Q. No. 1 is compulsory.
Answer any four questions from the rest

SECTION – A : ENTERPRISE INFORMATION SYSTEMS

Answer 1:

(a) **Public Cloud**: The public cloud is the cloud infrastructure that is provisioned for open use by the general public. It may be owned, managed, and operated by a business, academic, or government organizations, or some combination of them. Public cloud consists of users from all over the world wherein a user can simply purchase resources on an hourly basis and work with the resources which are available in the cloud provider’s premises.

(b) **Proxy Server**: A Proxy Server is a computer that offers a computer network service to allow clients to make indirect network connections to other network services. A client connects to the proxy server, and then requests a connection, file, or other resource available on a different server. The proxy provides the resource either by connecting to the specified server or by serving it from a cache. In some cases, the proxy may alter the client’s request or the server’s response for various purposes.

(c)
- It is an overall business management system that caters need of all the people connected with the organization. Every organization uses variety of resources in achieving its organization goals.
- ERP is an enterprise-wide information system designed to coordinate all the resources, information, and activities needed to complete business process.
- Accounting and Finance function is considered as backbone for any business. Hence Financial & Accounting Systems are an important and integral part of ERP systems.
- ERP system includes so many other functions also.
- An ERP system supports most of the business system that maintains in a single database the data needed for a variety of business functions such as Manufacturing, Supply Chain Management, Financials, Projects, Human Resources and Customer Relationship Management.

(d) **Mobile Wallets**: It is defined as virtual wallets that stores payment card information on a mobile device. Mobile Wallets provide a convenient way for a user to make-in-store payments and can be used that merchants listed with the mobilewalletservice providers. There are mobilewallets like Paytm, Freecharge, Buddy, Mobikwik etc.

(e) **Cyber Crime**: Cyber-crime also known as Computer Crime are crimes that involve use of a computer and a network. It is defined as the offences that are committed against individuals or groups of individuals with a criminal motive to intentionally harm the reputation of the victim or cause physical or mental harm, or loss, to the victim directly or indirectly, using modern telecommunication networks such as Internet (Chat rooms, emails, notice boards and groups) and mobile phones.
Committing of a fraud by manipulation of the input, output or throughput of a computer based system; Computer forgery which involves changing images or data stored in computers; Deliberate damage caused to computer data or programs through virus programs or logic bombs; Unauthorized access to computers by hacking into systems or stealing passwords; and unauthorized reproduction of computer programs or software piracy are some examples of Cybercrimes.

Answer 2:
(a) Let us define the variables first:
- **PM**: Purchase Mode
- **BA**: Bill Amount
- **FIN_BA**: Final Bill Amount
- **DISC**: Discount

![Flowchart Image]
(b) Various risks that are involved in the Credit Card process are as follows:

- Credit Line setup is unauthorized and not in line with the banks policy.
- Masters defined for the customer are not in accordance with the Pre-Disbursement Certificate.
- Credit Line setup can be breached.
- Inaccurate interest/charge being calculated in the Credit Card system.
- Inaccurate reconciliations performed.

Answer 3:

(a) The controls that are related to the physical security of the tangible Information Systems Resources stored on tangible media.

i. **Locks on Doors:** These are as below:

- **Cipher locks (Combination Door Locks):** Cipher locks are used in low security situations or when many entrances and exits must be usable all the time. To enter, a person presses a four-digit number, and the door will unlock for a predetermined period, usually ten to thirty seconds.
- **Bolting Door Locks:** A special metal key is used to gain entry when the lock is a bolting door lock. To avoid illegal entry, the keys should not be duplicated.
- **Electronic Door Locks:** A magnetic or embedded chip-based plastics card key or token may be entered a reader to gain access in these systems.

ii. **Physical Identification Medium:** These are discussed below:

- **Personal Identification Numbers (PIN):** A secret number will be assigned to the individual, in conjunction with some means of identifying the individual, serves to verify the authenticity of the individual. The visitor will be asked to log on by inserting a card in some device and then enter their PIN via a PIN keypad for authentication. His/her entry will be matched with the PIN number available in the security database.
- **Plastic Cards:** These cards are used for identification purposes. Customers should safeguard their card so that it does not fall into unauthorized hands.
- **Identification Badges:** Special identification badges can be issued to personnel as well as visitors. For easy identification purposes, their color of the badge can be changed. Sophisticated photo IDs can also be utilized as electronic card keys.

(b) **Logging on Facilities:** These are given as under:

- **Manual Logging:** All visitors should be prompted to sign a visitor’s log indicating their name, company represented, their purpose of visit, and person to see. Logging may happen at both fronts - reception and entrance to the computer room. A valid and acceptable identification such as a driver’s license, business card or vendor identification tag may also be asked for before allowing entry inside the company.

As network visibility is of high importance, this lack of visibility can be hazardous. For example, if a virus hits the network and all the devices connected to the network need to be scanned, it is probable that some of the devices would miss out on this routine scan operation.
• **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.

• **Application Risks:** It is normally exemplified and hidden in 'Application Viruses and Malware’. A related report revealed that a majority of 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’s security – the organization or the user’.

• **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. In addition to this, a weak policy fails to educate the user, thereby increasing vulnerability to the above-mentioned threats.

Answer 4:
(a) An ideal ERP System where a single database is being utilized and contains all data for various software modules includes the following modules:

- **Manufacturing:** Some of the functions include engineering, capacity, workflow management, quality control, bills of material, manufacturing process, etc.
- **Financials:** Accounts payable, accounts receivable, fixed assets, general ledger and cash management, etc.
- **Human Resources:** Benefits, training, payroll, time and attendance, etc.
- **Supply Chain Management:** Inventory, supply chain planning, supplier scheduling, claim processing, order entry, purchasing, etc.
- **Projects:** Costing, billing, activity management, time and expense, etc.
- **Customer Relationship Management (CRM):** CRM is a term applied to processes implemented by a company to handle its contact with its customers. CRM software is used to support these processes, storing information on current and prospective customers. Information in the system can be accessed and entered by employees in different departments, such as sales, marketing, customer service, training, professional development, performance management, human resource development and compensation.
- **Data Warehouse:** Usually this is a module that can be accessed by an organization’s customers, suppliers and employees. Data warehouse is a repository of an organization’s electronically stored data. These are designed to facilitate reporting and analysis, to retrieve and analyze data; tools to extract, transform and load data into the repository; and to manage the data dictionary.
(b) The major objectives of Information System’s (IS) Auditing are as follows:

- **Asset Safeguarding:** The information system assets (hardware, software, data information etc.) must be protected by a system of internal controls from unauthorized access.
- **Data Integrity:** The importance to maintain integrity of data of an organization requires all the time and is a fundamental attribute of IS Auditing. It is also important from the business perspective of the decision maker, competition and the market environment.
- **System Effectiveness:** Effectiveness of a system is evaluated by auditing the characteristics and objective of the system to meet business and user requirements.
- **System Efficiency:** To optimize the use of various information system resources such as machine time, peripherals, system software and labour along with the impact on its computing environment.

**Answer 5:**

(a) A Mortgage loan is a secured loan which is secured on the borrower’s property by marking a lien on the property as collateral for the loan. If the borrower stops paying, then the lender has the first charge on the property. Mortgages are used by individuals and businesses to make large real estate purchases without paying the entire value of the purchase up front. Over the period of many years, the borrowers repay the loan amount along with interest until there is no outstanding.

**Types of Mortgage Loan**
- **Home Loan:** This is a traditional mortgage where the customer has the option of selecting fixed or variable rate of interest and is provided for the purchase of property.
- **Top Up Loan:** Here the customer already has an existing loan and is applying for additional amount either for refurbishment or renovation of the house.
- **Loans for Under Construction Property:** In case of under construction properties the loan is disbursed in tranches / parts as per construction plan.

(b) Masters: In a CBS software, Masters refer to the setting parameters for various types of product and service type as per software modules used in the bank. The masters are also referred to as standing data as these are changed only when required and will require higher level of access. The parameter settings in the masters will drive how the software will process relevant transactions. For example: If RBI has changed the lending rates based on which bank has decided to change the interest rates for specific type of advances, the interest parameters are to be updated. Any changes to these data should be authorized by appropriate personnel and these are relogged and captured in exception reports.

- **Customer Master for advances:** Credit limit, loan period, interest rate, penal interest rate, security offered, sanction terms, customer details, etc.
- **Deposit Master:** Interest rate, type of deposit, service charges, period of interest computation, Minimum balance, withdrawal limits, a/c type (NRE/NRO) etc.
- **Customer Master:** Customer type, details, address, PAN details,
- **Employee Master:** Employee Name, Id, designation, level, joining details, salary, leave, etc.
- **Income Tax Master:** Tax rates applicable, Slabs, frequency of TDS, etc.
Answer 6:
(a) DBMS may be defined as a software that aid in organizing, controlling and using the data needed by the application programme. They provide the facility to create and maintain a well-organized database. Applications access the DBMS, which then accesses the data. DBMS packages generally provide an interface to view and change the design of the database, create queries, and develop reports.

Advantages of DBMS
- Major advantage of DBMS are given as follows:
  - **Permitting Data Sharing**: One of the principle advantages of a DBMS is that the same information can be made available to different users.
  - **Minimizing Data Redundancy**: In a DBMS duplication of information or redundancy is, if not eliminated, carefully controlled or reduced i.e. there is no need to repeat the same data over and over again. Minimizing redundancy can therefore significantly reduce the cost of storing information on hard drives and other storage devices.
  - **Integrity can be maintained**: Data integrity is maintained by having accurate, consistent, and up-to-date data. Updates and changes to the data only must be made in one place in DBMS ensuring Integrity. The chances of making a mistake increase if the same data needs to be changed at several different places than making the change in one place.
  - **Program and File consistency**: Using a DBMS, file formats and programs are standardized. This makes the data files easier to maintain because the same rules and guidelines apply across all types of data. The level of consistency across files and programs also makes it easier to manage data when multiple programmers are involved.
  - **User-friendly**: DBMS makes the data access and manipulation easier for the user. DBMS also reduce the reliance of users on computer exports to meet their data needs.
  - **Improved security**: DBMSs allow multiple users to access the same data resources which could lead to risk to an enterprise if not controlled. Security constraints can be defined i.e. Rules can be built to give access to sensitive data. Some sources of information should be protected or secured and only viewed by select individuals. Using passwords, database management systems can be used to restrict data access to only those who should see it.
  - **Achieving program/data independence**: In a DBMS, data does not reside in applications but data bases program & data are independent of each other.
  - **Faster Application Development**: In the case of development of DBMS, application development becomes fast. The data is already therein databases, application developer has to think of only the logic required to retrieve the data in the way a user needs.

(b) Various Output Controls are as follows:
- **Storage and Logging of sensitive, critical forms**: Pre-printed stationery should be stored securely to prevent unauthorized destruction or removal and usage. Only authorized persons should be allowed access to stationery supplies such as security forms, negotiable instruments, etc.
Logging of output program executions: When programs used for output of data are executed, these should be logged and monitored; otherwise confidentiality/integrity of the data may be compromised.

Spooling/Queuing: ‘Spool’ is an acronym for ‘Simultaneous (peripherals Operations Online’). This is a process used to ensure that the user can continue working, while the print operation is getting completed.

Controls over printing: Outputs should be made on the correct printer and it should be ensured that unauthorized disclosure of information printed does not take place.

Report Distribution and Collection Controls: Distribution of reports should be made in a secure way to prevent unauthorized disclosure of data. It should be made immediately after printing to ensure that the time gap between generation and distribution is reduced.

Retention Controls: Retention controls consider the duration for which outputs should be retained before being destroyed. Consideration should be given to the type of medium on which the output is stored.
Answer 7:

(a) **Competitive advantage** is the position of a firm to maintain and sustain a favorable market position when compared to the competitors. Competitive advantage is ability to offer buyers something different and thereby providing more value for the money. It is achieved advantage over rivals when a company’s profitability is greater than average profitability of firms in its industry. It is the result of a successful strategy. This position gets translated into higher market share, higher profits when compared to those that are obtained by competitors operating in the same industry. Competitive advantage may also be in the form of low cost relationship in the industry or being unique in the industry along dimensions that are widely valued by the customers in particular and the society at large.

(b)

- The production/operations strategy is related to the production system, operational planning and control and logistics management.
- It affects the nature of product/service, the markets to be served, and the manner in which the markets are to be served.
- All these collectively influence the operations system structure and objectives which are used to determine the operations plans and policies.
- Thus, a strategy of expansion through related diversification, for instance, will affect what products are offered to which market and how these markets are served.
- The operations system structure, which is concerned with the manufacturing/service and supply/delivery system, and operations system objectives, which are related to customer service and resource utilization, both determine what operations, plans and policies are set.

(c) **Directional strategies**, also called **grand strategies**, provide basic directions for strategic actions towards achieving strategic goals. Such strategies are formulated at the corporate level so are also known as **corporate strategies**.

The corporate strategies a firm can adopt have been classified into four broad categories: stability, expansion, retrenchment, and combination.

(d) **A core competence** is a unique strength of an organization which may not be shared by others. It is defined as a combination of skills and techniques rather than individual skill or separate technique.

Core competencies are those capabilities that are critical to a business achieving competitive advantage. In order to qualify as a core competence, the competency should differentiate the business from any other similar businesses.

(e) **In co-generic merger** two or more merging organizations are associated in some way or the other related to the production processes, business markets, or basic required technologies.

Such merger includes the extension of the product line or acquiring components that are required in the daily operations.

It offers great opportunities to business to diversify around a common set of resources and strategic requirements.
Answer 8:
(a) Incorrect: Strategic management applies equally to profit as well as non-profit organizations. Similar to commercial organizations, ‘not-for-profit’ organizations must also have strategies, purpose, vision and mission also. Strategic Management is required to give direction, focus and lead to efficient utilization of resources. In many ‘not-for-profit’ organizations surpluses are important for their survival and growth.

(b) Correct: The human resource manager has a significant role to play in developing core competency of the firm. A core competence is a unique strength of an organization which may not be shared by others. Core-competencies can be generated and maintained only through the effective management of human resources and their skills.

(c) Incorrect: Every company has its own organizational culture. Each has its own business philosophy and principles, its own ways of approaching to the problems and making decisions, its own work climate, work ethics, etc. Therefore, corporate culture is not identical in all organizations. Organizations over a period of time inherit and percolate down its own specific work ethos and approaches.

(d) Incorrect: Marketing function and production function complement each other. They need to work in tandem to produce goods as per the needs and preferences of the customers. Marketing links the production with the customers.

(e) Correct: Economies of scale leads to decline in the per-unit cost of production (or other activity) as volume grows. A large firm that enjoys economies of scale can produce high volumes of goods at successively lower costs. This tends to discourage new entrants.

Answer 9:
(a) XYZ Ltd. is a sick company with accumulated losses that have eroded its net worth. The multi-product company may analyze its various products to take decisions on the viability of each. The company may consider retrenchment strategy. Retrenchment becomes necessary for coping with hostile and adverse situations in the environment and when any other strategy is likely to be suicidal. Retrenchment strategy is adopted because of continuous losses and unavailability and stability can be ensured by reallocation of resources from unprofitable to profitable businesses. Retrenchment strategy is followed when an organization substantially reduces the scope of its activity. This is done through an attempt to find out the problem areas and diagnose the causes of the problems. Next, steps are taken to solve the problems. These steps result in different kinds of retrenchment strategies as follows:

Turnaround strategy: If the organization chooses to transform itself into a leaner structure and focuses on ways and means to reverse the process of decline, it adopts a turnaround strategy. It may try to reduce costs, eliminate unprofitable outputs, generate revenue, improve coordination, better control, and so on.
Divestment Strategy: 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.  

Liquidation Strategy: In the retrenchment strategy, the most extreme and unattractive is liquidation strategy. It involves closing down a firm and selling its assets. It is considered as the last resort because it leads to serious consequences such as loss of employment for workers and other employees, termination of opportunities where a firm could pursue any future activities, and the stigma of failure.

The management of multiproduct sick company manufacturing various items need to understand pros and cons of each strategic option. The decision will depend upon the specific circumstances of each product and management goals of the company.

(b) Ram is a follower of transactional leadership style that focuses on designing systems and controlling the organization's activities. Such a leader believes in using authority of its office to exchange rewards, such as pay and status. They prefer a more formalized approach to motivation, setting clear goals with explicit rewards or penalties for achievement or non-achievement. Transactional leaders try to build on the existing culture and enhance current practices. The style is better suited in persuading people to work efficiently and run operations smoothly.

On the other hand, Shyam is a follower of transformational leadership style. The style uses charisma and enthusiasm to inspire people to exert them for the good of the organization. Transformational leaders offer excitement, vision, intellectual stimulation and personal satisfaction. They inspire involvement in a mission, giving followers a ‘dream’ or ‘vision’ of a higher calling so as to elicit more dramatic changes in organizational performance. Such a leadership motivates followers to do more than originally affected to do by stretching their abilities and increasing their self-confidence, and also promote innovation throughout the organization.

Answer 10:

(a) A Mission statement tells you the fundamental purpose of the organization. It concentrates on the present. It defines the customer and the critical processes. It informs you of the desired level of performance. On the other hand, a vision statement outlines what the organization wants to be. It concentrates on the future. It is a source of inspiration. It provides clear decision-making criteria.

A mission statement can resemble a vision statement in a few companies, but that can be a grave mistake. It can confuse people. Following are the major differences between vision and mission:

1. The vision states the future direction while the mission states the ongoing activities of the organization.
2. The vision statement can galvanize the people to achieve defined objectives, even if they are stretch objectives, provided the vision is specific, measurable, achievable, relevant and time bound. A mission statement provides a path to realize the vision in line with its values. These statements have a direct bearing on the bottom line and success of the organization.
3. A vision statement defines the purpose or broader goal for being in existence or in the business and can remain the same for decades if crafted well while a mission statement is more specific in terms of both the future state and the time frame. Mission describes what will be achieved if the organization is successful.
A typical large organization is a multidivisional organization that competes in several different businesses. It has separate self-contained divisions to manage each of these. There are three levels of strategy in management of business - corporate, business, and functional.

The corporate level of management consists of the chief executive officer and other top level executives. These individuals occupy the apex of decision making within the organization. The role of corporate-level managers is to oversee the development of strategies for the whole organization. This role includes defining the mission and goals of the organization, determining what businesses it should be in, and allocating resources among the different businesses and so on rests at the Corporate Level.

The development of strategies for individual business areas is the responsibility of the general managers in these different businesses or business level managers. A business unit is a self-contained division with its own functions - for example, finance, production, and marketing. The strategic role of business-level manager, head of the division, is to translate the general statements of direction and intent that come from the corporate level into concrete strategies for individual businesses.

Functional-level managers are responsible for the specific business functions or operations such as human resources, purchasing, product development, customer service, and so on. Thus, a functional manager’s sphere of responsibility is generally confined to one organizational activity, whereas general managers oversee the operation of a whole company or division.

**Answer 11:**

(a) An entrepreneur is an individual who conceives the idea of starting a new venture, takes all types of risks, not only to put the product or service into reality but also to make it an extremely demanding one. An entrepreneur is one who:

- Initiates and innovates a new concept.
- Recognizes and utilizes opportunity.
- Arranges and coordinates resources such as man, material, machine, and capital.
- Faces risks and uncertainties.
- Establishes a startup company.
- Adds value to the product or service.
- Takes decisions to make the product or service a profitable one.
- Is responsible for the profits or losses of the company.

(b) **Advantages of Cost leadership strategy**

Earlier we have discussed Porter’s Five Forces Model in detail. A cost leadership strategy may help to remain profitable even with: rivalry, new entrants, suppliers’ power, substitute products, and buyers’ power.

1. **Rivalry** – Competitors are likely to avoid a price war, since the low cost firm will continue to earn profits after competitors compete away their profits.
2. **Buyers** – Powerful buyers/customers would not be able to exploit the cost leader firm and will continue to buy its product.
3. **Suppliers** – Cost leaders are able to absorb greater price increases before it must raise price to customers.
4. **Entrants** – Low cost leaders create barriers to market entry through its continuous focus on efficiency and reducing costs.
5. **Substitutes** – Low cost leaders are more likely to lower costs to induce customers to stay with their product, invest to develop substitutes, purchase patents.
**Answer 12:**

(a) Business Process Reengineering (BPR) is an approach to unusual improvement in operating effectiveness through the redesigning of critical business processes and supporting business systems. It is revolutionary redesign of key business processes that involves examination of the basic process itself. It looks at the minute details of the process, such as why the work is done, who does it, where it is done and when it is done. BPR refers to the analysis and redesign of workflows and processes both within the organization and between the organization and the external entities like suppliers, distributors, and service providers.

The orientation of redesigning efforts is basically radical. In other words, it is a total deconstruction and rethinking of business process in its entirety, unconstrained by its existing structure and pattern. Its objective is to obtain quantum jump in process performance in terms of time, cost, output, quality, and responsiveness to customers. BPR is a revolutionary redesigning of key business processes. BPR involves the following steps:

1. **Determining objectives and framework:** Objectives are the desired end results of the design process which the management and organization attempts to achieve. This will provide the required focus, direction, and motivation for the redesign process. It helps in building a comprehensive foundation for the reengineering process.

2. **Identify customers and determine their needs:** The designers have to understand customers – their profile, their steps in acquiring, using and disposing a product. The purpose is to redesign business process that clearly provides added value to the customer.

3. **Study the existing process:** The existing processes will provide an important base for the redesigners. The purpose is to gain an understanding of the ‘what’ and ‘why’ of the targeted process. However, some companies go through the reengineering process with clean perspective without laying emphasis on the past processes.

4. **Formulate a redesign process plan:** The information gained through the earlier steps is translated into an ideal redesign process. Formulation of redesign plan is the real crux of the reengineering efforts. Customer focused redesign concepts are identified and formulated. In this step alternative processes are considered and the best is selected.

5. **Implement the redesign:** It is easier to formulate new process than to implement them. Implementation of the redesigned process and application of other knowledge gained from the previous steps is key to achieve dramatic improvements. It is the joint responsibility of the designers and management to operationalise the new process.

(b) Strategic uncertainty denotes the uncertainty that has crucial implications for the organization. A typical external analysis will emerge with dozens of strategic uncertainties.

To be manageable, they need to be grouped into logical clusters or themes. It is then useful to assess the importance of each cluster in order to set priorities with respect to Information gathering and analysis.

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