

# CA Test Series

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**NOTE'S**

**PRACTICE**

**CHAPTERWISE**

**NOTES**

**CA INTER EISM**

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**EIS PART**



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Ch-1 Automated Business Processes

**Question 1**

Explain the following in brief:

(a) Cyber Crime

(b) Risk Assessment

**Answer:**

**(a) 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.

**(b) Risk Assessment:** Risk Assessment is one of the five components that define Internal Control under SA 315. Every entity faces a variety of risks from external and internal resources. Risk assessment involves a dynamic and iterative process for identifying and assessing risks to the achievement of objectives. Thus, risk assessment forms the basis for determining how risks will be managed. A precondition to risk assessment is the establishment of objectives, linked at



different levels of the entity. Management specifies objectives within categories of operations, reporting, and compliance with sufficient clarity to be able to identify and assess risks to those objectives. Risk assessment also requires management to consider the impact of possible changes in the external environment and within its own business model that may render internal control ineffective.

## Question 2

**Explain the positive aspects contained in the IT Act, 2000 and its provisions, from the perspective of e-commerce in India.**

**Answer:** From the perspective of e-commerce in India, the IT Act, 2000 and its provisions contain many positive aspects which are as follows:

- The implications for the e-businesses is that email is now a valid and legal form of communication in India that can be duly produced and approved in a court of law.
- Companies shall now be able to carry out electronic commerce using the legal infrastructure provided by the Act.
- Digital Signatures have been given legal validity and sanction in the Act.
- The Act throws open the doors for the entry of corporate companies in the business of being Certifying Authorities for issuing Digital Signatures Certificates.
- The Act allows Government to issue notification on the web thus heralding e- governance.
- The Act enables the companies to file any form, application or any other document with any office, authority, body or agency owned or controlled by the appropriate Government in electronic form by means of such electronic form as may be prescribed by the appropriate Government.
- The IT Act also addresses the important issues of security, which are so critical to the success of electronic transactions.

- The Act has given a legal definition to the concept of secure digital signatures that would be required to have been passed through a system of a security procedure, as stipulated by the Government at a later date.

Under the IT Act, 2000, it shall now be possible for corporates to have a statutory remedy in case if anyone breaks into their computer systems or network and causes damages or copies data. The remedy provided by the Act is in the form of monetary damages, not exceeding ` 1 crore.

### Question 3

(a) An e-commerce website is offering following discounts:

- If the purchase mode is via website, a discount of 5% is given on the bill amount.
- If the purchase mode is via phone app, a discount of 10% is given on bill amount.
- If purchase is done via any other mode, customer is not eligible for any discount. Draw a Flowchart to calculate and display the bill amount payable by the customer.

**Answer:**

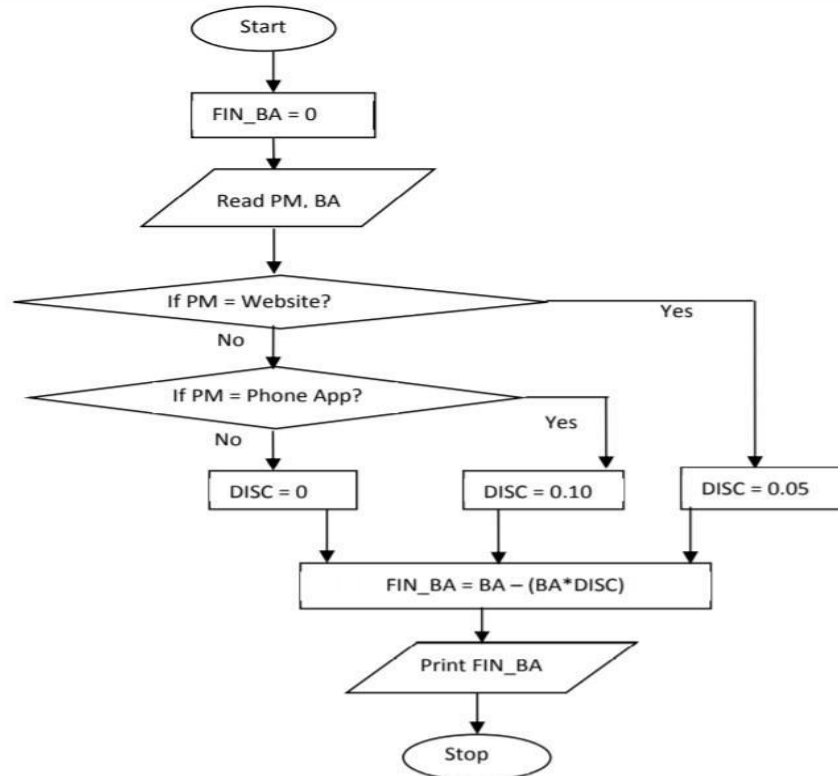
(a) Let us define the variables first:

**PM:** Purchase Mode

**BA:** Bill Amount

**FIN\_BA:** Final Bill Amount

**DISC:** Discount



#### Question 4

Answer the following in brief:

Explain 'Data Flow Diagram'.

**Answer:** Data Flow Diagrams: Data Flow Diagrams (DFD) shows the flow of data or information from one place to another. DFDs describe the processes showing how these processes link together through data stores and how the processes relate to the users and the outside world. In other words, DFD basically provides an overview of -

- What does a system processes;
- What transformations are performed;
- What data are stored;
- What results are produced and where they flow?

### Question 5

"Enterprise Risk Management (ERM) does not create a risk-free environment; rather it enables management to operate more effectively in environments filled with risks". In view of this statement, explain the various benefits, which Board of Directors and Management of an entity seek to achieve by implementing the ERM process within the entity.

#### Answer:

(a) Following features in Enterprise Risk Management (ERM) provides enhanced capabilities to enable management to operate more effectively in environments filled with risks:

- **Align risk appetite and strategy:** Risk appetite is the degree of risk, on an overall-based level that an enterprise is willing to accept in pursuit of its goals. Management considers the entity's risk appetite first in evaluating strategic alternatives, then in setting objectives aligned with the selected strategy and in developing mechanisms to manage the related risks.
- **Link growth, risk and return:** Entities accept risk as part of value creation and preservation, and they expect return commensurate with the risk. ERM provides an enhanced ability to identify and assess risks, and establish acceptable levels of risk relative to growth and return objectives.
- **Enhance risk response decisions:** ERM provides the rigor to identify and select among alternative risk responses - risk avoidance, reduction, sharing and acceptance. ERM provides methodologies and techniques for making these decisions.
- **Minimize operational surprises and losses:** Entities have enhanced capability to identify potential events, assess risk and establish responses, thereby reducing the occurrence of surprises and related costs or losses.



- Identify and manage cross-enterprise risks: Every entity faces a myriad of risks affecting different parts of the enterprise. Management needs to not only manage individual risks, but also understand interrelated impacts.
- Provide integrated responses to multiple risks: Business processes carry many inherent risks and ERM enables integrated solutions for managing the risks.
- Seize opportunities: Management considers potential events, rather than just risks, and by considering a full range of events, management gains an understanding of how certain events represent opportunities.
- Rationalize capital: More robust information on an entity's total risk allows management to more effectively assess overall capital needs and improve capital allocation.

#### Question 6

State the required characteristics of goals to be achieved by implementing Business Process Automation (BPA).

OR

Give two examples of the Risks and Control objectives for Human Resource Process at configuration level.

#### Answer:

The required characteristics of goals to be achieved by implementing Business Process Automation (BPA) could be abbreviated as "SMART" which means:

- a. S - Specific
- b. M - Measurable
- c. A - Attainable
- d. R – Relevant

e. T – Timely

OR

Risks and Control Objectives for Human Resource Process at Configuration Levels are as follows:

Risk	Control Objective
Employees who have left the company continue to have system access.	System access to be immediately removed when employees leave the company.
Employees have system access in excess of their job requirements.	Employees should be given system access based on a “need to know” basis and to perform their job function.

### Question 7

Corporate governance is the framework of rules and practices, by which a board of directors ensures accountability, fairness and transparency in a company’s relationship with all its stakeholders. List out the rules and procedures that constitute corporate governance framework.

**Answer :** The Corporate Governance Framework consists of:

- explicit and implicit contracts between the company and the stakeholders for distribution of responsibilities, rights, and rewards;
- procedures for reconciling the sometimes-conflicting interests of stakeholders in accordance with their duties, privileges and roles; and
- procedures for proper supervision, control, and information-flows to serve as a system of checks-and-balances.

### Question 8

A business organization is planning to increase the accuracy of information transferred and certifies the repeatability of the value-added task performed by the automation of business. Being a management consultant, identify any four major benefits that the organization can achieve through the automation of a business process.

**Answer:** Major benefits of automating Business Processes are as follows:

- **Quality and Consistency:** Ensures that every action is performed identically - resulting in high quality, reliable results and stakeholders will consistently experience the same level of service.
- **Time Saving:** Automation reduces the number of tasks employees would otherwise need to do manually. It frees up time to work on items that add genuine value to the business, allowing innovation and increasing employees' levels of motivation.
- **Visibility:** Automated processes are controlled and consistently operate accurately within the defined timeline. It gives visibility of the process status to the organization.
- **Improved Operational Efficiency:** Automation reduces the time it takes to achieve a task, the effort required to undertake it and the cost of completing it successfully. Automation not only ensures systems run smoothly and efficiently, but that errors are eliminated and best practices are constantly leveraged.
- **Governance & Reliability:** The consistency of automated processes means stakeholders can rely on business processes to operate and offer reliable processes to customers, maintaining a competitive advantage.
- **Reduced Turnaround Times:** Eliminate unnecessary tasks and realign process steps to optimize the flow of information throughout production, service, billing and collection. This adjustment of processes distills operational performance and reduces the turnaround times for both staff and external customers.

- **Reduced Costs:** Manual tasks, given that they are performed one-at-a-time and at a slower rate than an automated task, will cost more. Automation allows us to accomplish more by utilizing fewer resources.

### Question 9

General controls are pervasive controls and apply to all system components, processes and data for a given enterprise or systems environment. As an IT consultant, discuss some of the controls covered under general controls which you would like to ensure for a given enterprise.

**Answer:** General controls related to IT environment and Information Systems include the following:

- **Information Security Policy:** The security policy is approved by the senior management and encompasses all areas of operations of bank and drives access to information across the enterprise and other stakeholders.
- **Administration, Access and Authentication:** IT should be administered with appropriate policies and procedures clearly defining the levels of access to information and authentication of users.
- **Separation of key IT functions:** Secure deployment of IT requires the bank to have separate IT organization structure with key demarcation of duties for different personnel within IT department and to ensure that there are no SoD conflicts.
- **Management of Systems Acquisition and Implementation:** Software solutions for Core Banking Systems (CBS) are most developed acquired and implemented. Hence, process of acquisition and implementation of systems should be properly controlled.
- **Change Management:** IT solutions deployed and its various components must be changed in tune with changing needs as per changes in technology environment, business processes,

regulatory and compliance requirements as these changes impact the live environment of banking services. Hence, change management process should be implemented to ensure smooth transition to new environments covering all key changes including hardware, software and business processes. All changes must be properly approved by the management before implementation.

- **Backup, Recovery and Business Continuity:** Heavy dependence on IT and criticality makes it imperative that resilience of banking operations should be ensured by having appropriate business continuity including backup, recovery and off-site data center.
- **Proper Development and Implementation of Application Software:** Application software drives the business processes of the banks. These solutions in case developed and implemented must be properly controlled by using standard software development process.
- **Confidentiality, Integrity and Availability of Software and data files:** Security is implemented to ensure Confidentiality, Integrity and Availability of information. **Confidentiality** refers to protection of critical information, **Integrity** refers to ensuring authenticity of information at all stages of processing or contents should not be altered, and **Availability** refers to ensuring availability of information to users when required. All IT operations need to be controlled by appropriate policies and procedures that refer to how IT is deployed, implemented and maintained within the bank.
- **Incident response and management:** There may be various incidents created due to failure of IT that need to be appropriately responded and managed as per pre- defined policies and procedures.

### Question 10

How the inherent risks involved in BPA can be classified? Discuss any four.



**Answer:** 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 11

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?

**Answer:** The advantages of Flowcharts to represent the business process in diagrammatic form are as follows:

- 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.

**Multiple choice questions:**

**(Q-1).** \_\_\_\_\_ may be defined as any kind of information system which improves the functions of an enterprise business processes by \_\_\_\_\_.

- (a) Enterprise Information System, Automation
- (b) Business Information System, Integration
- (c) Managerial Information System, Automation
- (d) Enterprise Information System, Integration

**(Q-2).** Today large organizations have different kinds of Information systems and this fragmentation of data in hundreds of separate systems, degrades organizational efficiency and results in the decline of business performance. In these situations, entity uses a mechanism known as \_\_\_\_\_.

- (a) Business Information System
- (b) Organisation Information System
- (c) Management Information System
- (d) Enterprise Information System

**(Q-3).** Enterprise Information System is used in conjunction with \_\_\_\_\_ & \_\_\_\_\_ to automate business processes.

- (a) Customer Relationship Management, CORE Banking System
- (b) Customer Relationship Management, Production Management System
- (c) Customer Relationship Management, Supply Chain Management
- (d) Customer Relationship Management, Value Chain Management

**(Q-4).** One of the most important elements of Enterprise Information System is \_\_\_\_\_.

- (a) Communication
- (b) Transformation
- (c) Integration
- (d) Substitution

**(Q-5).** Which of the following is not an advantage of Enterprise Information System?

- (a) Increases Business Productivity
- (b) Increases Operational Efficiency
- (c) Increases Product Development Cycle Time
- (d) Results in Cost Savings

**(Q-6).** Consider the following statements about the Enterprise Information System (EIS):

- (i) Defined as a kind of information system which improves the business processes by transformation
- (ii) One of the advantages of EIS could be it increases operational efficiency
- (iii) One of the reasons of the emergence of EIS is that data is concentrated into few information system
- (iv) EIS collects data from various critical business processes and stores it in a single system

Which of the above statements are correct?

- (a) (i), (ii) & (iii) Only
- (b) (ii) & (iv) Only
- (c) (ii), (iii) & (iv) Only
- (d) (i) & (iii) Only

**(Q-7).** Which of the following is not an objective of Enterprise Information Systems?

- (a) Reduce service cycles
- (b) Identify manual processes
- (c) Reduce costs
- (d) Increase operational efficiency

**(Q-8).** From a business perspective, \_\_\_\_\_ is a coordinated and standardized flow of activities performed by people or machines, which can traverse functional or departmental boundaries to achieve a business objective and creates value for internal or external customers:

- (a) Operational Process
- (b) Business Process Flow
- (c) Process
- (d) Accounting Process

**(Q-9).** Consider the following steps involved in the management of process:

- (i) Defining the process and the steps involved therein
- (ii) Ensure standardization of and adherence to the process throughout the organization
- (iii) Performance measures are established to improve the process
- (iv) Mapping the task involved in the process

List the above steps in the correct order:

- (a) (i), (ii), (iii), (iv)
- (b) (i), (iv), (iii), (ii)
- (c) (ii), (iii), (iv), (i)
- (d) (i), (iv), (ii), (iii)

**(Q-10).** \_\_\_\_\_ views an organization as a system of interlinked processes whereas \_\_\_\_\_ considers the organizations made of departments.

- (a) Process structure, Function structure
- (b) Function structure, Process structure
- (c) Team structure, Process structure
- (d) Process structure, Team structure

**(Q-11).** Consider the following aspects about the process oriented organisational structure:

- (i) Business Process is a set of activities or tasks that are performed in coordination to realize a business goal
- (ii) Process oriented structure is subject to departmental boundaries



(iii) In process-oriented structure, optimization view is department specific

(iv) Process performed by one organisation could interact with the process performed by the other organisation

Which of the above statements are correct?

(a) Point (i), (ii) & (iii) only

(b) Point (i) & (iii) only

(c) Point (ii), (iii) & (iv) only

(d) Point (i) & (iv) only

**(Q-12).** Consider the following aspects about the function oriented organisational structure:

(i) Coordination and communication are easy in the function-oriented structure

(ii) Is subject to departmental boundaries

(iii) In function-oriented structure, optimization view is department specific

(iv) Function oriented structure is subject to end to end responsibility

Which of the above statements are correct?

(a) Point (i), (ii) & (iii) only

(b) Point (ii) & (iii) only

(c) Point (ii), (iii) & (iv) only

(d) Point (i) & (iv) only

**(Q-13).** Consider the following aspects about the process oriented organisational structure:

(i) Coordination is easy to build and maintain in the process-oriented structure

(ii) Process oriented structure is headed by the functional executive

(iii) In process-oriented structure, optimization view is process specific

(iv) Process performed by one organisation is always subject to that organisation itself

Which of the above statements are correct?

(a) Point (i), (ii) & (iii) only

- (b) Point (i) & (iii) only
- (c) Point (ii), (iii) & (iv) only
- (d) Point (i) & (iv) only

**(Q-14).** Key figure in process-oriented structure is \_\_\_\_\_, & in function-oriented structure is \_\_\_\_\_.

- (a) Team Head, Process Head
- (b) Functional Head, Process Owner
- (c) Team Head, Process Owner
- (d) Process Owner, Functional Executive

**(Q-15).** Which of the following statement is correct about the function-oriented structure?

- (a) Focus on end-to-end responsibility
- (b) More responsive to market changes
- (c) Focus on functional excellence
- (d) Improved communication & collaboration

**(Q-16).** Which of the following statement is incorrect about the process-oriented structure?

- (a) Focus on end-to-end responsibility
- (b) More responsive to market changes
- (c) Focus on functional excellence
- (d) Improved communication & collaboration

**(Q-17).** Work unit in the process-oriented structure is usually \_\_\_\_\_, & in function-oriented structure is \_\_\_\_\_.

- (a) Team, Process
- (b) Department, Process
- (c) Team, Department

(d) Department, Team

**(Q-18).** Optimization view in the process-oriented structure is \_\_\_\_\_, & in function-oriented structure is \_\_\_\_\_.

- (a) Process Specific, Function Specific
- (b) Function Specific, Process Specific
- (c) Team Specific, Department Specific
- (d) Department Specific, Team Specific

**(Q-19).** Which of the following is the first step involved in the accounting cycle?

- (a) Journal
- (b) Source Document
- (c) Adjustments
- (d) Financial statement

**(Q-20).** Consider the first four steps involved in the accounting process flow:

- (i) Trial Balance
- (ii) Source Document
- (iii) Journal
- (iv) Ledger

List the above steps in the correct order:

- (a) (i), (ii), (iii), (iv)
- (b) (i), (iv), (iii), (ii)
- (c) (ii), (iii), (iv), (i)
- (d) (ii), (iv), (i), (iii)

**(Q-21).** Consider the last four steps involved in the accounting process flow:

- (i) Financial statement

- (ii) Adjusted Trial balance
- (iii) Closing Entries
- (iv) Adjustments

List the above steps in the correct order:

- (a) (i), (ii), (iii), (iv)
- (b) (i), (iv), (iii), (ii)
- (c) (ii), (iii), (iv), (i)
- (d) (iv), (ii), (iii), (i)

**(Q-22).** There are total \_\_\_\_\_ involved in the accounting process flow.

- (a) Six Steps
- (b) Seven Steps
- (c) Eight Steps
- (d) Steps varies according to situation

**(Q-23).** Which of the following is the first step involved in the business process cycle in Manufacturing Industry?

- (a) Fixed Assets
- (b) Purchase and Payables
- (c) Production and Inventory
- (d) Revenue and Receivables

**(Q-24).** There are total \_\_\_\_\_ involved in the business process cycle in Manufacturing Industry.

- (a) Five Steps
- (b) Seven Steps
- (c) Six Steps

(d) Steps varies according to situation

**(Q-25).** Consider the first four steps involved in the business process cycle in Manufacturing Industry:

(i) Fixed Assets

(ii) Purchase and Payables

(iii) Production and Inventory

(iv) Revenue and Receivables

List the above steps in the correct order:

(a) (ii), (i), (iii), (iv)

(b) (ii), (iv), (iii), (i)

(c) (ii), (iii), (iv), (i)

(d) (ii), (iv), (i), (iii)

**(Q-26).** Consider the last four steps involved in the business process cycle in Manufacturing Industry:

(i) Fixed Assets

(ii) Financial Statement Preparation and Presentation

(iii) Payroll

(iv) Revenue and Receivables

List the above steps in the correct order:

(a) (iv), (i), (iii), (ii)

(b) (iv), (ii), (iii), (i)

(c) (ii), (iii), (iv), (i)

(d) (ii), (iv), (i), (iii)

**(Q-27).** Business processes can be categorized in total \_\_\_\_\_ categories.



- (a) Two
- (b) Three
- (c) Four
- (d) Five

**(Q-28).** Which of the following is not a major category of Business processes?

- (a) Operational
- (b) Support
- (c) Management
- (d) Legal

**(Q-29).** Another name of operational process is \_\_\_\_\_ and supporting process is \_\_\_\_\_.

- (a) Secondary Process, Primary Process
- (b) Primary Process, Secondary Process
- (c) Basic Process, Advanced Process
- (d) Initial Process, Improved Process

**(Q-30).** Budgeting Process is most likely to be a \_\_\_\_\_.

- (a) Operational Process
- (b) Support Process
- (c) Management Process
- (d) Organisational Process

**(Q-31).** Human Resource Process, Accounting Process etc. are most likely to be \_\_\_\_\_.

- (a) Operational Process
- (b) Support Process

- (c) Management Process
- (d) Organisational Process

**(Q-32).** \_\_\_\_\_ deals with the core business and value chain and deliver value to the customer by helping to produce a product or service.

- (a) Operational Process
- (b) Support Process
- (c) Management Process
- (d) Organisational Process

**(Q-33).** Hiring the right people for the right job \_\_\_\_\_.

- (a) Is of little or no relevance for the enterprise
- (b) has a direct impact on the efficiency of the enterprise
- (c) Is particularly useful in the early stage of life cycle
- (d) None of the above

**(Q-34).** Order to Cash (O2C) Process, Procure to Pay (P2P) Process etc. are most likely to be \_\_\_\_\_.

- (a) Operational Process
- (b) Support Process
- (c) Management Process
- (d) Organisational Process

**(Q-35).** \_\_\_\_\_ back the core processes and functions of an organization and do not provide value to customers directly.

- (a) Operational Process
- (b) Support Process
- (c) Management Process

(d) Organisational Process

**(Q-36).** \_\_\_\_\_ measure, monitor and control activities related to business procedures & systems.

(a) Operational Process

(b) Support Process

(c) Management Process

(d) Organisational Process

**(Q-37).** Internal control process, strategic planning process, governance, capacity management process etc. are most likely to be \_\_\_\_\_.

(a) Operational Process

(b) Support Process

(c) Management Process

(d) Organisational Process

**(Q-38).** Consider the following aspects about the operational process:

(i) Order to Cash or O2C Process is the part of Operational Process

(ii) HR Process is not the part of Operational Process

(iii) These processes do not provide value to customers directly

(iv) These processes represent essential business activities that accomplish business objectives

Which of the above statements are correct?

(a) Point (i), (ii) & (iv) only

(b) Point (i) & (iii) only

(c) Point (ii), (iii) & (iv) only

(d) Point (i) & (iv) only

**(Q-39).** Consider the following aspects about the supporting process:

- (i) Procure to Pay or P2P Process is not the part of Supporting Process
- (ii) These processes affect the efficiency of the primary process
- (iii) Provide value to customers directly
- (iv) These processes support the core processes and functions within an organization

Which of the above statements are correct?

- (a) Point (i), (ii) & (iv) only
- (b) Point (i) & (iii) only
- (c) Point (ii), (iii) & (iv) only
- (d) Point (i) & (iv) only

**(Q-40).** Consider the following aspects about the management process:

- (i) Strategic planning, Budgeting process etc. is the part of Management Process
- (ii) These processes have a direct impact on the efficiency of the enterprise
- (iii) These processes provide value to customers directly
- (iv) These processes measure, monitor and control activities related to business procedures and systems

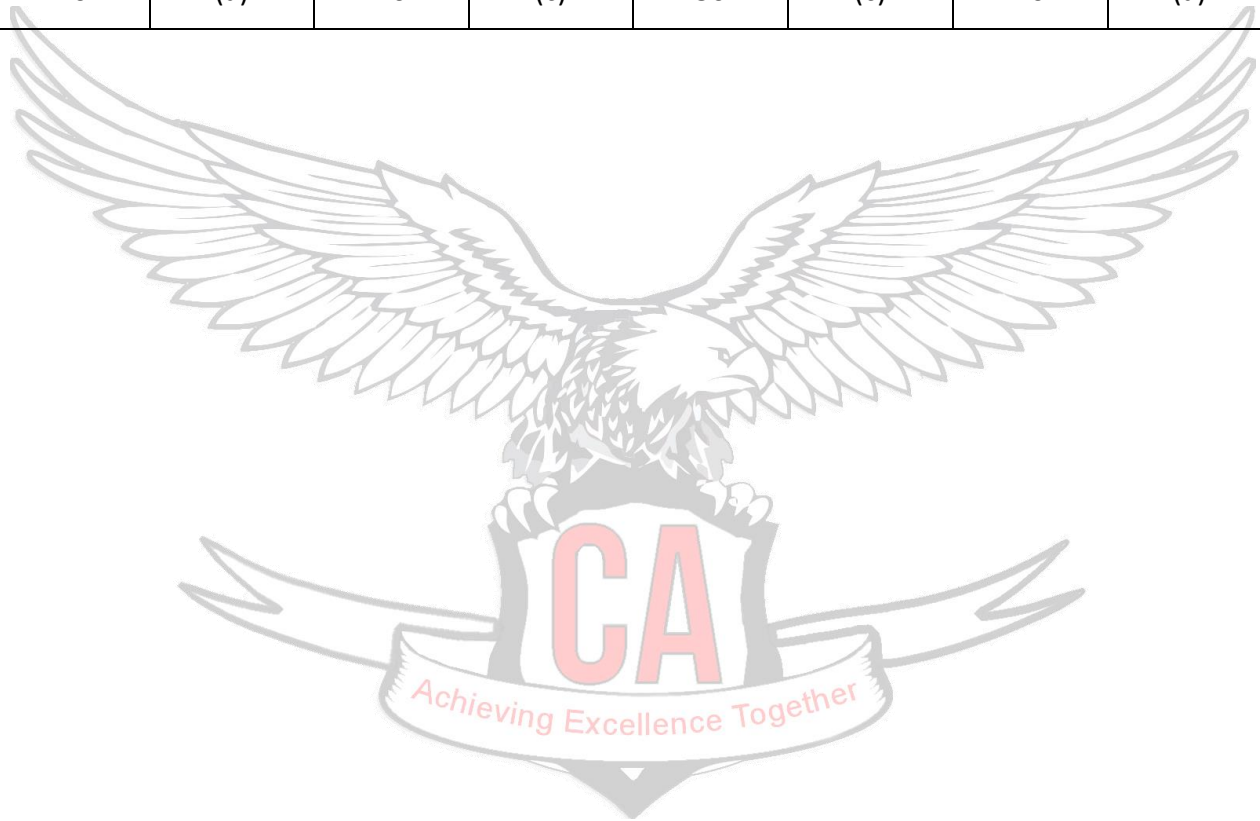
Which of the above statements are correct?

- (a) Point (i), (ii) & (iv) only
- (b) Point (i) & (iii) only
- (c) Point (ii), (iii) & (iv) only
- (d) Point (i) & (iv) only

**Answers to the multiple choice questions:**

1	(d)	11	(d)	21	(d)	31	(b)
2	(d)	12	(b)	22	(c)	32	(a)

3	(c)	13	(b)	23	(b)	33	(b)
4	(c)	14	(d)	24	(c)	34	(a)
5	(c)	15	(c)	25	(c)	35	(b)
6	(b)	16	(c)	26	(a)	36	(c)
7	(b)	17	(c)	27	(b)	37	(c)
8	(c)	18	(a)	28	(d)	38	(a)
9	(b)	19	(b)	29	(b)	39	(a)
10	(a)	20	(c)	30	(c)	40	(a)





## Ch-2 Financial and Accounting Systems

### Question 1

Explain the following in brief:

Business Intelligence (BI)

**Answer: Business Intelligence (BI):** Business Intelligence (BI) is a technology-driven process for analyzing data and presenting actionable information to help corporate executives, business managers and other end users make more informed business decisions. BI encompasses a wide variety of tools, applications and methodologies that enable organizations to collect data from internal systems and external sources, prepare it for analysis, develop and run queries against the data, and create reports, dashboards and data visualizations to make the analytical results available to corporate decision makers as well as operational workers.

The potential benefits of business intelligence programs include accelerating and improving decision making; optimizing internal business processes; increasing operational efficiency; driving new revenues; and gaining competitive advantages over business rivals. BI systems can also help companies identify market trends and spot business problems that need to be addressed.

### Question 2

A manufacturing company is implementing an ideal ERP software, where a single database is being utilized and it contains all the data for various software modules. Identify the modules of an ideal ERP software along with their functions.

**Answer:** 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 analyse data; tools to extract, transform and load data into the repository; and to manage the data dictionary.

### Question 3

Explain the significance of Front End and Back End in a software.

#### Answer:

**Front End of a Software:** It is part of the overall software which interacts with the user who is using the software. For example - If a user wants to have some information from the Balance

Sheet; user will interact with Front End part of the software and request front end to generate the report.

**Back End of a Software:** It is a part of the overall software which does not directly interact with the user, but interact with Front End only. Front End will receive the instruction from user and pass it on to the back end. Back End will process the data, generate the report and send it to the front end. Front end will then display the information to user.

#### Question 4

Answer the following in brief:

Define 'Data Analytics'.

**Answer:**

**Data Analytics:** It is the process of examining data sets to draw conclusions about the information they contain, increasingly with the aid of specialized systems and software. Data Analytics predominantly refers to an assortment of applications, from basic Business Intelligence (BI), Reporting and Online Analytical Processing (OLAP) to various forms of advanced analytics. Data Analytics technologies and techniques are widely used in commercial industries to enable organizations to make more-informed business decisions and by scientists and researchers to verify or disprove scientific models, theories and hypotheses.

#### Question 5

A business organization is planning to switch on to an integrated software for accounting as well as tax compliance instead of separate software for accounting and tax compliance. Being a consultant to the management of this organization, you are required to advise them on various Pros and Cons of having single software for both the accounting and tax compliance.

**Answer:** Single software for both the Accounting and Tax Compliance must be an integrated system. **Pros** of having single integrated software for both the Accounting and Tax Compliance as compared to only a Tax Compliance Software are as follows:

- **More Accurate:** As single software for both Accounting and Tax Compliance is an integrated system, hence accounting data and tax compliance data shall always be same and there is no need to transfer data to compliance software and reconcile the data. However, in only tax compliance software, reconciliation with accounting data is needed and possibility of mismatch of data between two systems is always there.
- **Lesser Time and efforts required:** The time required to transfer data to compliance integrated software is zero whereas it's relatively more in the separate software wherein data from accounting software need to put in for preparation of returns that may take extra time and efforts.

**Cons** of having such integrated software for both the Accounting and Tax Compliance as compared to only a Tax Compliance Software are as follows:

- **Less ease of software operation:** In an integrated system, everything is connected with other and making changes at one place may affect other aspects also. However, single software is less complicated and bound to be easy.
- **Less features and facilities for Tax Compliance:** As the integrated is system is not an exclusive system for tax compliance, it may have limited features for tax compliance. Whereas single system is an exclusive and specifically designed system for tax compliance, more features and facilities shall exist in this system.
- **More cost:** If tax compliance feature is not available in accounting system, then to make the system integrated and getting it customized may require some amount of cost which may be higher than buying separate software. Whereas specific purpose software shall have less complications and the cost also shall be less.

## Question 6

'Web Applications' are one of the two ways of using a software including financial and Accounting Software and now-a-days, the use of web applications is increasing rapidly. You, being an IT consultant, have to list out some of the advantages and disadvantages of using web applications.

**Answer:** Advantages of using Web applications are as follows:

- **Installation and Maintenance:** As software is installed on only one computer, i.e. a web server, it need not be installed on each computer. Hence, installation on user computer is not required and maintenance and updating of software becomes extremely easy.
  - **Accessibility:** As software is not installed on the hard disc of user's computer and it is used through browser and internet, it can be used from any computer in the world. Access to the software becomes very easy.
  - **Mobile Application:** Using mobile application becomes very easy as data is available 24 x 7.
- Disadvantages of using Web applications are as follows:
- **Data Storage:** Data is not stored in the user's server computer. It is stored on a web server.
  - Hence user will not have any control over the data.
  - **Data Security:** Data security is a big challenge in case of web application as the data is not in control of the user or owner of data. It is maintained on a web server.
  - **Performance:** As data is picked from web server using internet, speed of operation may be slower in web applications.
  - **Flexibility:** Web applications do not even compare to the flexibility of desktop applications. If a user wants to write a web application that basically interacts with the user's hardware, installed/desktop applications are preferable.

## Question 7



Customer Relationship Management (CRM) is a system which aims at improving relationship with customers. Briefly explain any four key benefits of CRM module of ERP

**Answer:** Key benefits of a Customer Relationship Management (CRM) module of ERP are as under:

- **Improved customer relations:** One of the prime benefits of using a CRM is obtaining better customer satisfaction. By using this strategy, all dealings involving servicing, marketing, and selling out products to the customers can be carried out in an organized and systematic way. Better services can be provided to customers through improved understanding of their issues and this in turn helps in increasing customer loyalty and decreasing customer agitation. In this way, continuous feedback from the customers regarding the products and services can be received. It is also possible that the customers may recommend the product to their acquaintances, when efficient and satisfactory services are provided.
- **Increase customer revenues:** By using a CRM strategy for any business, the revenue of the company can be increased. Using the data collected, marketing campaigns can be popularized in a more effective way. With the help of CRM software, it can be ensured that the product promotions reach a different and brand new set of customers, and not the ones who had already purchased the product, and thus effectively increase the customer revenue.
- **Maximize up-selling and cross-selling:** A CRM system allows up-selling which is the practice of giving customers premium products that fall in the same category of their purchase. The strategy also facilitates cross selling which is the practice of offering complementary products to customers, based on their previous purchases. This is done by interacting with the customers and getting an idea about their wants, needs, and patterns of purchase. The details thus obtained will be stored in a central database, which is accessible to all company executives. So, when an opportunity is spotted, the executives can promote their products to the customers, thus maximizing up-selling and cross selling.

- **Better internal communication:** Following a CRM strategy helps in building up better communication within the company. The sharing of customer data between different departments will enable them to work as a team. This is better than functioning as an isolated entity, as it will help in increasing the company's profitability and enabling better service to customers.
- **Optimize marketing:** CRM enables to understand the customer needs and behavior in a better way, thereby allowing any enterprise to identify the correct time to market its product to the customers. CRM will also give an idea about the most profitable customer groups, and by using this information, similar prospective groups, at the right time will be targeted. In this way, marketing resources can be optimized efficiently and time is not wasted on less profitable customer groups.

#### Question 8

A business organization is shifting from traditional accounting system to computerized accounting system. The organization needs to store the data that is relatively permanent and not expected to change frequently in accounting system. As a financial expert, suggest any two types of such data in accounting system.

OR

Major feature of an ERP system is central database. Which are the options possible to different users while assigning access to it?

**Answer:**

(a) Master data is relatively permanent data that is not expected to change again and again. It may change, but not again and again. In accounting systems, there may be following type of master data.

- **Accounting Master Data:** This includes names of ledgers, groups, cost centers, accounting voucher types, etc. E.g. Capital Ledger is created once and not expected to change frequently. Similarly, all other ledgers like sales, purchase, expenses and income ledgers are created once and not expected to change again and again. Opening balance carried forward from previous year to next year is also a part of master data and not expected to change.
- **Inventory Master Data:** This includes stock items, stock groups, godowns, inventory voucher types, etc. Stock item is something which bought and sold for business purpose, trading goods. E.g. If a person is into the business of dealing in white goods, stock items shall be Television, Fridge, Air Conditioner, etc. For a person running a medicine shop, all types of medicines shall be stock items for him/her.
- **Payroll Master Data:** Payroll is a system for calculation of salary and recording of transactions relating to employees. Master data in case of payroll can be names of employees, group of employees, salary structure, pay heads, etc. These data are not expected to change frequently. E.g. Employee created in the system will remain as it is for a longer period of time, his/her salary structure may change but not frequently, pay heads associated with his/ her salary structure will be relatively permanent.
- **Statutory Master Data:** This is a master data relating to statute/law which may be different for different type of taxes. E.g. Goods and Service Tax (GST), Nature of Payments for Tax Deducted at Source (TDS), etc. This data also shall be relatively permanent. We don't have any control on this data as statutory changes are made by Government and not by us. In case of change in tax rates, forms, categories; we need to update/change our master data.

**OR**

While assigning access to different users in an ERP System, following options are possible.

- **Create** – Allows to create data.
- **Alter** – Allows to alter data.

- **View** – Allows only to view data.
- **Print** – Allows to print data

### Question 9

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.

**Answer:** The Risks associated with various aspect of Enterprise Resource Planning (ERP) are given below:

- Data Access:** Data is stored centrally, and all the departments access the central data. This creates a possibility of access to non-relevant data.
- 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.
- Speed of Operation:** As data is maintained centrally, gradually the data size becomes more and more and it may reduce the speed of operation.
- Change in process:** As the overall system is integrated, a small change in process for one department may require lot of efforts and money.
- 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.

### Question 10

(i) What do you understand by Regulatory Compliance?

(ii) a. Write a brief description of three tier architecture of Application Software.

OR

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

**Answer:**

(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) (a) 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**

(b) 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

**Multiple choice questions:**

**(Q-1).** A financial and accounting system forms an integral part of any business organisation and generally considered as its \_\_\_\_\_.

- (a) Heart
- (b) Backbone

- (c) Kidney
- (d) Ears & Noses

**(Q-2).** The \_\_\_\_\_ of the financial and accounting system is concerned with the preparation of Balance Sheet and Profit & Loss Account easily without putting much time & efforts.

- (a) Employee's view
- (b) Accountant's view
- (c) Auditor's view
- (d) Owner's view

**(Q-3).** The \_\_\_\_\_ of the financial & accounting system is concerned with the correctness of Balance Sheet and Profit & Loss Account at any point of time.

- (a) Employee's view
- (b) Accountant's view
- (c) Auditor's view
- (d) Owner's view

**(Q-4).** The \_\_\_\_\_ of the financial & accounting system is concerned with the availability of right information at right time for right decision making.

- (a) Employee's view
- (b) Accountant's view
- (c) Auditor's view
- (d) Owner's view

**(Q-5).** All system generally have:

- (a) Inputs, outputs and feedback mechanisms
- (b) Boundaries that are usually defined by the system observer

- (c) Mechanism to maintain an internal steady-state despite changing external environment
- (d) All of the above

**(Q-6).** In this highly dynamic and evolving business world, \_\_\_\_\_ are supposed to be experts in both accounting as well as accounting systems.

- (a) Auditors
- (b) Accountants
- (c) Managers
- (d) Chartered Accountants

**(Q-7).** In any financial and accounting system, data is stored as \_\_\_\_\_ & \_\_\_\_\_.

- (a) Application data, Transaction data
- (b) Master data, Non-master data
- (c) Temporary data, Permanent data
- (d) Accounting data, Finance data

**(Q-8).** Mr. A, B & C are three friends who open a partnership firm with a fixed capital of ₹5,00,000 each. Any drawings made or profit etc. earned by the partners will be adjusted in their respective current accounts. In this case the Fixed Capital Ledger of the partner is most likely to be classified into \_\_\_\_\_.

- (a) Partner's Master Data
- (b) Partner's Non-Master Data
- (c) Employee Master Data
- (d) Employee Non-Master Data

**(Q-9).** In any financial and accounting system, \_\_\_\_\_ is relatively \_\_\_\_\_ that is not expected to change again and again.

- (a) Application data, Permanent data
- (b) Master data, Temporary data
- (c) Master data, Permanent data
- (d) Accounting data, Permanent data

**(Q-10).** Mr. P, Q & R are three friends who decided to open a partnership firm with a fixed capital of ₹8,00,000 each. Any drawings made by the partners or profits, interest etc. earned by the partners will be adjusted in their respective current accounts. In this case the current account of the partner is most likely to be classified into \_\_\_\_\_.

- (a) Partner's Master Data
- (b) Partner's Non-Master Data
- (c) Employee Master Data
- (d) Employee Non-Master Data

**(Q-11).** In any financial and accounting system, \_\_\_\_\_ is relatively \_\_\_\_\_ and expected to change frequently.

- (a) Non-Master data, Permanent data
- (b) Master data, Non-Temporary data
- (c) Non-Master data, Non-Permanent data
- (d) Accounting data, Permanent data

**(Q-12).** Details like stock items, stock groups, godowns, inventory voucher types etc. used by the entity is usually stored in \_\_\_\_\_.

- (a) Accounting Master Data
- (b) Statutory Master Data
- (c) Payroll Master Data
- (d) Inventory Master Data

**(Q-13).** Details like Goods & Services Tax Identification No., Tax Deduction & Collection No. etc. used by entity is stored in \_\_\_\_\_.

- (a) Accounting Master Data
- (b) Statutory Master Data
- (c) Payroll Master Data
- (d) Inventory Master Data

**(Q-14).** Mr. Anmol is required to make a master data entry which is already not available in the system. Considering this case, which of the following statement could act as a remedy?

- (a) Type the master data entry and proceed
- (b) Ignore that entry
- (c) First create that master data entry
- (d) No situation like this can ever arise

**(Q-15).** Mr. Maanak has limited knowledge of accountancy but has recently join an organisation as an accountant. The company has transferred fund from our one bank account to our own another bank account. For recording this transaction, \_\_\_\_\_ voucher is used.

- (a) Contra
- (b) Journal
- (c) Transfer
- (d) Notional

**(Q-16).** In the financial and accounting system, user is forced to select \_\_\_\_\_ from the available list to avoid confusion while preparing reports.

- (a) Master data
- (b) Non-master data
- (c) Both (a) & (b)
- (d) None of the above



**(Q-17).** The Accounting master data of any entity is most likely to contain which of the following details?

- (a) Ledgers used by the company
- (b) Stock items company deals in
- (c) Salary details of company employees
- (d) GST details of the company

**(Q-18).** Consider this statement “employees created in the system will remain as it is for a longer period of time, structure may change but not frequently”. This statement is associated to which of the following type of data?

- (a) Accounting Master Data
- (b) Payroll Transaction Data
- (c) Payroll Master Data
- (d) Accounting Transaction Data

**(Q-19).** Which of the following is most likely to be a master data of an individual?

- (a) Age of the individual
- (b) Weight of the individual
- (c) Parent’s name of the individual
- (d) Likes & dislikes of the individual

**(Q-20).** Mr. Aayush has limited knowledge of accountancy and has recently join an organisation as a chief accountant. The company has transferred some of its trading stock from one location to another. For recording this transaction, \_\_\_\_\_ voucher is used.

- (a) Stock Journal
- (b) Transfer Journal
- (c) Contra

(d) Generally, not recorded

**(Q-21).** \_\_\_\_\_ entry is selected from the available list while \_\_\_\_\_ entry is typed by the user.

(a) Master Data, Non-Master Data

(b) Financial Data, Accounting Data

(c) Master Data, Standing Data

(d) Non-Master Data, Master Data

**(Q-22).** Consider the following statements about the master data of financial and accounting system:

(i) Payroll Master Data is usually the part of the financial and accounting system of the entity

(ii) It is relatively permanent data that is expected to change frequently

(iii) As far as possible, entity should effective controls over the master data entry

(iv) Master data is generally not typed by user but selected from the available list

Which of the above statements are correct?

(a) (i), (ii) & (iii) Only

(b) (ii) & (iv) Only

(c) (i), (iii) & (iv) Only

(d) (i) & (iii) Only

**(Q-23).** In the accounting language, a \_\_\_\_\_ is a documentary evidence of a transaction.

(a) Master Data

(b) Voucher

(c) Transaction Data

(d) Transaction

**(Q-24).** Generally, \_\_\_\_\_ voucher is used to record all types of payment made to outsiders and \_\_\_\_\_ voucher is used to record all receipts from the outside.

- (a) Payment, Sales
- (b) Purchase, Sale
- (c) Payment, Receipt
- (d) Receipt, Payment

**(Q-25).** For recording all the non-cash or bank transactions like depreciation, amortization etc. which of the following voucher is used?

- (a) Contra
- (b) Journal
- (c) Stock Journal
- (d) Payment

**(Q-26).** For recording transactions like cash deposit in the bank, \_\_\_\_\_ voucher is used but for recording the cash transferred from one location to another, \_\_\_\_\_ voucher is used?

- (a) Contra, Journal
- (b) Journal, Contra
- (c) Journal, Journal
- (d) Contra, Contra

**(Q-27).** For recording the physical receipt of goods purchased from a vendor, entity generally uses \_\_\_\_\_ voucher.

- (a) Receipt Journal
- (b) Receipt Stock
- (c) Receipt Order
- (d) Receipt Note

**(Q-28).** Which of the following is not an attribute of Information?

- (a) Availability
- (b) Mode and Format
- (c) Completeness
- (d) Inadequacy

**(Q-29).** In the computerized financial and accounting system, \_\_\_\_\_ and \_\_\_\_\_ ledger have the credit balance.

- (a) Assets, Liabilities
- (b) Income, Expenses
- (c) Assets, Expenses
- (d) Liabilities, Income

**(Q-30).** For recording physical delivery of goods sold to a customer, entity uses \_\_\_\_\_ voucher.

- (a) Delivery Journal
- (b) Sold Stock
- (c) Sales Order
- (d) Delivery Note

**(Q-31).** There are total \_\_\_\_\_ steps involved in the accounting flow of the accounting and financial software system.

- (a) Five
- (b) Six
- (c) Seven
- (d) Eight

**(Q-32).** In the accounting flow mechanism of the accounting and financial software system, \_\_\_\_\_ steps are usually performed by the human element.

- (a) First Four
- (b) First two
- (c) First three
- (d) None of the

**(Q-33).** In the accounting flow mechanism of the accounting and financial software system, \_\_\_\_\_ steps are usually performed by the human element.

- (a) Last Three
- (b) Last Four
- (c) Last Five
- (d) All of the

**(Q-34).** For recording the physical receipt of goods purchased from a vendor, entity generally uses \_\_\_\_\_ voucher.

- (a) Receipt Journal
- (b) Receipt Stock
- (c) Receipt Order
- (d) Receipt Note

**(Q-35).** In the computerized financial and accounting system, \_\_\_\_\_ and \_\_\_\_\_ ledger have the debit balance.

- (a) Assets, Liabilities
- (b) Income, Expenses
- (c) Assets, Expenses
- (d) Liabilities, Income

**(Q-36).** Which of the following statement is incorrect about the voucher numbering system?

- (a) Proper voucher numbering also improves the accounting efficiency in the entity
- (b) All vouchers must be numbered serially
- (c) All vouchers should be recorded in the system in the chronological order
- (d) Different types of vouchers should have a common numbering system

**(Q-37).** Consider the following statements about the vouchers used in accounting system:

- (i) Journal voucher is used to record the transfer of cash from one location to another
- (ii) Purchase order voucher is usually the part of the inventory module of the financial and accounting system
- (iii) Sales voucher is the part of inventory module which is used to record the trading sales made by the business
- (iv) For depositing and withdrawing cash from the bank, contra vouchers are used

Which of the above statements are correct?

- (a) (i), (ii) & (iii) Only
- (b) (ii) & (iv) Only
- (c) (i), (iii) & (iv) Only
- (d) (i) & (iii) Only

**(Q-38).** Consider the following statements about the voucher numbering:

- (i) As far as possible, voucher number must be unique for every voucher
- (ii) Every voucher type should have common numbering system for easy identification and proper recording in the system
- (iii) A voucher number may have prefix or suffix or both
- (iv) Vouchers can be recorded in the system in the discretionary order i.e. voucher issued earlier should have earlier number

Which of the above statements are correct?



- (a) (i), (ii) & (iii) Only
- (b) (ii) & (iv) Only
- (c) (i), (iii) & (iv) Only
- (d) (i) & (iii) Only

**(Q-39).** Consider the following statements about the accounting flow mechanism of the accounting and financial software system:

- (i) Voucher entry task may either be performed manually or can also be automated
- (ii) Posting, Balancing and Trial Balance task is usually performed manually to ensure high accuracy and better controllability
- (iii) Voucher entries are carried out after the balancing task is done
- (iv) Profit and loss account and balance sheet is the output of accounting flow mechanism

Which of the above statements are correct?

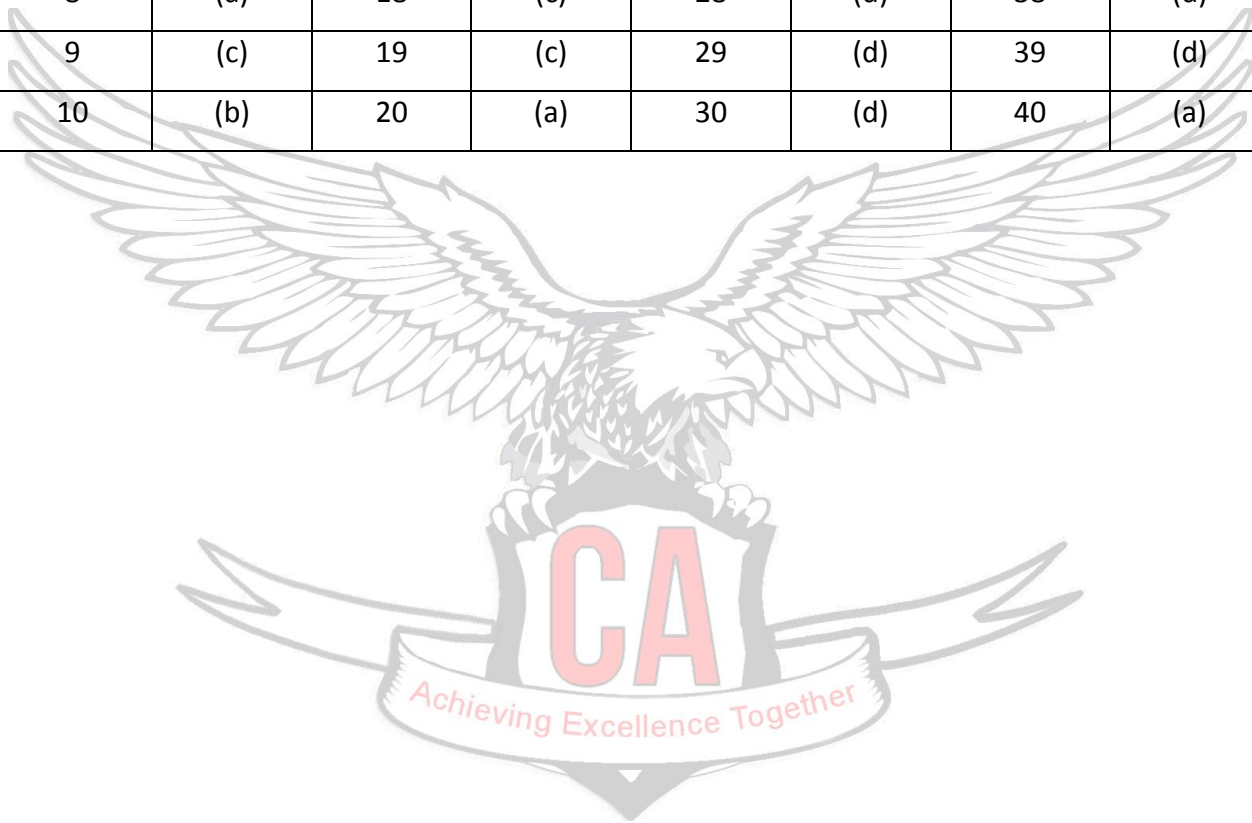
- (a) (i), (ii) & (iii) Only
- (b) (ii) & (iv) Only
- (c) (i), (iii) & (iv) Only
- (d) (i) & (iv) Only

**(Q-40).** There are total \_\_\_\_\_ ledgers groups in the computerized financial and accounting system.

- (a) Four
- (b) Five
- (c) Six
- (d) Seven

**Answers to the multiple choice questions:**

1	(b)	11	(c)	21	(a)	31	(c)
2	(b)	12	(d)	22	(c)	32	(b)
3	(c)	13	(b)	23	(b)	33	(c)
4	(d)	14	(c)	24	(c)	34	(d)
5	(d)	15	(a)	25	(b)	35	(c)
6	(d)	16	(a)	26	(d)	36	(d)
7	(b)	17	(a)	27	(d)	37	(b)
8	(a)	18	(c)	28	(d)	38	(d)
9	(c)	19	(c)	29	(d)	39	(d)
10	(b)	20	(a)	30	(d)	40	(a)



## Ch-3 Information Systems and Its Components

### Question 1

Explain Line Error Control in brief:

**Answer:**

**Line Error Control:** Whenever data is transmitted over a communication line in a telecommunication network, an error may occur because of attenuation distortion or noise that occurs on the line. These line errors must be detected and corrected.

- **Error Detection:** The errors can be detected by either using a loop (echo) check or building some form of redundancy into the message transmitted.
- **Error Correction:** When line errors have been detected, they must then be corrected using either forward error correcting codes or backward error correcting codes.

### Question 2

Data Warehouse extracts data from one or more of the organization's databases and loads it into another database for storage and analysis purpose. As a Data Warehouse Manager, determine the design criteria, which should be met while designing Date Warehouse.

**Answer:** The Data Warehouse extracts data from one or more of the organization's databases and loads it into another database for storage and analysis purpose. A data warehouse should be designed so that it meets the following criteria:

- It uses non-operational data. This means that the data warehouse is using a copy of data from the active databases that the company uses in its day- to-day operations, so the data warehouse must pull data from the existing databases on a regular, scheduled basis.
- The data is time-variant. This means that whenever data is loaded into the data warehouse, it receives a time stamp, which allows for comparisons between different time periods.

- The data is standardized. Because the data in a data warehouse usually comes from several different sources, it is possible that the data does not use the same definitions or units. For the data warehouse to match up different formats, a standard format (for example – date) would have to be agreed upon and all data loaded into the data warehouse would have to be converted to use this standard format. This process is called Extraction-Transformation-Load (ETL).
- There are two approaches to follow when designing a data warehouse:
  - ✓ The **Bottom-Up Approach** starts by creating small data warehouses called Data Marts to solve specific business problems. As these data marts are created, they can be combined into a larger data warehouse.
  - ✓ The **Top-Down Approach** suggests that we should start by creating an enterprise-wide data warehouse and then, as specific business needs are identified, create smaller data marts from the data warehouse.

### Question 3

Explain briefly the objectives of Information System's Auditing.

**Answer:** The major objectives of Information Systems (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.

#### Question 4

Explain various types of Data Coding Errors.

**Answer:**

**Data Coding Errors:** Data Coding errors can cause serious problems in data processing if they go undetected. Two types of errors - Transcription and Transposition errors can corrupt a data code and cause processing errors.

a. **Transcription Errors:** It is a special type of data entry error that is commonly made by human operators or by Optical Character Recognition (OCR) programs. These falls into three classes: Addition errors, Truncation errors and Substitution errors.

b. **Transposition Errors:** It is a simple error of data entry that occur when two digits that are either individual or part of larger sequence of numbers are reversed (Transpose) when posting a transaction. There are two types of transposition errors: Single transposition and Multiple transposition errors.

#### Question 5

Explain the term 'Cryptography'.

**Answer: Cryptography:** It deals with programs for transforming data into cipher text that are meaningless to anyone, who does not possess the authentication to access the respective system resource or file. A cryptographic technique encrypts data (clear text) into cryptograms

(cipher text) and its strength depends on the time and cost to decipher the cipher text by a cryptanalyst. Three techniques of cryptography are Transposition (permute the order of characters within a set of data), Substitution (replace text with a key-text) and Product Cipher (combination of Transposition and Substitution).

### Question 6

Data that is waiting to be transmitted are liable to unauthorized access called 'Asynchronous Attack'. Explain various types of Asynchronous attacks on data.

**Answer:**

Various types of Asynchronous Attacks on data are as follows:

- **Data Leakage:** This involves leaking information out of the computer by means of dumping files to paper or stealing computer reports and tape.
- **Subversive Attacks:** These can provide intruders with important information about messages being transmitted and the intruder may attempt to violate the integrity of some components in the subsystem.
- **Wire-tapping:** This involves spying on information being transmitted over telecommunication network.
- **Piggybacking:** This is the act of following an authorized person through a secured door or electronically attaching to an authorized telecommunication link that intercepts and alters transmissions. This involves intercepting communication between the operating system and the user and modifying them or substituting new messages.

### Question 7



An operating system allows users and their applications to share and access common computer resources and execute a variety of activities. Hence, protecting operating system access is extremely crucial. Identify various steps through which protection of operating system access can be achieved.

**Answer:**

Protecting Operating System Access is extremely crucial and can be achieved using following steps:

- **Automated terminal identification:** This will help to ensure that a specified session could only be initiated from a certain location or computer terminal.
- **Terminal log-in procedures:** A log-in procedure is the first line of defense against unauthorized access as it does not provide unnecessary help or information, which could be misused by an intruder. When the user initiates the log-on process by entering user-id and password; the system compares the ID and password to a database of valid users and accordingly authorizes the log-in.
- **Access Token:** If the log on attempt is successful, the Operating System creates an access token that contains key information about the user including user-id, password, user group and privileges granted to the user. The information in the access token is used to approve all actions attempted by the user during the session. **Access Control List:** This list contains information that defines the access privileges for all valid users of the resource. When a user attempts to access a resource, the system compares his or her user-id and privileges contained in the access token with those contained in the access control list. If there is a match, the user is granted access.
- **Discretionary Access Control:** The system administrator usually determines who is granted access to specific resources and maintains the access control list. In distributed systems, resources may be controlled by the end-user in which they may be granted discretionary access control, which allows them to grant access privileges to other users. For example, the controller who is owner of the general ledger grants read only privilege to the budgeting

department while accounts payable manager is granted both read and write permission to the ledger.

- **User identification and authentication:** The users must be identified and authenticated in a foolproof manner. Depending on risk assessment, more stringent methods like Biometric Authentication or Cryptographic means like Digital Certificates should be employed.
- **Password management system:** An operating system could enforce selection of good passwords. Internal storage of password should use one-way hashing algorithms and the password file should not be accessible to users.
- **Use of system utilities:** System utilities are the programs that help to manage critical functions of the operating system e.g. addition or deletion of users. Obviously, this utility should not be accessible to a general user. Use and access to these utilities should be strictly controlled and logged.
- **Duress alarm to safeguard users:** If users are forced to execute some instruction under threat, the system should provide a means to alert the authorities.
- **Terminal time out:** Log out the user if the terminal is inactive for a defined period. This will prevent misuse in absence of the legitimate user.
- **Limitation of connection time:** Define the available time slot. Do not allow any transaction beyond this time. For example, no computer access after 8.00 p.m. and before 8.00 a.m. - or on a Saturday or Sunday.

### Question 8

A company XYZ is implementing the software using the program development life cycle methodology and applying control phases in parallel to the development phases to monitor the progress against plan. Being an IT developer, design the various phases and their controls for program development life cycle.

**Answer:**

The primary objective of Program Development Life Cycle phase within the System s Development Life Cycle is to produce or acquire and to implement high-quality programs. This includes the following phases:

- **Planning:** Techniques like Work Breakdown Structures (WBS), Gantt Charts and PERT (Program Evaluation and Review Technique) Charts can be used to monitor progress against plan.
- **Control:** The Control phase has two major purposes:
  - ✓ Task progress in various software life-cycle phases should be monitored against plan and corrective action should be taken in case of any deviations.
  - ✓ Control over software development, acquisition, and implementation tasks should be exercised to ensure that the software released for production use is authentic, accurate, and complete.
- **Design:** A systematic approach to program design, such as any of the structured design approaches or object-oriented design is adopted.
- **Coding:** Programmers must choose a module implementation and integration strategy like Top-down, Bottom-up and Threads approach; a coding strategy that follows the precepts of structured programming, and a documentation strategy to ensure program code is easily readable and understandable.
- **Testing:** These tests are to ensure that a developed or acquired program achieves its specified requirements. These are as follows:
  - i. **Unit Testing** – which focuses on individual program modules;
  - ii. **Integration Testing** – Which focuses in groups of program modules; and
  - iii. **Whole-of-Program Testing** – which focuses on whole program.

- **Operation and Maintenance:** Management establishes formal mechanisms to monitor the status of operational programs so maintenance needs can be identified on a timely basis. Three types of maintenance can be used are as follows:
  - i. **Repair Maintenance:** in which program errors are corrected;
  - ii. **Adaptive Maintenance:** in which the program is modified to meet changing user requirements; and
  - iii. **Perfective Maintenance:** in which the program is tuned to decrease the resource consumption

#### Question 9

Discuss the key activities, which require special attention for auditing the user access provisioning.

**Answer:** Auditing the user access provisioning process requires attention to several key activities that include the following:

- **Access request processes:** The IS auditor should identify all user access request processes and determine if these processes are used consistently throughout the organization.
- **Access approvals:** The IS auditor needs to determine how requests are approved and by what authority they are approved. The auditor should determine if system or data owners approve access requests, or if any accesses are ever denied.
- **New employee provisioning:** The IS auditor should examine the new employee provisioning process to see how a new employee's user accounts are initially set up. The auditor should determine if new employees' managers are aware of the access requests that their employees are given and if they are excessive.

- **Segregation of Duties (SoD):** The IS auditor should determine if the organization makes any effort to identify segregation of duties. This may include whether there are any SoD matrices in existence and if they are actively used to make user access request decisions.
- **Access reviews:** The IS auditor should determine if there are any periodic access reviews and what aspects of user accounts are reviewed; this may include termination reviews, internal transfer reviews, SoD reviews and dormant account reviews.

### Question 10

Explain any four examples of Segregation of Duties (SoD) controls.

#### Answer:

The examples of Segregation of Duties (SoD) Controls are as below:

- 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 are fund. In IT applications, transactions meeting certain criteria may require a manager's approval to be able to proceed.
- 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.
- 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 11

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?

#### Answer:

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.

**Multiple choice questions:**

**(Q-1).** \_\_\_\_\_ are raw and unorganized piece of information & do not convey any message as such.

- (a) Knowledge
- (b) Data
- (c) Information
- (d) Wisdom

**(Q-2).** \_\_\_\_\_ is the processed form of \_\_\_\_\_.

- (a) Knowledge, Wisdom
- (b) Data, Knowledge
- (c) Information, Data
- (d) Record, Wisdom

**(Q-3).** Which of the following is not an aspect to be considered by the organisations to manage its information in the proper manner?

- (a) Knowing its information needs
- (b) Organizing information in a meaningful way
- (c) Assuring information quality
- (d) Making it raw in nature

**(Q-4).** Processing involves transforming input into \_\_\_\_\_.

- (a) Record
- (b) Data
- (c) Information
- (d) Knowledge

**(Q-5).** Data is \_\_\_\_\_ while information is \_\_\_\_\_ & \_\_\_\_\_ for the entity.

- (a) Well organized, Meaningful, Useful
- (b) Useful, Meaningless, Useful
- (c) Unorganized, Meaningless, Useless
- (d) Unorganized, Meaningful, Useful

**(Q-6).** \_\_\_\_\_ is a group of related elements working for reaching a common goal by taking inputs, processing it & producing output and having the feedback and control mechanism.

- (a) Process
- (b) Function
- (c) Mechanism
- (d) Information System

**(Q-7).** In information system processing, \_\_\_\_\_ is an additional step.

- (a) Inputs
- (b) Processing
- (c) Output
- (d) Feedback & Control

**(Q-8).** In the information system processing, there are \_\_\_\_\_ main steps and \_\_\_\_\_ additional step.

- (a) Two, Two
- (b) Three, Two
- (c) Four, One
- (d) Three, One

**(Q-9).** \_\_\_\_\_ is not an important characteristic of computer-based Information System.

- (a) System is designed and developed to achieve a pre-determined objective
- (b) Goal of individual component is of higher priority than the goal of the entire system
- (c) If any component fails, it may affect the functioning of the entire system
- (d) The task performed by different components are integrated

**(Q-10).** Consider the following statements about the information system:

- (i) System can be defined as the group of non-related elements working together
- (ii) With the passage of time, information system is getting more and more crucial for the organisation
- (iii) Hardware, software are part of information system components
- (iv) People resource of information system is not as significant as other resources

Which of the above statements are correct?

- (a) (i), (ii) & (iii) Only
- (b) (ii) & (iv) Only
- (c) (i), (iii) & (iv) Only
- (d) (ii) & (iii) Only

**(Q-11).** Consider the following steps involved in the information system:

- (i) Output
- (ii) Feedback
- (iii) Input
- (iv) Processing
- (v) Control

The correct sequence will be:

- (a) (iii), (ii), (iv), (v), (i)
- (b) (iii), (iv), (i), (ii), (v)
- (c) (iii), (i), (iv), (ii), (v)
- (d) (iii), (ii), (v), (iv), (i)

**(Q-12).** Which of the following is the second last step involved in the information system processing?

- (a) Input
- (b) Processing

- (c) Output
- (d) Feedback and control

**(Q-13).** Which of the following is not an objective of Information System Auditing?

- (a) Asset Safeguarding Objectives
- (b) Entity Management Objectives
- (c) Data Integrity Objectives
- (d) System Effectiveness Objectives

**(Q-14).** In the Information System Auditing, attesting objective is performed by \_\_\_\_\_ and management objective is performed by \_\_\_\_\_.

- (a) Statutory Auditor, External Auditor
- (b) External Auditor, Internal Auditor
- (c) Internal Auditor, External Auditor
- (d) Internal Auditor, Statutory Auditor

**(Q-15).** Identify the ODD among the following.

- (a) Snapshots
- (b) Integrated Test Facility
- (c) Dashboard
- (d) Audit Hooks

**(Q-16).** Which of the following is not a reason of conducting IS Audit?

- (a) Organizational Costs of Data Loss
- (b) Cost of Incorrect Decision Making
- (c) Continuous and Intermittent Simulation
- (d) High Costs of Computer Error

**(Q-17).** Which of the following statement describes Audit Hooks the best?

- (a) Creation of dummy entity in the application system and submitting the test data for processing against the entity
- (b) Embedding audit software modules within the application system for the continuous monitoring of the transactions
- (c) Software built-in into the system at those points where material processing occurs
- (d) Codes which enables the auditor to flag the suspicious transactions and report to him

**(Q-18).** Which of the following statement describes Snapshot the best?

- (a) Creation of dummy entity in the application system and submitting the test data for processing against the entity
- (b) Embedding audit software modules within the application system for the continuous monitoring of the transactions
- (c) Software built-in into the system at those points where material processing occurs
- (d) Codes which enables the auditor to flag the suspicious transactions and report to him

**(Q-19).** Which of the following statement describes SCARF the best?

- (a) Creation of dummy entity in the application system and submitting the test data for processing against the entity
- (b) Embedding audit software modules within the application system for the continuous monitoring of the transactions
- (c) Software built-in into the system at those points where material processing occurs
- (d) Codes which enables the auditor to flag the suspicious transactions and report to him

**(Q-20).** Which of the following statement describes Integrated Test Facility the best?

- (a) Creation of dummy entity in the application system and submitting the test data for processing against the entity



- (b) Embedding audit software modules within the application system for the continuous monitoring of the transactions
- (c) Software built-in into the system at those points where material processing occurs
- (d) Codes which enables the auditor to flag the suspicious transactions and report to him through notification

**(Q-21).** Consider the following statements about the continuous audit and continuous audit tools:

- (i) Continuous auditing significantly increases the time between occurrence of the client's events and its auditing by the auditor
- (ii) While using ITF audit tool, auditor must decide how to enter the test data and the methodology for removal of its effects
- (iii) The information collected through SCARF is written onto a special audit file known as SCARF transaction files
- (iv) Advantage of CIS is that it does not require modifications to the application system but still provides online auditing capability

Which of the above statements are correct?

- (a) (i), (ii) & (iii) Only
- (b) (ii) & (iv) Only
- (c) (i), (iii) & (iv) Only
- (d) (i) & (iv) Only

**(Q-22).** Auditor of Global Tech Services Ltd. suspects that whenever the clients of Global Tech Services Ltd. changes their backend password, the new password may remain unencrypted for the next 24 hours in it's password management server. He wants a system that will look upon the similar events and notify him about these events. Which of the following audit tool can be used by the auditor?

- (a) Snapshots

- (b) Integrated Test Facility
- (c) SCARF
- (d) Audit Hooks

**(Q-23).** Which of the following statement is incorrect about audit tool?

- (a) Snapshot software are built into system at the points where material processing occurs
- (b) Integrated Test Facility (ITF) is a variation of snapshot and works on same principle
- (c) SCARF involves embedding audit software in the system for the continuous monitoring of the transactions
- (d) Audit Hooks helps auditor about occurrence of suspicious transactions by notifying him as soon as they occur

**(Q-24).** The Key components of information system are \_\_\_\_\_.

- (a) Concrete building, air conditioning, UPS, fire extinguishers, CCTV cameras
- (b) Computing systems, fiber optics, routers, telecommunication satellite Radio towers
- (c) Large servers, mainframes, laptops
- (d) People, Hardware, Software, Data, Network

**(Q-25).** Which of the following is not a component or resource of information system?

- (a) People Resource
- (b) Hardware Resource
- (c) Packet Resource
- (d) Network Resource

**(Q-26).** People, the most important element of information systems, comprise \_\_\_\_\_.

- (a) Users of the information system at the head office and branches
- (b) All users of the system and all information system personnel

- (c) All employees of the organisation except information system personnel
- (d) Employees of the organisation involved in the maintenance of the information system

**(Q-27).** Computer system is made of \_\_\_\_\_ and \_\_\_\_\_.

- (a) Input, Output
- (b) Data, Information
- (c) Bits, Binary
- (d) Hardware, Software

**(Q-28).** Which of the following statement describes hardware the best?

- (a) All computer parts except those which are soft, made of glass or plastic
- (b) All parts of the computer which are complex and hard to understand
- (c) All connecting tubes, joints, cables and pipelines carrying IT cables
- (d) Device performing Input, output, processing & data storage functions of a computer

**(Q-29).** Which of the following statement is incorrect about hardware?

- (a) It is the tangible portion of the computer system which can be seen and touched
- (b) Hardware devices performs the task of input, processing, storage and output
- (c) Hardware can exist without software
- (d) Hardware devices are non-volatile in nature and stores data on permanent basis

**(Q-30).** Consider the following statements about the hardware component of information system:

- (i) Hardware devices are made of plastic or glass or other type of material
- (ii) Cache memory is basically used to perform output function
- (iii) Both hardware and software together makes a computer system functional
- (iv) Hardware devices usually don't occupy any space and don't have any weight

Which of the above statements are correct?

- (a) (i), (ii) & (iii) Only
- (b) (i) & (iii) Only
- (c) (i), (iii) & (iv) Only
- (d) (i) & (iv) Only

**(Q-31).** \_\_\_\_\_ is not an input device.

- (a) Keyboard
- (b) Mouse
- (c) Speaker
- (d) Joystick

**(Q-32).** Which of the following statement describes input devices the best?

- (a) Gives instructions to the computer system about the task to be performed
- (b) Processes instructions & makes coordination with other hardware devices
- (c) Memory where data & programs are stored either on permanent or temporary basis
- (d) Devices through which the system responds

**(Q-33).** Which of the following statement describes output devices the best?

- (a) Gives instructions to the computer system about the task to be performed
- (b) Processes instructions & makes coordination with other hardware devices
- (c) Memory where data & programs are stored either on permanent or temporary basis
- (d) Devices through which the system responds

**(Q-34).** Which of the following statement describes storage devices the best?

- (a) Gives instructions to the computer system about the task to be performed
- (b) Processes instructions & makes coordination with other hardware devices
- (c) Memory where data & programs are stored either on permanent or temporary basis
- (d) Devices through which the system responds

**(Q-35).** Which of the following statement describes processing devices the best?

- (a) Gives instructions to the computer system about the task to be performed
- (b) Processes instructions & makes coordination with other hardware devices
- (c) Memory where data & programs are stored either on permanent or temporary basis
- (d) Devices through which system responds

**(Q-36).** \_\_\_\_\_ is not an input device.

- (a) Webcam
- (b) Scanner
- (c) Printer
- (d) Barcode reader

**(Q-37).** Keyboard gives \_\_\_\_\_ while mouse gives \_\_\_\_\_ to the computer system.

- (a) Text based input, Image based input
- (b) Position based input, Image based input
- (c) Text based input, Voice based input
- (d) Text based input, Position based input

**(Q-38).** Which of the following input device does not gives image-based input to the computer system?

- (a) Bar code reader
- (b) Mouse
- (c) Scanner
- (d) MICR reader

**(Q-39).** In the computer system, CPU stands for:

- (a) Central Primary Unit

- (b) Controlled Processing Unit
- (c) Computer Processing Unit
- (d) Central Processing Unit

**(Q-40).** There are total \_\_\_\_\_ functional units of CPU.

- (a) Three
- (b) Four
- (c) Five
- (d) Two

**Answers to the multiple choice questions:**

1	(b)	11	(b)	21	(b)	31	(c)
2	(b)	12	(c)	22	(d)	32	(a)
3	(d)	13	(b)	23	(b)	33	(d)
4	(c)	14	(b)	24	(d)	34	(c)
5	(d)	15	(c)	25	(c)	35	(b)
6	(d)	16	(c)	26	(b)	36	(c)
7	(d)	17	(d)	27	(d)	37	(d)
8	(d)	18	(c)	28	(d)	38	(b)
9	(b)	19	(b)	29	(d)	39	(d)
10	(d)	20	(a)	30	(b)	40	(a)



## Ch-4 E-Commerce, M-Commerce & Emerging Technologies

### Question 1

Explain the following in brief:

Internet of Things (IoT)-

**Answer:** Internet of Things (IoT): IoT is a system of interrelated computing devices, mechanical and digital machines, objects, animals or people that are provided with unique identifiers and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction. For example: Washing machines with Wi-Fi networking capabilities can connect themselves to home Wi-Fi. Once these machines are so connected, they can be controlled through machine manufacturer mobile app from anywhere in the world.

### Question 2

Explain various Control Objectives of e-commerce or m-commerce.

**Answer:** Various Control Objectives of e-Commerce or m-Commerce are as follows:

- **Prevent organizational costs of data Loss:** Data is a critical resource of an organization for its present and future process and its ability to adapt and survive in a changing environment.
- **Prevent loss from incorrect decision making:** Management and operational controls taken by managers involve detection, investigations and correction of out-of-control processes. These high-level decisions require accurate data to make quality decision rules.
- **Prevent loss of Computer Hardware, Software and Personnel:** These are critical resources of an organization which has a credible impact on its infrastructure and business competitiveness.

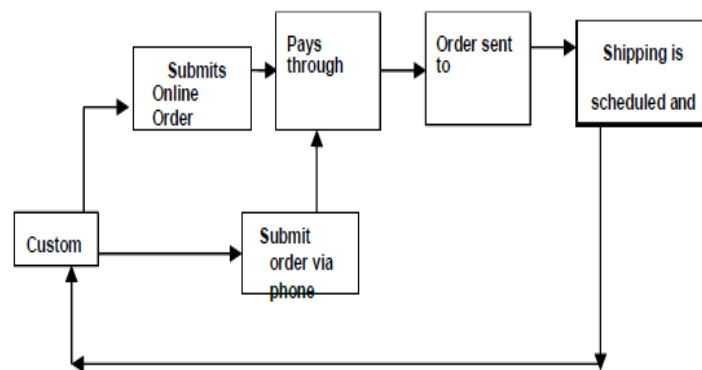
- **Prevent from high costs of computer Error:** In a computerized enterprise environment where many critical business processes are performed, a data error during entry or process would cause great damage.
- **Safeguard assets from un-authorized access:** The information system assets (hardware, software, data files etc.) must be protected by a system of internal controls from unauthorized access.
- **Ensure data integrity:** The importance to maintain integrity of data of an organization depends on the value of information, the extent of access to the information and the value of data to the business from the perspective of the decision maker, competition and the market environment.
- **System Effectiveness Objectives:** Effectiveness of a system is evaluated by auditing the characteristics and objective of the system to meet substantial user requirements.
- **System Efficiency Objectives:** To optimize the use of various information system resources (machine time, peripherals, system software and labour) along with the impact on its computing environment.

### Question 3

Draw Workflow Diagram for e-commerce and describe various steps and corresponding activities involved in this diagram.

#### Answer:

The workflow diagram for e-Commerce is as follows:



**E-Commerce Workflow Diagram**

Description of various steps and corresponding activities in e-Commerce workflow are as follows:

**Step 1: Customers login:** Few e-commerce merchants may allow some transactions to be done through phone, but the basic information flow is e-mode.

**Step 2: Product / Service Selection:** Customer selects products/services from available options.

**Step 3: Customer Places Order:** Order placed for selected product/service by customer that leads to next important activity “Payment Gateway”.

**Step 4: Payment Gateway:** Here, customer makes a selection of the payment method. In case a payment method is other than Cash on Delivery (COD), the merchant gets the update from payment gateway about payment realization from customer. In case of COD, e - commerce vendor may do an additional check to validate customer.

**Step 5: Dispatch and Shipping Process:** This process may be executed at two different ends. First if product/service inventory is managed by e-commerce vendor than dispatch shall be initiated at merchant warehouse. Second, many e-commerce merchants allow third party vendors to sale through merchant websites.

**Step 6: Delivery Tracking:** Another key element denoting success of e-commerce business is timely delivery. To keep a track of this, merchants provide their delivery staff with hand held devices, where product / service delivery to customers are immediately updated.

**Step 7: COD Tracking:** In case products are sold on Cash on Delivery (COD) payment mode, merchants need to have additional check on matching delivery with payments.

#### Question 4

Describe the term 'Digital Library'.

**Answer: Digital Library:** A Digital Library is a special library with a focused collection of digital objects that can include text, visual material, audio material, video material, stored as electronic media formats, along with means for organizing, storing, and retrieving the files and media contained in the library collection. Digital libraries can vary immensely in size and scope, and can be maintained by individuals, organizations, or affiliated with established physical library buildings or institutions, or with academic institutions. The digital content may be stored locally, or accessed remotely via computer networks. An electronic library is a type of information retrieval system.

#### Question 5

Subsequent to demonetization, one of your elderly neighbour, who was using traditional digital methods of making payments like cards, net banking etc., asked for your help to know about the various new methods of Digital Payments. Identify and explain various new methods of Digital Payments for him.

**Answer:** Some of the new methods of Digital Payments are as follows:

- Unified Payment Interface (UPI) Apps
- Immediate Payment Service (IMPS)
- BHIM (Bharat Interface for Money) - Mobile App

- Mobile Wallets
- Aadhar Enabled Payment Service(AEPS)
- Unstructured Supplementary Service Data(USSD)

The explanation of these Digital Payments is as follows:

**(i) Unified Payment Interface (UPI):** UPI is a payment mode which is used to make fund transfers through the mobile app. UPI App is a system that powers multiple bank accounts of participating banks, several banking services features like fund transfer, and merchant payments in a single mobile application. User can transfer funds between two accounts using UPI Apps. User must register for mobile banking to use UPI apps. **Immediate Payment Service (IMPS):** It is an instant interbank electronic fund transfer service through mobile phones. It is also being extended through other channels such as ATM, Internet Banking, etc.

**(ii) Mobile Apps:** BHIM (Bharat Interface for Money) is a Mobile App developed by National Payments Corporation of India (NPCI) based on UPI (Unified Payment Interface). It facilitates e-payments directly through banks and supports all Indian banks which use that platform. It is built on the Immediate Payment Service infrastructure and allows the user to instantly transfer money between the bank accounts of any two parties. BHIM works on all mobile devices and enables users to send or receive money to other UPI payment addresses.

**(iii) 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 mobile wallet service providers. There are mobile wallets like Paytm, Free charge, Buddy, Mobilewik etc. Some of these are owned by banks and some are owned by private companies.

**(iv) Aadhar Enabled Payment Service(AEPS):** AEPS is an Aadhaar based digital payment mode. Customer needs only his or her Aadhaar number to pay to any merchant. AEPS allows bank to bank transactions which means the money that you pay will be deducted from your account



and credited to the payee's account directly. Customers will need to link their AADHAR numbers to their bank accounts. APES once launched can be used at POS terminals also.

**(v) Unstructured Supplementary Service Data(USSD):** A revolutionary idea, where to make payments through mobiles there is neither need for internet nor any smart phone. USSD banking or \*99# Banking is a mobile banking based digital payment mode. User does not need to have a smartphone or internet connection to use USSD banking. S/he can easily use it with any normal feature phone. USSD banking is as easy as checking of mobile balance. S/he can use this service for many financial and non-financial operations such as checking balance, sending money, changing Mobile Banking Personal Identification number (MPIN) and getting Mobile Money Identifier (MMID).

#### Question 6

Discuss various application areas of 'Virtualization'.

**Answer:** Various application areas of Virtualization are as follows:

- **Server Consolidation:** Virtual machines are used to consolidate many physical servers into fewer servers, which in turn host virtual machines. Each physical server is reflected as a virtual machine "guest" residing on a virtual machine host system. This is also known as "Physical-to-Virtual" or 'P2V' transformation. **Disaster Recovery:** Virtual machines can be used as "hot standby" environments for physical production servers. This changes the classical "backup-and-restore" philosophy, by providing backup images that can "boot" into live virtual machines, capable of taking over workload for a production server experiencing an outage.
- **Testing and Training:** Virtualization can give root access to a virtual machine. This can be very useful such as in kernel development and operating system courses.



- **Portable Applications:** Portable applications are needed when running an application from a removable drive, without installing it on the system's main disk drive. Virtualization can be used to encapsulate the application with a redirection layer that stores temporary files, windows registry entries and other state information in the application's installation directory and not within the system's permanent file system.
- **Portable Workspaces:** Recent technologies have used virtualization to create portable workspaces on devices like iPods and USB memory sticks.

### Question 7

Write any two application areas of Internet of Things (IOT).

**Answer:** Some of the applications area of Internet of Things (IoT) are as follows:

- All home appliances to be connected and that shall create a virtual home.
  - ✓ Home owners can keep track of all activities in house through their hand-held devices.
  - ✓ Home security CCTV is also monitored through hand held devices.
- Office machines shall be connected through internet.
  - ✓ Human resource managers shall be able to see how many people have had a cup of coffee from vending machine and how many are present.
  - ✓ How many printouts are being generated through office printer?
- Governments can keep track of resource utilizations/extra support needed. For example- under SWACHH mission, government can tag all dustbins with IoT sensors. They (dustbins) generate a message once they are full. Being connected to wi-fi, they can intimate the cleaning supervisor of Municipal Corporation so that BIN can be emptied.

- As a research study, individuals have got themselves implanted with electronic chips in their bodies. This chip allows him/her to connect to home/office wi-fi. Once connected person can enter home/office and perform designated function. This chip becomes individual's authentication token.
- Washing machines with Wi-Fi networking capabilities can connect themselves to home Wi-Fi. Once these machines are so connected they can be controlled through machine manufacturer mobile APP from anywhere in the world.
- India's living legend of cricket appearing in an Advertisement for water purifier informs that, the water purifier is Wi-Fi enabled. When the purifying agents deplete in the machine, it connects to home Wi-Fi and informs the service agents of the company.

### Question 8

Mobile computing is an important and rapidly evolving technology that allows users to transmit data from remote location to other locations in mobility condition. Being a communication expert, identify the limitations in current scenario that impede or hesitate users to use this technology frequently.

**Answer:** Limitations of Mobile Computing are as follows:

- **Insufficient Bandwidth:** Mobile Internet access is generally slower than direct cable connections using technologies such as General Packet Radio Service (GPRS) and Enhanced Data for GSM (Global System for Mobile Communication) Evolution (EDGE), and 3G networks. These networks are usually available within range of commercial cell phone towers. Higher speed wireless LANs are inexpensive but have very limited range.
- **Security Standards:** When working mobile, one is dependent on public networks, requiring careful use of Virtual Private Network (VPN). Security is a major concern while concerning the mobile computing standards on the fleet. One can easily attack the VPN through a huge number of networks inter connected through the line.

- **Power consumption:** When a power outlet or portable generator is not available, mobile computers must rely entirely on battery power. Combined with the compact size of many mobile devices, this often means unusually expensive batteries must be used to obtain the necessary battery life.
- **Transmission interferences:** Weather, terrain, and the range from the nearest signal point can all interfere with signal reception. Reception in tunnels, some buildings, and rural areas is often poor.
- **Potential health hazards:** People who use mobile devices while driving is often distracted from driving, and are thus assumed more likely to be involved in traffic accidents. Cell phones may interfere with sensitive medical devices. There are allegations that cell phone signals may cause health problems.
- **Human interface with device:** Screens and keyboards tend to be small, which may make them hard to use. Alternate input methods such as speech or handwriting recognition require training.

### Question 9

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.

**Answer:** 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.

**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 10

Explain the concept of E-Commerce briefly. How can you protect your E-Commerce business from intrusion?

**Answer:** Definition of E-commerce is 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.

**Multiple choice questions:**

**(Q-1).** \_\_\_\_\_ is also known as \_\_\_\_\_ where no hard cash is involved and money is paid or received instantly.

- (a) Web Payment, Electronic Payment
- (b) Digital Payment, Web Payment
- (c) Digital Payment, Electronic Payment
- (d) Electronic Payment, Instant Payment

**(Q-2).** Which of the following is not a modern digital payment mode?

- (a) UPI Apps
- (b) BHIM Mobile App
- (c) Aadhar Enabled Payment Service
- (d) Net Banking

**(Q-3).** In the context of digital payment, AEPS stands for \_\_\_\_\_.

- (a) Account Enabled Payment Service
- (b) Aadhar Enterprise Payment Scheme
- (c) Aadhar Enabled Payment Service
- (d) Aadhar Encrypted Payment Service

**(Q-4).** In the context of digital payment, IMPS stands for \_\_\_\_\_.

- (a) Internet Mode Payment Service
- (b) Interconnected Money Payment Service
- (c) Immediate Payment Scheme
- (d) Immediate Payment Service

**(Q-5).** Which of the following is not a traditional digital payment mode?

- (a) UPI Apps
- (b) Credit Card



- (c) Debit Card
- (d) E-Wallet

**(Q-6).** In the context of digital payment, UPI stands for \_\_\_\_\_.

- (a) United Payment Interface
- (b) Universal Payment Interface
- (c) Ultimate Payment Interface
- (d) Unified Payment Interface

**(Q-7).** In the context of digital payment, NPCI stands for \_\_\_\_\_.

- (a) Network Payment Corporation of India
- (b) National Payments Corporation of India
- (c) National Payments Consortium of India
- (d) National Payments Committee of India

**(Q-8).** UPI technology has been developed by \_\_\_\_\_.

- (a) National Payments Corporation of India
- (b) Indian Payments Corporation Ltd.
- (c) Bharat Payments Corporation Ltd.
- (d) Network Payment Corporation of India

**(Q-9).** Which of the following statement is incorrect about UPI technology?

- (a) It is a real-time payment system
- (b) UPI technology is developed by NPCI
- (c) UPI does not support inter-bank transactions
- (d) There are multiple payment apps powered by UPI technology

**(Q-10).** UPI is not an \_\_\_\_\_ but a \_\_\_\_\_ that powers other payment apps like \_\_\_\_\_.

- (a) Application, Service, Facebook
- (b) Service, Application, PayTM
- (c) Technology, Application, PhonePe
- (d) Application, Service, BHIM App

**(Q-11).** BHIM App has been developed by \_\_\_\_\_ which works on \_\_\_\_\_ technology.

- (a) RBI, UPI
- (b) Ministry of Finance, USSD
- (c) NPCI, UPI
- (d) NPIC, IMPS

**(Q-12).** \_\_\_\_\_ is an instant interbank electronic fund transfer service through mobile phones.

- (a) Aadhar Enabled Payment Service
- (b) Unstructured Supplementary Service Data
- (c) Immediate Payment Service
- (d) Unified Payment Interface

**(Q-13).** \_\_\_\_\_ is also known as \*99# banking.

- (a) Aadhar Enabled Payment Service
- (b) Unstructured Supplementary Service Data
- (c) Immediate Payment Service
- (d) BHIM Banking

**(Q-14).** Consider the following statements about the modern methods of digital payment:

- (i) USSD banking allows the user to do banking without the smart phone and internet

- (ii) There are very limited number of UPI Apps available due to not widely uses
- (iii) BHIM App works on all mobile devices and enables users to send or receive money
- (iv) Immediate Payment Service are available during business hours only

Which of the above statements are correct?

- (a) (i), (ii) & (iii) Only
- (b) (ii) & (iv) Only
- (c) (i), (iii) & (iv) Only
- (d) (i) & (iii) Only

**(Q-15).** Which of the following payment applications works on UPI technology?

- (a) BHIM
- (b) PhonePe
- (c) SBI UPI App
- (d) All of the above

**(Q-16).** Which of the following is not a mobile wallet?

- (a) Free charge
- (b) SBI Buddy
- (c) PayTM
- (d) Flip Pay

**(Q-17).** \_\_\_\_\_ is defined as virtual wallets that stores payment card information on a mobile device?

- (a) Money Wallets
- (b) Mobile Wallets
- (c) Payment Wallets
- (d) Transaction Wallets

**(Q-18).** BHIM is an example of \_\_\_\_\_.

- (a) Mobile App
- (b) Mobile Hardware
- (c) Mobile Operating System
- (d) Mobile Wallet

**(Q-19).** Consider the following statements about the UPI technology and mobile payment app:

- (i) BHIP payment app uses its own proprietary technology and does not rely on UPI
- (ii) UPI is a kind of infrastructure that supports other payment applications
- (iii) UPI powered various payment applications of different companies
- (iv) UPI services are available during the business hours only

Which of the above statements are correct?

- (a) (i), (ii) & (iii) Only
- (b) (ii) & (iv) Only
- (c) (ii), (iii) & (iv) Only
- (d) (ii) & (iii) Only

**(Q-20).** Which of the following term is not associated with the digital payment?

- (a) Pay or receive money from anywhere
- (b) Written record
- (c) No risk of data theft
- (d) Easy and convenient

**(Q-21).** Which of the following is not a disadvantage of digital payment?

- (a) Difficult for a Non-technical person
- (b) Risk of data theft
- (c) Written record
- (d) Overspending

**(Q-22).** To which of the following personalities is the BHIM app dedicated?

- (a) Mahatma Gandhi
- (b) Jawahar Lal Nehru
- (c) B.R. Ambedkar
- (d) Lal Bahadur Shastri

**(Q-23).** \_\_\_\_\_ refers to the process of doing business electronically.

- (a) Online Commerce
- (b) E-Commerce
- (c) Web Commerce
- (d) Digital Commerce

**(Q-24).** In traditional commerce, transaction is processed in \_\_\_\_\_ mode while in the e-commerce, transaction is processed in \_\_\_\_\_ mode.

- (a) Digital, Manual
- (b) Electronical, Digital
- (c) Manual, Manual
- (d) Manual, Electronical

**(Q-25).** Consider the following statements about the electronic commerce:

- (i) In the last few years, e-commerce business have grown significantly
- (ii) E-commerce services, being very secured in nature, are virtually risk free
- (iii) Not only in developed but also in developing countries, e-commerce is widely used
- (iv) Though very useful overall, e-commerce is not useful for the government

Which of the above statements are correct?

- (a) (i), (ii) & (iii) Only
- (b) (ii) & (iv) Only

(c) (ii), (iii) & (iv) Only

(d) (i) & (iii) Only

**(Q-26).** In traditional commerce, customer interaction is \_\_\_\_\_ while in e-commerce, customer interaction is \_\_\_\_\_.

(a) Screen-to-face, Face-to-face

(b) Face-to-face, Screen-to-face

(c) Face-to-face, Screen-to-Screen

(d) Face-to-screen, Screen-to-screen

**(Q-27).** Consider the following statements about the tradition commerce and electronic commerce:

(i) E-commerce services remains available only during business hours

(ii) The scope of traditional commerce services are restricted within in a limited geography

(iii) More layers in delivery are involved in case of electronic commerce

(iv) Delivery usually happens instantly in case of traditional commerce

Which of the above statements are correct?

(a) (i), (ii) & (iii) Only

(b) (ii) & (iv) Only

(c) (ii), (iii) & (iv) Only

(d) (ii) & (iv) Only

**(Q-28).** Which of the following is not a customer-oriented benefit of e-commerce?

(a) Convenience

(b) Increased Customer Base

(c) Anytime Access

(d) Better deals



**(Q-29).** Which of the following is not a business-oriented benefit of e-commerce?

- (a) Creation of new markets
- (b) Increased Customer Base
- (c) Reduction in overhead costs
- (d) Product reviews

**(Q-30).** Which of the following is a government-oriented benefit of e-commerce?

- (a) Easier entry into new markets
- (b) Less uses of ecologically damaging materials
- (c) Anytime access
- (d) Increased efficiency

**(Q-31).** Which of the following is not a component in e-commerce environment?

- (a) User
- (b) E-commerce Vendors
- (c) Technology Infrastructure
- (d) Payment Portal

**(Q-32).** In the e-commerce environment, which of the following is not considered by e-commerce vendors?

- (a) Warehouse operations
- (b) Privacy Policy
- (c) Shipping and returns
- (d) Digital Library

**(Q-33).** In the e-commerce environment, which of the following is considered in technology infrastructure component of e-commerce?

- (a) Web portal

- (b) Privacy Policy
- (c) Payment Gateway
- (d) Digital Library

**(Q-34).** \_\_\_\_\_ is a special library having collection of digital objects like text, audio, images etc.

- (a) Content Library
- (b) Data Library
- (c) Digital Library
- (d) Mobile Library

**(Q-35).** \_\_\_\_\_ provides an interface through which user interacts with e-commerce vendors.

- (a) Data Interchange
- (b) Web Portal
- (c) Digital Library
- (d) Mobile Interchange

**(Q-36).** Through \_\_\_\_\_ e-commerce vendor collects payment from the customer.

- (a) Web Portal
- (b) Payment Gateway
- (c) Payment Portal
- (d) Web Gateway

**(Q-37).** A \_\_\_\_\_ is a software designed specifically to run on the mobile device.

- (a) Mobile Website
- (b) Mobile App
- (c) Mobile Module

(d) Mobile Web

**(Q-38).** In the e-commerce environment, mainly which of the following architecture is used?

- (a) Single Tier
- (b) Two Tier
- (c) Three Tier
- (d) Both (b) & (c)

**(Q-39).** Which of the following is not a module used in the mobile apps developed for e-commerce?

- (a) Mobile Store Front Module
- (b) Mobile Ticketing Module
- (c) Mobile Advertising and Marketing Module
- (d) Mobile Delivery Module

**(Q-40).** Through the \_\_\_\_\_, all the products and services offered by the vendor are categorized in the user-friendly manner.

- (a) Mobile Store Front Module
- (b) Mobile Ticketing Module
- (c) Mobile Catalogue Module
- (d) Mobile Banking Module

**Answers to the multiple choice questions:**

1	(c)	11	(c)	21	(c)	31	(d)
2	(d)	12	(c)	22	(c)	32	(d)
3	(c)	13	(b)	23	(b)	33	(d)
4	(d)	14	(d)	24	(d)	34	(c)

5	(a)	15	(d)	25	(d)	35	(b)
6	(d)	16	(d)	26	(b)	36	(b)
7	(b)	17	(b)	27	(d)	37	(b)
8	(a)	18	(a)	28	(b)	38	(c)
9	(c)	19	(d)	29	(d)	39	(d)
10	(d)	20	(c)	30	(b)	40	(a)



## Ch-5 Core Banking Systems

### Question 1

Now-a-days, Credit Cards are extensively being used for payment purpose. As a consultant to credit card section of a bank, advise the risks involved in the credit card process.

**Answer:** Various risks that are involved in the Credit Card process are as follows:

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

### Question 2

Automation of business processes has introduced new types of risks in banking service. You being the Branch Manager of a CBS branch, list out some of the internal controls you think to be implemented in your branch.

**Answer:** Some examples of Internal Controls that can be implemented in a bank branch to avoid the risks are as below:

- Work of one staff member is invariably supervised/ checked by another staff member, irrespective of the nature of work (Maker-Checker process).
- A system of job rotation among staff exists.
- Financial and administrative powers of each official/ position is fixed and communicated to all persons concerned.

- Branch managers must send periodic confirmation to their controlling authority on compliance of the laid down systems and procedures.
- All books are to be balanced periodically. Balancing is to be confirmed by an authorized official.
- Details of lost security forms are immediately advised to controlling so that they can exercise caution.
- Fraud prone items like currency, valuables, draft forms, term deposit receipts, traveller's cheques and other such security forms are in the custody of at least two officials of the branch.

### Question 3

**Define 'Proxy Server'.**

**Answer: 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.

### Question 4

Explain various key aspects in-built into the architecture of a Core Banking System.

**Answer:** Some key aspects in-built into the architecture of a Core Banking System (CBS) are as follows:



- **Information flow:** Facilitates information flow within the bank and improves the speed and accuracy of decision-making. It deploys systems that streamline integration and unite corporate information to create a comprehensive analytical infrastructure.
- **Customer centric:** A holistic core banking architecture enables banks to target customers with the right offers at the right time with the right channel to increase profitability.
- **Regulatory compliance:** Compliance in case of banks is complex and expensive. CBS has built-in and regularly updated regulatory platform which will ensure compliance.
- **Resource optimization:** Optimizes utilization of information and resources of banks and lowers costs through improved asset reusability, faster turnaround times, faster processing and increased accuracy.

#### Question 5

In line with the suggestions of RBI, M/s. ABC Bank is planning to obtain ISO 27001: 2013 certification for its Information Security Management System. As an IS Auditor, you are required to prepare a sample list of Risks w.r.t. Information Security for the Bank.

**Answer:** Sample listing of Risks w.r.t Information Security for the Bank is as follows:

- Significant information resources may be modified inappropriately, disclosed without authorization, and/ or unavailable when needed. (e.g., they may be deleted without authorization).
- Lack of management direction and commitment to protect information assets.
- Potential Loss of confidentiality, availability and integrity of data and system.
- User accountability is not established.

- It is easier for unauthorized users to guess the password of an authorized user and access the system and/ or data. This may result in loss of confidentiality, availability and integrity of data and system.
- Unauthorized viewing, modification or copying of data and/ or unauthorized use, modification or denial of service in the system.
- Security breaches may go undetected.
- Inadequate preventive measure for key server and IT system in case of environmental threat like heat, humidity, fire, flood etc.
- Unauthorized system or data access, loss and modification due to virus, worms and Trojans.

#### Question 6

Information Technology (IT) risks can be reduced by implementing the right type and level of control in automated environment that is done by integrated controls into information technology. Being an IT consultant, suggest various steps of IT related control to a branch manager of a bank.

**Answer:** IT risks need to be mitigated by implementing the right type and level of controls in the automated environment. Sample list of IT related controls in Banks are as follows:

- The system maintains a record of all log-ins and log-outs. If the transaction is sought to be posted to a dormant or inoperative account, the processing is halted and can be proceeded with only with a supervisory password.
- The system checks whether the amount to be withdrawn is within the drawing power.
- The system flashes a message if the balance in a lien account would fall below the lien amount after the processing of the transaction.
- Access to the system is available only between stipulated hours and specified days only.

- Individual users can access only specified directories and files. Users should be given access only on a 'need-to-know basis' based on their role in the bank. This is applicable for internal users of the bank and customers.
- Exception situations such as limit excess, reactivating dormant accounts, etc. can be handled only with a valid supervisory level password.
- A user timeout is prescribed that means that after a user logs-in and there is no activity for a pre-determined time, the user is automatically logged out of the system.
- Once the end-of-the-day process is over, the ledgers cannot be opened without a supervisory level password

### Question 7

Describe any three key functions of RBI.

**Answer:** The key functions of Reserve Bank of India (RBI) are as follows:

- 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.
- 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.
- 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.

## Question 8

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.

**Answer:** 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.

**Multiple choice questions:**

**(Q-1).** Which of the following statement is correct about the banking business & banking industry?

- (a) Banking industry is more or less unaffected by the growth of information technology
- (b) Banking industry is not that effective in a large country like India
- (c) Banking industry acts as a backbone for the economic growth of a nation
- (d) Banking industry is more like a passive industry which do not actively deals with general public

**(Q-2).** In today's world, it is practically impossible to do banking business without \_\_\_\_\_.

- (a) Data
- (b) Information Technology
- (c) Assets & Liabilities
- (d) Laws & Regulations

**(Q-3).** \_\_\_\_\_ acts as the engine of economic growth in any country including India.

- (a) Automobile Industry
- (b) Telecom Industry
- (c) Real Estate Industry
- (d) Banking Industry

**(Q-4).** Which of the following is not a key feature of banking industry?

- (a) Custody of large volume of monetary items
- (b) Operating through wide network of branch
- (c) Limited to a small geographical area
- (d) Increased possibility of frauds

**(Q-5).** In the context of banking business instrument, ECB stands for\_\_\_\_\_.

- (a) Essential Commercial Borrowing
- (b) External Collateral Borrowing
- (c) External Commercial Balancing
- (d) External Commercial Borrowing

**(Q-6).** MICR code usually have \_\_\_\_\_ digits.

- (a) Seven
- (b) Eight
- (c) Nine
- (d) Eleven

**(Q-7).** \_\_\_\_\_ is an instrument used in India to facilitate the access to foreign money by Indian corporations and public sector undertakings.

- (a) Essential Commercial Borrowing
- (b) Commercial Deposits (CD)
- (c) Borrowing Papers (BoP)
- (d) External Commercial Borrowing

**(Q-8).** Two of the most common modes of the remittance of funds are \_\_\_\_\_ & \_\_\_\_\_.

- (a) Cheque, Demand Draft



- (b) Demand Draft, Telegraphic Transfer
- (c) Cheque, Telegraphic Transfer
- (d) Cheque, Internet Banking

**(Q-9).** Mr. A wants to transfer some fund. He went to the bank branch he has an account. The branch manager has handed over an instrument to him. This is most likely be \_\_\_\_\_.

- (a) Cheque Transfer
- (b) Telegraphic Transfer
- (c) Mail Transfer
- (d) Demand Draft Transfer

**(Q-10).** In the context of banking instruments, MT stands for \_\_\_\_\_.

- (a) Money Transfer
- (b) Monetary Transfer
- (c) Mail Transfer
- (d) Mail Transmission

**(Q-11).** In the context of banking instruments, TT stands for \_\_\_\_\_.

- (a) Token Transfer
- (b) Technology Transfer
- (c) Telegraphic Transfer
- (d) Telephonic Transfer

**(Q-12).** In the context of clearing house services of banks, MICR stands for \_\_\_\_\_.

- (a) Magical Ink Character Recognition
- (b) Magnetic Ink Character Recognition
- (c) Magnetic Ink Character Recording
- (d) Magnetic Ink Cover Recognition

**(Q-13.** Consider the following statements about the MICR technology:

- (i) MICR is a technology which allows machines to read and process cheques
- (ii) MICR code is usually an eleven-digit code
- (iii) MICR technology allowed the processing of thousands of cheques in a very short time
- (iv) Now a days, most banks have a non-MICR based clearing houses

Which of the above statements are correct?

- (a) (i), (ii) & (iii) Only
- (b) (ii) & (iv) Only
- (c) (i), (iii) & (iv) Only
- (d) (i) & (iii) Only

**(Q-14).** One of the important functions of banking business is \_\_\_\_\_ in which banks \_\_\_\_\_ proceeds on behalf of the customers when customer has lodged various instruments like cheques, drafts etc. with the bank from the third parties.

- (a) Remittances, Transfers
- (b) Collections, Collects
- (c) Deposits, Collects
- (d) Clearing, Transfers

**(Q-15).** As the banking business has grown and transaction volume increased significantly, banks uses \_\_\_\_\_ for clearing purposes.

- (a) Electronic Clearing Services
- (b) Digital Clearing Services
- (c) Global Clearing Services
- (d) Regional Clearing Services

**(Q-16).** To ensure smooth clearing in the banks, ECS takes two forms \_\_\_\_\_ & \_\_\_\_\_.

- (a) ECS Assets, ECS Liabilities
- (b) ECS Income, ECS Expenses
- (c) ECS Debit, ECS Credit
- (d) ECS Notional, ECS Real

**(Q-17).** In the case of \_\_\_\_\_, there is a single receiver of funds from a large number of customers, e.g., public utilities, mutual funds, etc.?

- (a) ECS Debit
- (b) ECS Notional
- (c) ECS Real
- (d) ECS Credit

**(Q-18).** \_\_\_\_\_ involves collecting instruments on behalf of customers of bank.

- (a) Deposits
- (b) Advances
- (c) Clearing
- (d) Collections

**(Q-19).** Banks usually have a \_\_\_\_\_ to settle inter-bank transactions among the bank.

- (a) Settlement House
- (b) Collection House
- (c) Payment House
- (d) Clearing House

**(Q-20).** A \_\_\_\_\_ is an undertaking by a bank to the payee to pay to him, on behalf of the applicant provided the terms and conditions mentioned therein are complied with.

- (a) Letter of Capital
- (b) Letter of Guarantee
- (c) Letter of Undertaking

(d) Letter of Credit

**(Q-21).** A \_\_\_\_\_ is an undertaking by a bank for submission to the buyers of their goods or services to guarantee performance of contractual obligations undertaken by them or satisfactory performance of goods supplied by them, or for submission to certain departments like excise and customs etc.

(a) Letter of Capital

(b) Letter of Guarantee

(c) Letter of Undertaking

(d) Letter of Credit

**(Q-22).** In the banks, there may be separate clearing houses for the \_\_\_\_\_ & \_\_\_\_\_ based instruments. (a) Electronic, Non-electronic

(b) Physical, Digital

(c) MICR, Non-MICR

(d) MIRC, Non-MIRC

**(Q-23).** In the context of banks clearing house system, ECS stands for \_\_\_\_\_.

(a) Electronic Clearing System

(b) Electronic Communication Services

(c) Electric Clearing Services

(d) Electronic Clearing Services

**(Q-24).** Which of the following is most likely not to be a case with the ECS credit?

(a) Public utilities

(b) Salary payment

(c) Mutual funds

(d) None of the above

**(Q-25).** Which of the following is most likely to be a case with the ECS debit?

- (a) Distribution of dividend
- (b) Distribution of interest
- (c) Payment of salary
- (d) All of the above

**(Q-26).** \_\_\_\_\_ is an international credit card network but \_\_\_\_\_ is not an international credit card network.

- (a) VISA, Master Card
- (b) VISA, Amex
- (c) Amex, MassPay
- (d) Master Card, Amex

**(Q-27).** Identify the ODD among the following.

- (a) VISA
- (b) Soft Card
- (c) Master Card
- (d) Amex

**(Q-28).** One of the services offered by the banks are HNI Banking. HNI Banking stands for \_\_\_\_\_.

- (a) High Net-worth Income Banking
- (b) Heavy Net-worth Individuals Banking
- (c) High Network Individuals Banking
- (d) High Net-worth Individuals Banking

**(Q-29).** Consider the following statements about the services provided by the banking industry:

- (i) Deposits is a major banking service in India that includes term deposit, savings deposit, recurring deposit, commercial paper etc.

- (ii) Now a days, banking industry uses electronic remittances methods
- (iii) Considering the huge transaction volume, Banks uses OCR technology that allows processing of thousands of cheques in a very short time
- (iv) Banks also provides the services of letter of credit and guarantee to their customers

Which of the above statements are correct?

- (a) (i), (ii) & (iii) Only
- (b) (ii) & (iv) Only
- (c) (i), (iii) & (iv) Only
- (d) (i) & (iii) Only

**(Q-30).** As there are constant threats looming in the banking industry, fraudsters now a days uses \_\_\_\_\_ techniques to acquire sensitive data from the bank employees.

- (a) Social Engineering
- (b) Financial Engineering
- (c) Manipulations
- (d) Concealing and hiding

**(Q-31).** Which of the following is not among a risk or challenge banks should consider?

- (a) Frequent changes or obsolescence in the technology
- (b) Dependence on vendors due to outsourcing of IT services
- (c) External threats leading to cyber-crime
- (d) Integrity and simplicity of systems

**(Q-32).** \_\_\_\_\_ can be defined as the potential harm caused if a threat exploits a particular vulnerability to cause damage to the organisation.

- (a) Threat
- (b) Risk
- (c) Failure



(d) Inadequacy

**(Q-33).** The risk leads a gap between the need to protect \_\_\_\_\_ and the \_\_\_\_\_.

- (a) Data, Information
- (b) System, Information
- (c) System, Degree of controls
- (d) System, Degree of protection applied

**(Q-34).** Which of the following is not a reason that causes gap between the need to protect system and degree of protection applied?

- (a) Widespread use of technology
- (b) Devolution of management and control
- (c) Elimination of distance, time as constraints
- (d) Internal factors such as legal, regulatory etc.

**(Q-35).** Which of the following are some of the common risk related to banking businesses?

- (a) Loss of confidential data
- (b) Unauthorized access to customer data
- (c) Loss due to non-compliance
- (d) All of the above

**(Q-36).** Which of the following is not an IT risk management strategy entity can adopt?

- (a) Avoid
- (b) Assume
- (c) Mitigate
- (d) Transfer

**(Q-37).** Risk management strategy acknowledge that the risk exists and monitor. It is \_\_\_\_\_.

- (a) Avoid

- (b) Accept
- (c) Mitigate
- (d) Transfer

**(Q-38).** \_\_\_\_\_ is a risk management strategy that advocates implementing controls.

- (a) Avoid
- (b) Accept
- (c) Mitigate
- (d) Transfer

**(Q-39).** Basel III is a comprehensive set of reform measures, developed by the \_\_\_\_\_.

- (a) Basel Group
- (b) Basel Consortium
- (c) Basel Committee
- (d) Basel Corporation

**(Q-40).** \_\_\_\_\_ is a risk management strategy where entity do not take up specific business process which involves risk.

- (a) Avoid
- (b) Accept
- (c) Mitigate
- (d) Transfer

**Answers to the multiple choice questions:**

1	(c)	11	(c)	21	(b)	31	(d)
2	(b)	12	(b)	22	(c)	32	(b)
3	(d)	13	(d)	23	(d)	33	(d)

4	(c)	14	(b)	24	(b)	34	(d)
5	(d)	15	(a)	25	(d)	35	(d)
6	(c)	16	(c)	26	(c)	36	(b)
7	(d)	17	(d)	27	(b)	37	(b)
8	(b)	18	(d)	28	(d)	38	(c)
9	(d)	19	(d)	29	(b)	39	(c)
10	(c)	20	(d)	30	(a)	40	(a)

