

INFORMATION TECHNOLOGY

Ans-1:

- (i) **SWITCH:** It is hardware device used to direct messages across a network. Switches create temporary point links between two nodes on a network and send all data along that link.
- (ii) **MODEM:** It stands for Modulator/Demodulator and is an encoding as well as decoding device used in data transmission that converts a digital computer signal into an analog telephone signal(i.e. it modulates the signal) and converts an analog telephone signal into a digital computer signal(i.e. it demodulates the signal) in a data communication system.
- (iii) **HTML:** Web Pages are created with the help of HTML (Hyper Text Markup Languages). HTML allows to the creator of web page to specify how the text will be displayed and how this web page would be linked with other web pages. These links are normally known as Hyper Text Link.
- (iv) **Site Blocking:** This software help in blocking site that are deemed inappropriate by management.
- (v) **Buffering:** Buffering enables the processor to execute another instruction while input or output is taking place rather than being idle while transfer was completed.
- (vi) **Data Transformation:** The data transformation layer receives data from the data sources, cleans and standardizes it, and loads it into data repository.
- (vii) **Source Program:** A program is entered into the computer system and submitted to the appropriate compiler. This program is called Source Program.
- (viii) **Open Source Software:** Open source software is created by generous programmers and released into the public domain for public use. The company or individual that develops the software retains ownership of the program but the software can be used freely.
- (ix) **Mirror Log:** A mirror log is an optional file that has a file extension .mlg. It is a copy of a transaction log which provides additional protection against the loss of data in the event of the transaction log becoming unusable.
- (x) **Chat Server:** Some organizations choose to run a server that will allow multiple users to have real-time discussions, called chats on the internet. Most chat servers allow the creation of private chat rooms where participants can meet for private discussions.

Ans-2:

- (a) A set of instructions, which is known as program, are combined together to perform specific task is known as software. There are basically three types of software: Systems Software, Applications Software and General-purpose Software.
 - (i) **Systems software:** System software is computer software designed to operate the computer hardware and to provide and maintain a platform for running application software. Therefore system software may be defined as a set of one or more programs designed to control the operation of computer system. It is an essential part of the computer system. It comprises of those programs that control and support the computer system and its data processing applications. It includes the following:
 - Programming languages
 - Operating systems
 - Device Drivers
 - Utility Programs
 - Language translators
 - (ii) **Application Software:** Application software is a subclass of computer software that employs the capabilities of a computer directly to a task that the user wishes to perform. The program usually solves a particular application or problem that is unique to that organization. Examples of such programs are Payroll, General accounting, Sales statistics and Inventory control, etc.
 - (iii) **General-purpose software:** This software provides the framework for a great number of business, scientific, and personal applications. Spreadsheet, Databases, Computer-Aided Design (CAD) and Word Processing software, etc. fall into this category. Most general-purpose software is sold as a package. The software is accompanied by user-oriented documentation such as reference manuals, keyboards templates, and so on.
- (b) Component of an Expert System
 - (i) **User Interface:** User Interface allow a user to provide, design or communicate the problem to expert system for solution

- (ii) **Inference engine:** Inference engine is most important component of expert system; it is like a search engine on internet. It contains various rules and logics to arrive at solution for problem provided by users by matching the problem solution from knowledge base.
- (iii) **Explanation Facility:** It is like a reporting system, it provide an explanation of logics to users for solution arrived by expert system.
- (iv) **Knowledge Base:** Knowledge base contains the past knowledge of experts for problem solutions in an organized manner.
- (v) **Knowledge Acquisition Facility:** This component is used for building knowledge base of an expert system. This component is used by knowledge engineers for knowledge and expertise of human expert to enter the knowledge and expertise in knowledge base.

Ans-3:

(a) **Salient features of Hierarchical Database:**

In a hierarchical database, records are logically organized into hierarchy of relationship. It is arranged in an inverted tree pattern. The following are salient features:

- (i) Database structure is less flexible as relationships between records are relatively fixed by the structure.
- (ii) It requires that hierarchy of records must be determined and implemented before a search.
- (iii) Ad hoc queries are difficult and time consuming to accomplish.
- (iv) Frequent management queries may not be supported as effectively.
- (v) Day to day operational data can be processed rapidly.
- (vi) Any group of records with natural relation may fit nicely.
- (vii) Records are logically structured in inverted tree pattern.
- (viii) It provides the parent – child relationship amongst the nodes.
- (ix) It implements one-to-one and one-to-many relationship.

(b) **Data warehouse:** It is a computer database that collects, integrates and stores an organization's data with the aim of producing accurate and timely management information and supporting data's analysis. It was developed to meet a growing demand for management information and analysis that could not be met by operational systems.

Operational systems were unable to meet this need for a range of reasons:

- ♦ The processing load of reporting reduced the response time of the operational systems.
- ♦ The database designs of operational systems were not optimized for information analysis and reporting.
- ♦ Most organizations had more than one operational system, so company-wide reporting could not be supported from a single system.
- ♦ Development of reports in operational systems often requires writing specific computer programs, which is slow and expensive.

As a result, separate computer databases began to be built that were specifically designed to support management information and analysis purposes. These data warehouses were able to bring in data from a range of different data sources:

The advantages of using a data warehouse are:

- ♦ Enhanced end-user access to a wide variety of data.
- ♦ Increased data consistency
- ♦ Increased productivity and decreases computing costs.
- ♦ It is able to combine data from different sources, in one place.
- ♦ It provides an infrastructure that could support changes to data and replication of the changed data back into the operational systems.

Ans-4:

- (a) **Ring Network:** This is one of the structures for local area networks. In this topology, the network cable passes from one node to another until all nodes are connected in the form of a loop or ring. There is a direct point-to-point link between two neighboring nodes. These links are unidirectional which ensures that transmission by a node traverses the whole ring and comes back to the node, which made the transmission. Ring Network topology is particularly appropriate for organizations that require a centralized database or a centralized processing facility.

Advantages:

- (i) Ring networks offer high performance for a small number of workstations.
- (ii) These can span longer distances compared to other types of networks.
- (iii) Ring networks are easily extendable.

Disadvantages:

- (i) It is relatively expensive and difficult to install.
- (ii) Failure of one computer on the network can affect the whole network.
- (iii) It is difficult to trouble shoot a ring network. Adding or removing computers can disrupt the network.

(b) Difference between serial transmission and parallel transmission

- In serial transmission, data is communicated bit by bit on a single path or communication channel between devices
- Serial transmission provides slow speed data communication in comparison to parallel transmission in which multiple bits are transmitted together on multiple channels.
- But serial transmission provides reliable data communication in comparison to parallel transmission in which cross talk (noise) in the adjacent bits occurs.
- Serial transmission is used for long distance data communication because it is easy to maintain a single channel in comparison to multiple channels and also, it provide error free or noise free data communication as no cross talk happen in serial communication.
- RS-232C is popular serial transmission port specification used for connecting Mouse, Modem, etc for serial communication.

Ans-5:

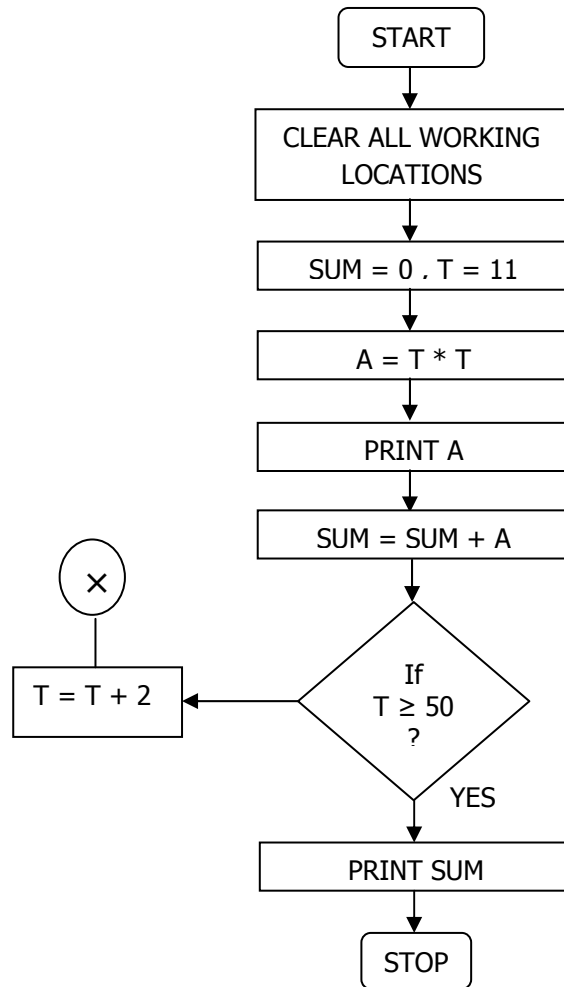
(a) A CRM solution is characterized by the following functionality:-

- (i) Scalability - The ability to be used on a large scale, and to be reliably expanded to whatever scale is necessary.
- (ii) Multiple communication channels - The ability to interface with users via many different devices (phone, wap, etc)
- (iii) Workflow - The ability to trigger a process in the back office system, e.g. E-mail Responses, etc.
- (iv) Assignment – The ability to assign requests (service requests) to a person or group.
- (v) Database – The centralized storage (in a data ware house) of all information relevant to customer interaction.
- (vi) Customer privacy considerations – The data encryption and the destruction of records are needed to ensure that they are not stolen or abused.

(b) Tactical Activities:

- (i) Production decisions regarding contracting and scheduling etc.
- (ii) Inventory decisions regarding quantity etc.
- (iii) Transportation planning for goods
- (iv) Payments terms structuring
- (v) Sourcing decisions of materials

Ans-6:



Ans-7:

- (i) **Secured Electronic Transaction (SET):** Secured Electronic Transaction protocol (SET) developed by a consortium led by Master Card and Visa is actually a combination of a protocol designed for use by other applications and a standard for handling credit card transactions over the internet. SET uses digital certificates to ensure the identities of all parties involved in a purchase while designing for cardholders, merchants, banks, and other card processors. SET also encrypts credit card and purchase information before transmission on the internet.
- (ii) **Wireless LAN:** A wireless LAN is a flexible data communication system implemented as an extension to a wired LAN. Using Radio Frequency (RF) technology, wireless LANs transmit and receive data over the air, minimizing the need for wired connections.
- (iii) **System Flow Chart:** It is designed to present an overview of the data flow through all parts of a data processing system. It represents the flow of documents, the operations or activities performed and the persons or work-stations.
- (iv) **Structured Query Language (SQL):** A query language is a set of commands to create, update and access data from a database allowing users to raise adhoc queries/questions interactively without the help of programmers. It is a computer programming language used to manipulate information in relational database management systems (RDBMS).
- (v) **Fifth Generation Language:**

Ans-8.a:Threats from Substitute

- ◆ Substitute products are a **hidden source of competition** in an industry.
- ◆ In many cases they become a **major part of competition**.
- ◆ It provides price advantage & performance improvement which can alter the competitive character of an industry.
- ◆ Wherever **large** investment in R & D is taking place, threats from substitute products can be expected.
- ◆ Substitute usually limit the prices and profits in an industry.

Ans-8.b:STRATEGY IS PARTLY PROACTIVE AND PARTLY REACTIVE

- ◆ Proactive actions are responsible to improve the company's market position & financial performance.
- ◆ It is a part of **Management's Analysis**.
- ◆ Proactive part of management's is game plan for the product analysis.
- ◆ The biggest portion of a **company's current strategy flows** from **previously initiated actions** and business approaches in order to strengthen the company's performance.
- ◆ It is strategy about the company's situation & seeking the buyer's **benefaction**.
- ◆ Practically, it is not possible to plan everything.
- ◆ User cannot **look forward** what reaction will take place at what time.
- ◆ **Organizations perform strategic exercises on the**
 - Rival firms,
 - Customer,
 - Requirement of new technologies &
 - Market situation etc.

Ans-8.c: Divestment strategy involves the sale or liquidation of a portion of business, or a major division, profit centre or SBU. Divestment is usually a part of rehabilitation or restructuring plan and is adopted when a turnaround has been attempted but has proved to be unsuccessful. The option of a turnaround may even be ignored if it obvious that divestment is the only answer.

A divestment strategy may be adopted due to various reasons:

- ◆ A business that had been acquired proves to be a mismatch and cannot be integrated within the company.
- ◆ Persistent negative cash flows from a particular business create financial problems for the whole company, creating the need for divestment of that business.
- ◆ Severity of competition and the inability of a firm to cope with it may cause it to divest.
- ◆ Technological up gradation is required if the business is to survive but where it is not possible for the firm to invest in it, a preferable option would be to divest.
- ◆ A better alternative may be available for investment, causing a firm to divest a part of its unprofitable businesses.

Ans-8.d: The prominent areas where the human resource manager can play strategic role are as follows:

1. **Providing purposeful direction:** The human resource management must be able to lead people and the organization towards the desired direction involving people right from the beginning. The most important tasks of a professional management is to ensure that the object of an organization has been internalized by each individual working in the organization. Goals of an organization states the very purpose and justification of its existence. The management have to ensure that the objects of an organization
2. **Creating competitive atmosphere:** Present's globalized market maintaining a competitive gain is the object of any organization. There are two important ways of business can achieve a competitive advantages over the others. The first is cost leadership which means the firm aims to become a low cost leader in the industry. The second competitive strategy is differentiation under which the firm seeks to be unique in the industry in terms of dimensions that are highly valued by the customers. Putting these strategies into effect carries a heavy premium on having a highly committed and competent workforce.
3. **Facilitation of change:** The Human resource will be more concerned with substance rather than form, accomplishments rather than activities, and practice rather than theory. The personnel function will be responsible for furthering the organization not just maintaining it. Human resource management will have to devote more time to promote changes than to maintain the status quo.

Ans-8.e: The network structure becomes most useful when the environment of a firm is unstable and is expected to remain so. Under such conditions, there is usually a strong need for innovation and quick response. Instead of having salaried employees, it may contact with people for a specific project or length of time. Long-term contracts with suppliers and distributors replace services that the company could provide for itself through vertical integration.

The network organization structure provides an organization with increased flexibility and adaptability to cope with rapid technological change and shifting patterns of international trade and competition.

Ans-9.a.i: Correct, A tool by which management identifies and evaluates the various business that make up the company. In portfolio analysis top management views its product lines and business units as a series of investments from which it expects returns. A business portfolio is a collection of businesses and products that make up the company. The best business portfolio is a collection of business and products that make up the company.

Ans-9.a.ii: Correct, not of all problems but it removes the problem to a great extent.

- ◆ It is the **process of identifying different aspects of the Firm's performance.**
- ◆ **Benchmarking involves –**
 - Comparing different aspects of the Firm's
 - Products,
 - Services,
 - Processes with its competitors in their field.
- ◆ **Identifying gaps & deficiencies in the Firm's own performance,**
- ◆ **Finding out methods to reduce the gaps & also improve the situations,**
- ◆ **Ensuring that these improved methods are implemented.**
- ◆ **Benchmarking can create competitive advantage in the areas of –**
 - Product Development.
 - Plant Utilization Levels.
 - Product Distribution.
 - Customer Services.
 - Maintenance Operations.
 - Human Resource Management.

Ans-9.b: The three elements of a strategic vision:

1. Coming up with a mission statement that defines what business the company is presently in and conveys the essence of "Who we are and where we are now?"
2. Using the mission statement as basis for deciding on a long-term course making choices about "Where we are going?"
3. Communicating the strategic vision in clear, exciting terms that arouse organization wide commitment.

Ans-10.i: Demographic Environment

- ◆ It refers to characteristics of population in an
 - ◆ Area, District, Country, World.
- ◆ It includes factors such as
 - ◆ Race, Age, Income, Educational skills, Asset ownership (possession), Home ownership, Employment status etc.

Ans-10.ii: An Strategic Business Unit is one who –

- ◆ Has single business or collection of related businesses that can be planned for separately.
- ◆ Has its own set of competitors.
- ◆ Has a manager who is responsible for strategic planning and profit.

Ans-10.iii: The ADL Matrix has derived its name from Arthur D. Little is a portfolio analysis method that is based on product life cycle.

Ans-10.iv: It has two components-

- ◆ For a Broad cross-section of buyers & Narrower buyer segment
 - Overall low cost leadership
 - Broad differentiation strategy in products.

Ans-10.v: When the demand for the product is irregular due to season, some parts of the day, or on hour basis, causing idle capacity or over-worked capacities, synchro-marketing can be used to find ways to alter the same pattern of demand through flexible pricing, promotion, and other incentives.

Ans-10.vi: Premise control is a tool for systematic and continuous monitoring of the environment to verify the validity and accuracy of the premises on which the strategy has been built.

Ans-10.vii: Sigma means:

- ♦ Maintenance of the desired quality in processes and end products.
- ♦ By taking systematic & integrated efforts.

Ans-11.a: **Efficiency:**

- ♦ Efficiency is an **operational objective**
- ♦ Efficiency is related to **carrying out production at minimum cost.**
- ♦ **Business enterprise looks for efficiency**
 - In choosing appropriate means to achieve their goals
 - Doing things in the best possible manner and
 - Utilizing resources in a most suitable manner to get highest productivity.

Profitability

- ♦ It is generally declared that private enterprises are primarily motivated by the objective of profit.
- ♦ **Profit is the overall measure of performance.** Thus it is the main objective of business.
- ♦ **Profit Maximization has a long-term view point, and includes:**
 - Development of wealth,
 - Increased goodwill,
 - Benefits to all shareholders.

Ans-11.b: **Globalization & competition demand for better management** which is only possible with an **implementation of IT.**

The impact of IT on BPR can be identified as:

- ♦ Drastic reduction in operational time,
- ♦ Defeating restrictions of geographical area,
- ♦ Provide timely, reliable & accurate information, and
- ♦ **Information Technology increases Business Values in terms of:**
 - Efficiency – by way of increased productivity,
 - Effectiveness – by way of better management,
 - Innovation – by way of improved products & services

BPR + Information Technology Tools = Business Engineering

Ans-12.a: Corporate strategy is basically concerned with the choice of businesses, products and markets. The following point will clarify the corporate strategy.

- ♦ It can also be viewed as the objective-strategy design of the firm.
- ♦ It is the design for filling the firm's strategic planning gap.
- ♦ It is concerned with the choice of the firm's products and markets; it actually denotes the changes/additions/deletions in the firm's existing product-market postures. It spells out the business in which the firm will play, the markets in which it will operate and the customer needs it will serve.
- ♦ It ensures that the right fit is achieved between the firm and its environment.
- ♦ It helps build the relevant competitive advantages for the firm.
- ♦ Corporate objectives + Corporate strategy = Concept of Business.

Ans-12.b: **Experience Curve:**

- ♦ It is **similar to a learning curve** which explains the **efficiency increase by workers through repetitive productive work.**
- ♦ It refers to **phenomenon that unit's costs decline as a firm accumulates experience in terms of increasing volume of production.**
- ♦ Experience Curve results from factors like –
 - Learning Effects,
 - Economies of Scale,

- Product Re-Design, &
- Technological Improvements in Production.
- ♦ With an **implementation of Experience Curve**, larger Firms in an industry tend to have lower costs per unit as compared to smaller Companies, thus **gaining a competitive cost advantage**.

Ans-13.a: Supply chain management is an extension of logistic management. However, there is difference between the two. Logistical activities typically include management of inbound and outbound goods, transportation, warehousing, handling of material, fulfillment of orders, inventory management, supply/demand planning. Although these activities also form part of Supply chain management, the latter has different components. Logistic management can be termed as one of its part that is related to planning, implementing, and controlling the movement and storage of goods, services and related information between the point of origin and the point of consumption.

Supply chain management includes more aspects apart from the logistics function. It is a tool of business transformation and involves delivering the right product at the right time to the right place and at the right price. It reduces costs of organizations and enhances customer service.

Ans-13.b: **Vertically Integrated Diversification**

- ♦ In this case firms **decide** to engage in business that is **related** to the existing business of the firms.
- ♦ The firms remain vertically within the same process.
- ♦ In sequence, it moves forward or backward in the chain and enters specific product/process steps with the intention of making them into new business for the firms.
- ♦ The characteristic feature of vertically integrated diversification is that, here, the firms do not jump outside the vertically linked product-process chain.

Horizontally Integrated Diversification

- ♦ Through the **acquisition of one or more similar business operating** at the same stage of the production-marketing chain that is taking over competitor's products.

Ans-14a: **Steps for initiating a strategic change**

Strategic change is a complex process and it involves a corporate strategy focused on new markets, products, services and new ways of doing business.

Steps to initiate strategic change

For initiating strategic change, three steps can be identified as under:

- (i) **Recognize the need for change:** The first step is to diagnose which facets of the present corporate culture are strategy supportive and which are not. This basically means going for environmental scanning involving appraisal of both internal and external capabilities may it be through SWOT analysis and then determine where the lacuna lies and scope for change exists.
- (ii) **Create a shared vision to manage change:** Objectives and vision of both individuals and organizations should coincide. There should be no conflict between them. Senior managers need to constantly and consistently communicate the vision not only to inform but also to overcome resistance through proper communication. Strategy implementers have to convince all those concerned that the change in business culture is not superficial or cosmetic. The actions taken have to be credible, highly visible and unmistakably indicative of management's seriousness to new strategic initiatives and associated changes.
- (iii) **Institutionalize the change:** This is basically an action stage which requires implementation of changed strategy. Creating and sustaining a different attitude towards change is essential to ensure that the firm does not slip back into old ways of thinking or doing things. Capacity for self-renewal should be a fundamental anchor of the new culture of the firm. Besides, change process must be regularly monitored and reviewed to analyze the after-effects of change. Any discrepancy or deviation should be brought to the notice of persons concerned so that the necessary corrective actions are taken. It takes time for the changed culture to prevail.

Ans-14.b: **Characteristics of a Global Company**

To be specific, a global company has three characteristics:

- ♦ It is a conglomerate of multiple units (located in different parts of the globe) but all linked by common ownership.
- ♦ Multiple units draw on a common pool of resources, such as money, credit, information, patents, trade names and control systems.
- ♦ The units respond to some common strategy. Nestle International is an example of an enterprise that has become multinational. It sells its products in most countries and manufactures in many. Besides, its managers and shareholders are also based in different nations.