decline as cumulative output grows.
- Whether high rates of capacity utilization are crucial to achieve low-cost production efficiency.
- Capital requirements and the ease of entry and exit.
- Whether industry profitability is above or below par?

Question 8

- (a) Why an organisation should have a mission? What considerations are to be kept in mind while writing a good mission statement of a company? (5 Marks)
- (b) Explain the Strategic Alliance. Describe the advantages of Strategic Alliance. (5 Marks)

Answer

- (a) Organization should have a mission on account of the following reasons:
 - To ensure unanimity of purpose within the organization.
 - To develop a basis, or standard, for allocating organizational resources.
 - To provide a basis for motivating the use of the organization's resources.
 - To establish a general tone or organizational climate.
 - To serve as a focal point for those who can identify with the organization's purpose and direction.
 - To facilitate the translation of objective and goals into a work structure involving the assignment of tasks to responsible elements within the organization.
 - To specify organizational purposes and the translation of these purposes into goals in such a way that cost, time, and performance parameters can be assessed and controlled.

The following points must be considered while writing a good mission statement of a company:

- (i) To establish the special identity of the business one that typically distinct it from other similarly positioned companies.
- (ii) Good mission statements should be unique to the organisation for which they are developed.

- (iii) Needs which business tries to satisfy, customer groups it wishes to target and the technologies and competencies it uses and the activities it performs.
- (b) A strategic alliance is a relationship between two or more businesses that enables each to achieve certain strategic objectives which neither would be able to achieve on its own. The strategic partners maintain their status as independent and separate entities, share the benefits and control over the partnership, and continue to make contributions to the alliance until it is terminated.

Advantages of Strategic Alliance

Strategic alliance usually is only formed if they provide an advantage to all the parties in the alliance. These advantages can be broadly categorised as follows:

- Organizational: Strategic alliance helps to learn necessary skills and obtain certain capabilities from strategic partners. Strategic partners may also help to enhance productive capacity, provide a distribution system, or extend supply chain. Strategic partners may provide a good or service that complements thereby creating a synergy. Having a strategic partner who is well-known and respected also helps add legitimacy and creditability to a new venture.
- 2. **Economic:** There can be reduction in costs and risks by distributing them across the members of the alliance. Greater economies of scale can be obtained in an alliance, as production volume can increase, causing the cost per unit to decline. Finally, partners can take advantage of co-specialization, creating additional value.
- 3. Strategic: Rivals can join together to cooperate instead of compete. Vertical integration can be created where partners are part of supply chain. Strategic alliances may also be useful to create a competitive advantage by the pooling of resources and skills. This may also help with future business opportunities and the development of new products and technologies. Strategic alliances may also be used to get access to new technologies or to pursue joint research and development.
- 4. Political: Sometimes strategic alliances are formed with a local foreign business to gain entry into a foreign market either because of local prejudices or legal barriers to entry. Forming strategic alliances with politically-influential partners may also help improve your own influence and position.

Question 9

- (a) Discuss in what conditions rivalry among competitors tends to be cut-throat and profitability of the industry goes down. (5 Marks)
- (b) Discuss the various approaches for evaluating the worth of a business. (5 Marks)

Answer

(a) The intensity of rivalry in an industry is a significant determinant of industry attractiveness and profitability. The intensity of rivalry can influence the costs of suppliers, distribution, and of attracting customers and thus directly affect the profitability. The more intensive the

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rivalry, the less attractive is the industry. Rivalry among competitors tends to be cutthroat and industry profitability low when

- (i) An industry has no clear leader.
- (ii) Competitors in the industry are numerous.
- (iii) Competitors operate with high fixed costs.
- (iv) Competitors face high exit barriers.
- (v) Competitors have little opportunity to differentiate their offerings.
- (vi) The industry faces slow or diminished growth.
- (b) Various approaches for determining a business's worth can be grouped into three main approaches:
 - (i) **Net worth or stockholders' equity:** Net worth is the total assets minus total outside liabilities of an organisation.
 - (ii) Future benefits to owners through net profits: These benefits are considered to be much greater than the amount of profits. A conservative rule of thumb is to establish a business's worth as five times the firm's current annual profit. A five-year average profit level could also be used.
 - (iii) Market-determined business worth: This approach involves three methods. First, the firm's worth may be based on the selling price of a similar company. The second approach is called the price-earnings ratio method whereby the market price of the firm's equity shares is divided by the annual earnings per share and multiplied by the firm's average net income for the preceding years. The third approach can be called the outstanding shares method whereby one has to simply multiply the number of shares outstanding by the market price per share and add a premium.

Question 10

- (a) Distinguish between transformational leadership style and transactional leadership style.
- (b) Explain concept and nature of BPR.

(5 Marks)

OR

Write a short note on the concept of cost leadership strategy and how to achieve it?

(5 Marks)

- (a) Difference between transformational and transactional leadership are as follows:
 - 1. Transformational leadership style uses charisma and enthusiasm to inspire people to exert them for the good of organization. Transactional leadership style uses the authority of its office to exchange rewards such as pay, status symbols etc.

- 2. Transformational leadership style may be appropriate in turbulent environment, in industries at the very start or end of their cycles, poorly performing organisations, when there is a need to inspire a company to embrace major changes. Transactional leadership style can be appropriate in static environment, in growing or mature industries and in organisations that are performing well.
- 3. Transformational leaders inspire employees by offering excitement, vision, intellectual stimulation and personal satisfaction. Transactional leaders prefer a more formalized approach to motivation, setting clear goals with explicit rewards or penalties for achievement and non-achievement. Transactional leaders focus mainly to build on existing culture and enhance current practices.
- (b) BPR stands for business process reengineering which means starting all over again from scratch. It refers to the analysis and redesign of workflows and processes both within and between the organisations. Its objective is to improve performance in terms of time, cost, quality, and responsiveness to customers. It implies giving up old practices and adopting the improved ones. It is an effective tool of realising new strategies.

Improving business processes is paramount for businesses to stay competitive in today's marketplace. New technologies are rapidly bringing new capabilities to businesses, thereby raising the strategical options and the need to improve business processes dramatically. Even the competition has become harder. In today's market place, major changes are required to just stay even.

OR

Cost leadership strategy requires vigorous pursuit of cost reduction in the areas of procurement, production, storage and distribution of product or service and also economies in overhead costs. Accordingly, the cost leader is able to charge a lower price for its products than its competitors and still make satisfactory profits. The low cost leadership should be such that no competitors are able to imitate so that it can result in sustainable competitive advantage to the cost leader firm.

To achieve cost leadership, following are the actions that could be taken:

- 1. Forecast the demand of a product or service promptly.
- 2. Optimum utilization of the resources to get cost advantages.
- 3. Achieving economies of scale leads to lower per unit cost of product/service.
- 4. Standardisation of products for mass production to yield lower cost per unit.
- 5. Invest in cost saving technologies and try using advance technology for smart working.
- 6. Resistance to differentiation till it becomes essential.