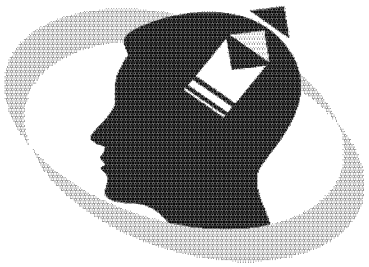
CA - INTER
COURSE MATERIAL

Quality Education
beyond your imagination...

SUBJECT CODE: 7A, MATERIAL NO: 58
FAST TRACK MATERIAL ON
ENTERPRISE INFORMATION SYSTEMS _40e(2nd version)



MASTER MINDS™

CA • CMA • CS • MEC • CEC

GUNTUR | RAJAHMUNDRY | KURNOOL | VIZAG | NELLORE

HYDERABAD | VIJAYAWADA | TIRUPATHI

Cell: 98851 25025 / 26

Visit us @ www.mastermindsindia.com | Mail: mastermindsinfo@ymail.com

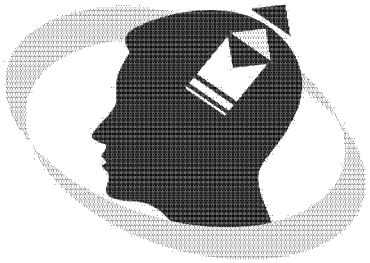
Facebook Page: Masterminds For CA | Youtube Channel: Masterminds For CA

INDEX

CA - INTER
COURSE MATERIAL

Quality Education
beyond your imagination...

PART A – DEFINITIONS



MASTER MINDS

CA • CMA • CS • MEC • CEC

GUNTUR | RAJAHMUNDRY | KURNOOL | VIZAG | NELLORE

HYDERABAD | VIJAYAWADA | TIRUPATHI

Cell: 98851 25025 / 26

Visit us @ www.mastermindsindia.com | Mail: mastermindsinfo@ymail.com

Facebook Page: Masterminds For CA | Youtube Channel: Masterminds For CA

1. COMPONENTS OF INFORMATION SYSTEMS

'A' CATEGORY

1. Information	2. System
Data is a raw fact and can take the form of a numbers or statement such as a date or a measurement which has some meaning. The processed data is called information.	**a)** The system can be defined as "a group of mutually related, cooperating elements with a defined boundary; working on reaching a common goal by taking inputs and producing outputs in organized transformation process." **b)** A system contains several subsystems with sub goals, all contributing to meeting the overall system goal.
3. Information systems	**4. Central Processing Unit (CPU)**
Information System (IS) is a combination of people, hardware, software, communication devices, network and data resources that processes data and provide information for a specific purpose.	**a)** The Central Processing Unit (CPU or microprocessor) is the actual hardware that interprets and executes the program (software) instructions and coordinates how all the other hardware devices work together. **b)** The CPU is built on a small flake of silicon and can contain the equivalent of several million transistors. **c)** The processor or CPU is like the brain of the computer. **d)** The main function of CPU is to execute programs stored in memory.
5. Operating Systems (OS)	**6. Hub**
An **Operating System (OS)** is a set of computer programs that manages computer hardware resources and acts as an interface with computer applications programs. Some Operating systems used nowadays are Windows 7, Windows 8, Linux, UNIX, etc.	**a)** A simple network device that connects other devices to the network and sends packets to all the devices connected to it. **b)** A hub is basically a multiport repeater that connects multiple wires coming from different branches. ***c)*** *Hubs cannot filter data, so data packets are sent to all connected devices.*
7. Bridge	**8. Router**
a) Bridge is a communications processor that connects two Local Area Networks (LANs) working on the same protocol. **b)** A bridge is a repeater, with add on functionality of filtering content by reading the MAC addresses of source and destination.	A device that receives and analyses packets and then routes them towards their destination. In some cases, a router will send a packet to another router; in other cases, it will send it directly to its destination.
9. Network Topology	**10. IP Address**
a) The term 'Topology' defines the physical or logical arrangement of links in a network. It is the geometric representation of the relationship of all the links and linking devices (usually called Nodes) to each other. **b)** Common topologies are **Star Network, Bus Network, Ring Network and Mesh Network.**	**a)** Every device that communicates on the Internet, whether it be a personal computer, a tablet, a smartphone, or anything else, is assigned a unique identifying number called an IP (Internet Protocol) address. **b)** Presently we are using IPv4 (version 4), IPv6 standards Ex: domain wikipedia.org has the IP address of 107.23.196.166.
11. Domain Name	**12. Wi-Fi**

a) A Domain Name is a human-friendly name for a device on the Internet.
b) These names generally consist of a descriptive text followed by the top-level domain (TLD). For example, Wikipedia's domain name is wikipedia.org;

a) Wi-Fi stands for wireless fidelity. Wi-Fi is a technology that takes an Internet signal and converts it into radio waves.
b) These radio waves can be picked up within a radius of approximately 65 feet by devices with a wireless adapter.
c) Each new specification improved the speed and range of Wi- Fi, allowing for more uses. One of the primary places where Wi-Fi is being used is in the home.
d) However, with increase in smart phone sales, Wi-Fi hotspot services are being provided at various public places to provide better customer service.

13. Voice over Internet Protocol (VoIP)

a) A growing class of data being transferred over the Internet is Voice Data.
b) A protocol called VoIP enables sounds to be converted to a digital format for transmission over the Internet and then recreated at the other end.
c) By using many existing technologies and software, voice communication over the Internet is now available to anyone with a browser (think Skype, Google Hangouts, Whatsapp calls).

14. Cache Memory

a) Cache is a smaller, faster memory, which stores copies of the data from the most frequently used main memory locations.
b) These copies can be accesses by Processor/Registers more rapidly than main memory.
c) Cache memory can be used in order to bridge the speed differences between Registers and Primary memory.
d) The cache acts as temporary memory and boosts processing power.
e) It is the property of locality of reference that improves effective memory access time in a computer.

15. Virtual Memory

a) Virtual Memory is in fact not a separate device but an imaginary memory area supported by some operating systems in conjunction with the hardware.
b) If a computer lacks the Random-Access Memory (RAM) needed to run a program or operation, OS uses virtual memory to compensate.
c) Virtual memory combines computer's RAM with temporary space on the hard disk.
d) When RAM runs low, virtual memory moves data from RAM to a space called a paging file. Moving data to and from the paging file frees up RAM to complete its work.
e) Thus, Virtual memory is an allocation of hard disk space to help RAM.

'B' CATEGORY

16. Registers

These are high speed memory units within CPU for storing small amount of data (mostly 32 or 64 bits).

17. Random Access Memory (RAM)

a) This is Read Write memory whose main purpose is to hold program and data while they are in use. Information can be read as well as modified.
b) It is responsible for storing the instructions and data that the computer is using at that present moment.
c) Volatile in nature means Information is lost as soon as power is turned off.

18. Read Only Memory (ROM)

19. Software

a) This is non-volatile in nature (contents remain even in absence of power). b) Usually, these are used to store small amount of information for quick reference by CPU. c) Information can be read not modified. d) Generally used by manufacturers to store data and programs like translators that is used repeatedly.	**Software** is defined as a set of instructions that tell the hardware what to do. Software is created through the process of programming. Without software, the hardware would not be functional.
20. Application Software	**21. Computer Network**
It is a collection of programs which address a real-life problem of its end users which may be business or scientific or any other problem. EX.MS-OFFICE, TALLY etc.	a) Computer network is a collection of computers and other hardware interconnected by communication channels that allow sharing of resources and information. b) Each component, namely the computer in a computer network is called a 'Node'.
22. Routing	**23. Bandwidth**
It refers to the process of deciding on how to communicate the data from source to destination in a network.	It refers to the amount of data which can be sent across a network in given time.
24. Resilience	**25. Contention**
It refers to the ability of a network to recover from any kind of error like connection failure, loss of data etc.	It refers to the situation that arises when there is a conflict for some common resource in a network. *For example, network contention could arise when two or more computer systems try to communicate at the same time.*
26. Repeater	**27. MAC Address**
a) A repeater regenerates the signal over the same network before the signal becomes too weak or corrupted to extend the length to which the signal can be transmitted over the same network. b) They do not amplify the signal, when the signal becomes weak, they copy the signal bit by bit and generate it at the original strength.	**MAC Address:** These are most often assigned by the manufacturer of a Network Interface Controller (NIC) and are stored in its hardware, such as the card's read-only memory or some other firmware mechanism.
28. Switch	**29. Domain Name System (DNS)**
A network device that connects multiple devices together and filters packets based on their destination within the connected devices.	DNS which acts as the directory on the Internet. When a request to access a device with a domain name is given, a DNS server is queried. It returns the IP address of the device requested, allowing for proper routing.
30. Transmission Mode	**31. Packet Switching**
a) It is used to define the direction of signal flow between two linked devices. There are three types of transmission modes characterized as per the direction of the exchanges: b) **Simplex** (wherein the data flows in only one direction- unidirectional), c) **Half-Duplex** (where in the data flows in one direction or the other, but not both at the same time) and d) **Full Duplex** (in which the data flows in both directions simultaneously).	a) When a packet is sent from one device out over the Internet, it does not follow a straight path to its destination. b) Instead, it is passed from one router to another across the Internet until it is reaches its destination. c) In fact, sometimes two packets from the same message will take different routes. Sometimes, packets will arrive at their destination out of order. When this happens, the receiving device restores them to their proper order.

'C' CATEGORY

32. Input	33. Process
Data is collected from an organization or from external environments and converted into suitable format required for processing.	A process is a series of steps undertaken to achieve desired outcome or goal.
34. Output	**35. Hardware**
Then information is stored for future use or communicated to user after application of respective procedure on it.	**a)** It is the tangible portion of our computer systems, something we can touch and see. **b)** It consists of devices that perform the functions of input, processing, data storage and output activities of the computer.
36. Input Devices	**37. Processing Devices**
Input devices are devices through which we interact with the systems. Some examples of input devices includes Keyboard, Mouse, Scanners, Bar Code, MICR readers, Webcams, Microphone and Stylus/ Touch Screen.	The Central Processing Unit (CPU or microprocessor) is the actual hardware that interprets and executes the program (software) instructions and coordinates how all the other hardware devices work together.
38. Data Storage Devices	**39. Output Devices**
They refer to the memory where data and programs are stored.	Computers systems provide output to decision makers at all levels in an enterprise to solve business problems, the desired output may be in visual, audio or digital forms. Most common examples of output devices are Speakers, Headphones, Screen (Monitor), Printer, Plotter etc.
40. Secondary Memory	**41. Connection Oriented Networks**
The secondary memory devices are non-volatile (contents are permanent in nature), greater capacity (they are available in large size), greater economy (the cost of these is lesser compared to register and RAMs). Ex: USB Pen Drives, Floppy drive, Hard Drive, CD, DVD and Smart cards.	In this method connection is first established and then data is exchanged like it happens in case of telephone networks.
42. Connectionless Networks	**43. Packet**
In this method no prior connection is made before data exchanges. Data which is being exchanged in fact has a complete contact information of recipient and at each intermediate destination it is decided how to proceed further.	The fundamental unit of data transmitted over the Internet. When a device intends to send a message to another device, it breaks the message down into smaller pieces, called packets. Each packet has the sender's address, the destination address, a sequence number.
44. Protocol	
Protocol: In computer networking, a protocol is the set of rules that allow two (or more) devices to exchange information back and forth across the network.	

Copyrights Reserved
To **MASTER MINDS**, Guntur

2. DATA AND DBMS

'A' CATEGORY

1. Database Model

It determines the logical structure of a database and fundamentally determines in which manner data can be stored, organized and manipulated.

2. Relational Database

a) It allows the definition of data and their structures, storage and retrieval operations and integrity constraints that can be organized in a table structure.

b) A table is a collection of records and each record in a table contains the same fields, which define the nature of the data stored in the table.

c) Keys are commonly used to join or combine data from two or more tables.

3. Object-Oriented Database

a) An object- oriented database (also referred to as object-oriented database management system or OODBMS) is a set of objects.

b) It provides a mechanism to store complex data such as images, audio and video, etc.

c) An object-oriented database management system is a relational database designed to manage all these independent programs, using the data produced to quickly respond to requests for information by a larger application.

d) Object-oriented programming is based on a series of working objects. Each object is an independently functioning application or program, assigned with a specific task or role to perform.

4. Big data

a) A new buzzword that has been capturing the attention of businesses lately is big data.

b) The term refers to such massively large data sets that conventional database tools do not have the processing power to analyze them.

c) For example, WalMart must process over one million customer transactions every hour.

MASTER MINDS

5. Data Mining

a) Data Mining is the process of analyzing data to find previously unknown trends, patterns, and associations to make decisions.

b) Generally, data mining is accomplished through automated means against extremely large data sets, such as a data warehouse.

c) EX: A baseball team may find that collegiate baseball players with specific statistics in hitting, pitching, and fielding make for more successful major league players.

6. Database Management Systems (DBMS)

DBMS is a software system that helps in organizing, controlling and using the data needed by the application program. It is basically just a computerized record keeping.

7. 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.

(MAY 18 QP, MTP2, MAY 19)

8. Data Warehouse

a) Data warehouse is a repository of an organization's electronically stored data.

b) This is a module that can be accessed by an organizations customers, suppliers and employees.

c) This classic definition of the data warehouse is to retrieve and analyze data, to extract, transform and load data, and to manage the data dictionary are also considered essential components **(MAY 18 QP, MTP2, MAY 19)**

'B' CATEGORY

9. Database	10. Hierarchical Database Model
A database is an organized collection of related information.	**a)** In Hierarchical Database Model, records are logically organized into a hierarchy of relationships. **b)** A hierarchically structured database is arranged logically in an inverted tree pattern. **c)** All records in hierarchy are called Nodes. Each node is related to the others in a parent child relationship. **d)** Each parent record may have one or more child records, but no child record may have more than one parent record.
11. Data	**12. Network Model**
Data are the raw bits and pieces of information with no context. Data can be quantitative or qualitative. Quantitative data is numeric, Qualitative data is descriptive.	**a)** A network database structure views all records in sets. Each set is composed of an owner record and one or more member records. **b)** However, unlike the hierarchical mode, the network model also permits a record to be a member of more than one set at one time. **c)** This feature allows the network model to implement the many-to-one and the many-to-many relationship types.
13. Data Analytics	**14. Data mining**
a) **Data Analytics** is the process of examining data sets to draw conclusions about the information they contain, increasingly with the aid of specialized systems and software. **b)** **Data Analytics** initiatives can help businesses increase revenues, improve operational efficiency, optimize marketing campaigns and customer service efforts, respond more quickly to emerging market trends and gain a competitive edge over rivals -- all with the ultimate goal of boosting business performance. **(NOV 18 QP)**	**Data mining,** involves sorting through large data sets to identify trends, patterns and relationships; predictive analytics, which seeks to predict customer behavior, equipment failures and other future events;
15. E-commerce	
E-commerce companies and marketing services providers do click stream analysis to identify **website visitors who are more likely to buy a product or service based on navigation and page**-viewing patterns.	

'C' CATEGORY

16. Text mining	
Text mining provides a means of analyzing documents, emails and other text-based content.	

Copyrights Reserved
To **MASTER MINDS**, Guntur

3. INFORMATION SYSTEMS RISKS AND CONTROLS

'A' CATEGORY

1. Control

a) Controls are defined as policies, procedures, practices, and organization structure ensure that the business objectives are achieved and undesired risk events are prevented, detected and corrected.

b) An information systems auditing includes reviewing the implemented system or providing consultation and evaluating the reliability of operational effectiveness of controls.

2. Preventive Controls

Preventive Controls are those inputs, which are designed to prevent an error, omission or malicious act occurring. These controls prevent errors, omissions, or security incidents from occurring. Any control can be implemented in both manual and computerized environment for preventive purpose.

Some of the examples of Preventive Controls are:

a) Employment of qualified personnel
b) Segregation of duties
c) Access control
d) Anti-virus software (sometimes this acts like a corrective control also), etc
e) User instruction manuals.
f) Firewalls, Passwords.

3. Detective Controls

a) **Detective Controls:** These controls are designed to detect errors, omissions or malicious acts that occur and report the occurrence. In other words, Detective Controls detect errors or incidents that elude preventive controls.

b) For example, a detective control may identify account numbers of inactive accounts or accounts that have been flagged for monitoring of suspicious activities.

4. Corrective Controls

It is desirable to correct errors, omissions, or incidents once they have been detected. They vary from simple correction of data-entry errors, to identifying and removing unauthorized users or software from systems or networks, to recovery from incidents, disruptions, or disasters.

MASTER MINDS

5. Data Diddling

This involves the change of data before or after they entered the system. A limited technical knowledge is required to data diddle and the worst part with this is that it occurs before computer security can protect the data.

6. Cryptography

a) 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.

b) 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).

(NOV 18)

7. Logical Access Controls

These are the controls relating to logical access to information resources such as data and programs is restricted to authorized users to safeguard information against unauthorized use, disclosure or modification, damage or loss. Logical access controls are the system-based mechanisms used to designate who or what is to have access to a specific system resource and the type of transactions and functions that are permitted.

8. Salami Techniques

This involves slicing of small amounts of money from a computerized transaction or account. A Salami technique is slightly different from a rounding technique in the sense a fix amount is deducted.

9. Rounding Down	
This refers to rounding of small fractions of a denomination and transferring these small fractions into an authorized account. As the amount is small, it gets rarely noticed.	

'B' CATEGORY

10. Environmental Controls	11. Bomb
These are the controls relating to IT environment such as power, air-conditioning, Uninterrupted Power Supply (UPS), smoke detection, fire extinguishers, dehumidifiers etc. **(MTP1, MAY 19)**	Bomb is a piece of bad code deliberately planted by an insider or supplier of a program. An event, which is logical, triggers a bomb or time based. The bombs explode when the conditions of explosion get fulfilled causing the damage immediately.
12. Worm	**13. Spoofing**
A worm does not require a host program like a Trojan to relocate itself. Thus, a Worm program copies itself to another machine on the network. Since, worms are standalone programs, and they can be detected easily in comparison to Trojans and computer viruses.	A spoofing attack involves forging one's source address. One machine is used to impersonate the other in spoofing technique. Spoofing occurs only after a particular machine haseen identified as vulnerable.
14. Personal Identification Number (PIN)	
PIN is similar to a password assigned to a user by an institution, It is a random number stored in its database independent to a user identification details, or a customer selected number. Hence, a PIN may be exposed to vulnerabilities while issuance or delivery, validation, transmission and storage.	

'C' CATEGORY

15. Christmas Card	16. Trap Doors
It is a well-known example of Trojan and was detected on internal E-mail of IBM system. On typing the word 'Christmas', it will draw the Christmas tree as expected, but in addition, it will send copies of similar output to all other users connected to the network. Because of this message on other terminals, other users cannot save their half finished work.	Trap doors allow insertion of specific logic, such as program interrupts that permit a review of data. They also permit insertion of unauthorized logic.

Copyrights Reserved
To **MASTER MINDS**, Guntur

4. INFORMATION SYSTEMS AUDITING

'A' CATEGORY

1. Snapshots	2. System Control Audit Review File (SCARF)
a) Tracing a transaction in a computerized system can be performed with the help of snapshots or extended records. b) The snapshot software is built into the system at those points where material processing occurs which takes images of the flow of any transaction as it moves through the application. c) These images can be utilized to assess the authenticity, accuracy, and completeness of the processing carried out on the transaction.	The SCARF technique involves embedding audit software modules within a host application system to provide continuous monitoring of the system's transactions. The information collected is written onto a special audit file called the SCARF master files. Auditors then examine the information contained on this file to see if some aspect of the application system needs follow-up.
3. Audit Trails	**4. Segregation of Duties (SOD)**
Audit Trails are logs that can be designed to record activity at the system, application, and user level. When properly implemented, audit trails provide an important detective control to help accomplish security policy objectives. Audit trail controls attempt to ensure that a chronological record of all events that have occurred in a system is maintained.	It is also known as separation of duties, ensures that single individuals do not possess excess privileges that could result in unauthorized activities such as fraud or the manipulation or exposure of sensitive data.

'C' CATEGORY

5. Information Systems Auditing	6. Job Title
It is defined as the process of attesting objectives (those of the external auditor) that focus on asset safeguarding, data integrity and management objectives (those of the internal auditor) that include effectiveness and efficiency both. **(MAY 18 QP, MAY 18 RTP)**	a) A Job Title is a label that is assigned to a job description. It denotes a position in the organization that has a given set of responsibilities, and which requires a certain level and focus of education and prior experience. b) Job titles in IT have matured and are quite consistent across organizations. This consistency helps organizations in several ways.

5. BUSINESS PROCESS AUTOMATION

'A' CATEGORY

1. Business Process	2. OPERATIONAL PROCESSES (OR PRIMARY PROCESSES)
A **Business Process** is an activity or set of activities that will accomplish a specific organizational goal.	These processes deliver value to the customer by helping to produce a product or service. Operational processes represent essential business activities that accomplish business objectives. Examples: Generating revenue - Order to Cash cycle, Procurement - Purchase to Pay cycle.

3. Supporting Processes (OR Secondary Processes)	4. Business Process Automation (BPA) (MTP1, MAY 19, MAY 19 QP)
Supporting Processes back core processes and functions within an organization. One key differentiator between operational and support processes is that support processes do not provide value to customers directly. Examples: Accounting, Human Resource (HR) Management .	**a)** It can be defined as removing the human element from existing business processes by automating the repetitive or standardized process components. **b)** BPA is the technology-enabled automation of company activities, including sales, management, operations, supply chain, human resources, information technology, etc.
5. Confidentiality	**6. Integrity**
To ensure that data is only available to persons who have right to see the same;	To ensure that no un-authorized amendments can be made in the data;
7. Availability	**8. Timeliness**
To ensure that data is available when asked for; and	To ensure that data is made available in at the right time.
9. Enterprise Risk Management (ERM)	**10. Flowchart**
It may be defined as a process, designed to identify potential events that may affect the entity, and manage risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives. **(NOV 18 QP, MTP2, MAY 19)**	A Flowchart is a diagram prepared by the programmer of the sequence of steps involved in solving a problem. **a)** It is an essential tool for programming and illustrates the strategy and thread of logic followed in the program. **b)** A flowchart helps the programmer avoid fuzzy thinking and accidental omissions of intermediate steps. **(MAY 18 QP)**
11. Document Flowchart	**12. System Flowchart**
This flowchart traces the physical flow of documents through an organization – that is, the flow of documents from the departments, groups, or individuals who first created them to their final destinations.	This typically depicts the electronic flow of data and processing steps in an Information System. While Document Flowcharts focus on tangible documents, system flowchart concentrates on the computerized data flows of Information systems.
13. Program Flowchart	**14. Data Flow Diagrams (DFDs)**
It is most detailed and is concerned with the logical/arithmetic operations on data within the CPU and the flow of data between the CPU on the one hand and the input/output peripherals on the other.	DFD basically provides an overview of: **a)** What data a system processes; **b)** What transformations are performed; **c)** What data are stored; **d)** What results are produced and where they flow. It is mainly used by technical staff for graphically communicating between systems analysts and programmers. **(NOV 18 QP)**
'B' CATEGORY	
15. Management Processes	**16. Risk Assessment**
Management processes measure, monitor and control activities related to business procedures and systems. Like supporting processes, management processes do not provide value directly to the customers. However, it has a direct impact on the efficiency of the enterprise. Examples: internal communications, governance, strategic planning, budgeting.	**a)** 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. **b)** Thus, risk assessment forms the basis for determining how risks will be managed. **(MAY 18 QP)**

MASTER MINDS

'C' CATEGORY	
17. Risk Avoidance	**18. Risk Reduction**
Risk Avoidance: exiting the activities giving rise to risk.	Taking action to reduce the likelihood or impact related to the risk.
19. Risk Alternative Actions	**20. Risk Share or Insure**
Deciding and considering other feasible steps to minimize risks.	Transferring or sharing a portion of the risk, to finance it.
21. Risk Accept	
No action is taken, due to a cost/benefit decision.	

6. BPA RISKS AND CONTROLS

'A' CATEGORY	
1. RISK	**2. Application Controls**
As per International Organization for Standardization (ISO): **Risk** is uncertainty in achieving objectives. Risk can be positive or negative. **Risk** may be defined as the possibility that an event will occur and adversely affect the achievement of objectives.	**Application Controls** are designed to ensure completeness, accuracy, authorization and validity of data capture and transaction processing.
3. Strategic Risk	**4. Financial Risk**
Risk that would prevent an organization from accomplishing its objectives (meeting its goals).	Risk that could result in a negative financial impact to the organization (waste or loss of assets).
5. Regulatory Risk(Compliance)	**6. Reputational Risk**
Risk that could expose the organization to fines and penalties from a regulatory agency due to non-compliance with laws and regulations.	Risk that could expose the organization to negative publicity.
7. Operational Risk	**8. Control**
Risk that could prevent the organization from operating in the most effective and efficient manner or be disruptive to other operations.	It is defined as policies, procedures, practices and organization structure that are designed to provide reasonable assurance that business objectives are achieved and undesired events are prevented or detected and corrected.
9. Internal Controls	**10. Segregation of Duties (SOD)**
Internal Controls are a system consisting of specific policies and procedures designed to provide management with reasonable assurance that the goals and objectives it believes important to the entity will be met. **(MAY 18 QP)**	Segregation of Duties (SOD) is the process of assigning different people the responsibilities of authorizing transactions, recording transactions, and maintaining custody of assets. Segregation of duties is intended to reduce the opportunities to allow any person to be in a position to both perpetrate and conceal errors or fraud.
11. Procure to Pay (Purchase to Pay or P2P)	**12. Order to Cash (OTC or O2C)**
a) Procure to Pay (Purchase to Pay or P2P) is the process of obtaining and managing the raw materials needed for manufacturing a product or providing a service. **b)** It involves the transactional flow of data that is sent to a supplier as well as the data that surrounds the fulfillment of the actual order and payment for the product or service. **(MTP1, MAY 19)**	Order to Cash (OTC or O2C) is a set of business processes that involve receiving and fulfilling customer requests for goods or services. **a)** It is a set of business processes that involve receiving and fulfilling customer requests for goods or services. An order to cash cycle consists of multiple sub-processes including: **(NOV 18 RTP)**
13. Human Resources life cycle	**14. Web Defacement**

The Human Resources life cycle refers to human resources management and covers all the stages of an employee's time within a specific enterprise and the role the human resources department plays at each stage.	The homepage of a website is replaced with a pornographic or defamatory page. Government sites generally face the wrath of hackers on symbolic days.
15. Cyber Terrorism	**16. Phishing**
Many terrorists use virtual (Drive, FTP sites) and physical storage media (USB's, hard drives) for hiding information and records of their illicit business.	Phishing involves fraudulently acquiring sensitive information through masquerading a site as a trusted entity (e.g. Passwords, credit card information).
17. Cybercrimes	
Cybercrimes is defined as: "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. **(MAY 18 QP)**	
'B' CATEGORY	
18. Internal Control System (MAY 18 RTP)	**19. Risk Assessment**
Internal Control System" means all the policies and procedures adopted by the management of an entity to assist in achieving management's objective of ensuring, as far as practicable, the orderly and efficient conduct of its business, including adherence to management policies, the safeguarding of assets, the prevention and detection of fraud and error, the accuracy and completeness of the accounting records, and the timely preparation of reliable financial information.	**c)** 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. **d)** Thus, risk assessment forms the basis for determining how risks will be managed.
20. Masters	**21. Inventory Cycle**
Masters refer to the way various parameters are set up for all modules of software, like Purchase, Sales, Inventory, Finance etc. The masters are set up first time during installation and these are changed whenever the business process rules or parameters are changed. (B) Ex: **a)** Vendor Master: Credit period, vendor bank account details, etc. **b)** Customer Master: Credit limit, Bill to address, Ship to address, etc.	The Inventory Cycle is a process of accurately tracking the on-hand inventory levels for an enterprise. An inventory system should maintain accurate record of all stock movements to calculate the correct balance of inventory.
22. Communication	
Communication is the continual, iterative process of providing, sharing, and obtaining necessary information. Internal communication is how information is disseminated throughout the enterprise, flowing up, down, and across the entity. External communication provides information to external parties in response to requirements and expectations.	
'C' CATEGORY	

MASTER MINDS

23. Control Activities	24. General Controls
Control Activities are the actions established through policies and procedures that help ensure that management's directives to mitigate risks to the achievement of objectives are carried out. Control activities are performed at all levels of the entity and may be preventive or detective in nature.	General Controls include controls over information technology management, information technology infrastructure, security management and software acquisition, development and maintenance. These controls apply to all systems - from mainframe to client/server to desktop computing environments.
25. Configuration	**26. Transactions**
Configuration is the methodical process of defining options that are provided. When any software is installed, values for various parameters should be set up (configured) as per policies and business process work flow and business process rules. Configuration will define how software will function and what menu options are displayed. Ex: Control on parameters: Creation of Customer Type, Vendor Type, year-end process	Transactions refer to the actual transactions entered through menus and functions in the application software, through which all transactions for specific modules are initiated, authorized or approved. For example: **i)** sales transactions **ii)** purchase transactions **iii)** stock transfer transactions
27. Email Account Hacking	**28. Credit Card Fraud**
If victim's email account is hacked and obscene emails are sent to people in victim's address book.	Unsuspecting victims would use infected computers to make online transactions.
29. "Access"	**30. "Computer"**
"Access" with its grammatical variations and cognate expressions means gaining entry into, instructing or communicating with the logical, arithmetical, or memory function resources of a computer, computer system or computer network;	"Computer" means any electronic, magnetic, optical or other high-speed data processing device or system which performs logical, arithmetic, and memory functions by manipulations of electronic, magnetic or optical impulses, and includes all input, output, processing, storage, computer software, or communication facilities which are connected or related to the computer in a computer system or computer network;
31. "Computer Network"	**32. "Data"**
"Computer Network" means the interconnection of one or more Computers or Computer systems or Communication device through-The use of satellite, microwave, terrestrial line, wire, wireless or other communication media;	"Data" means a representation of information, knowledge, facts, concepts or instructions which are being prepared or have been prepared in a formalized manner, and is intended to be processed, is being processed or has been processed in a computer system or computer network and may be in any form (including computer printouts magnetic or optical storage media, punched cards, punched tapes) or stored internally in the memory of the computer;
33. "Information"	**34. Sensitive Personal Data Information (SPDI)**
"Information" includes data, message, text, images, sound, voice, codes, computer programmes, software and databases or micro film or computer generated micro fiche;	Reasonable Security Practices and Procedures and Sensitive Personal Data or Information Rules 2011 formed under section 43A of the Information Technology Act 2000 define a data protection framework for the processing of digital data by Body Corporate.
35. Personal Information	**36. Control Environment**

"Information that relates to a natural person which either directly or indirectly, in combination with other information available or likely to be available with a body corporate, is capable of identifying such person." Example for personal information : **a)** Passwords **b)** Financial information **c)** Physical/physiological/mental health condition **d)** Sexual orientation **e)** Medical records and history; and **f)** Biometric information	**a)** The Control Environment is the set of standards, processes, and structures that provide the basis for carrying out internal control across the organization. **b)** The control environment comprises the integrity and ethical values of the organization; the parameters enabling the board of directors to carry out its governance responsibilities; and the rigor around performance measures, incentives, and rewards to drive accountability for performance.

7. FINANCIAL AND ACCOUNTING SYSTEMS

'A' CATEGORY

1. System

1. The word "system" can be explained as, "a set of detailed methods, procedures and routines created to carry out a specific activity, perform a duty, or solve a problem".
2. It is an organized, purposeful structure that consists of interrelated and interdependent elements (components, entities, factors, members, parts etc.)

2. Integrated System

An **Integrated System** that has combined different functions together in order to work as one entity and maintaining data in a centralized manner. Central database is the main characteristics of an integrated ERP system.

3. Non-Integrated System

A **Non-Integrated System** is a system of maintaining data in a decentralized way. Each department shall maintain its own data separately and not in an integrated way. In case of non-integrated systems, separate database is maintained by each department separately.

4. MASTER DATA

1. Relatively permanent data not expected to change frequently. **(MAY 18 QP, MAY 19, MTP1)**
2. Master data is generally not typed by the user, it is selected from the available list.
3. Master data entry is usually done less frequently say once a year or when there is a need to update. **(NOV 18 RTP)**

Eg.: Accounting Master Data, Inventory Master Data, Payroll Master Data, Statutory Master Data

5. NON-MASTER DATA

a) Non-permanent data and expected to change frequently. It is also called Transaction Data
b) Non-master data is typed by the user and not selected from available list as it is a non-permanent and it keeps on changing again and again.

E.g.: Date recorded in each transaction is expected to change again and again and will not be constant in all the transactions.

(MAY 19 QP, MTP1, MAY 19)

6. FRONT END

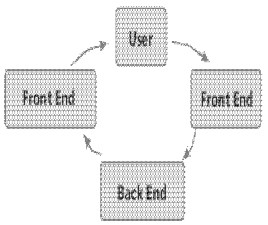
Front End - It is part of the overall software which actually interacts with the user who is using the software.

(MAY 18 QP)

7. Back End

It is a part of the overall software which does not directly interact with the user, but interact with Front End only.

(MAY 18 QP)



8. Installed Applications

Installed Applications are programs installed on the hard disc of the user's computer.

9. Web Applications

10. ERP System

Web Applications are not installed on the hard disc of the user's computer, it is installed on a web server and it is accessed using a browser and internet connection. **(NOV 18 QP)**	1. ERP is an enterprise-wide information system designed to coordinate all the resources, information, and activities needed to complete business processes such as order fulfillment or billing. 2. An ERP system is based on a common database and a modular software design. 3. Some of the well-known ERPs in the market today include SAP, Oracle, MFG Pro, MS Axapta etc. **(MAY 19 RTP)**
11. Ideal ERP System	**12. Customer Relationship Management**
1. An **Ideal ERP System** is that system which caters all types of needs of an organization and provides right data and right point of time to right users for their purpose. 2. Generally, an ideal ERP system is that system where a single database is utilized and contains all data for various software modules. **(MAY 18 QP)**	1. CRM is a term applied to processes implemented by a company to handle its contact with its customers. 2. CRM software is used to support these processes, storing information on current and prospective customers. 3. The rationale behind this approach is to improve services provided directly to customers and to use the information in the system for targeted marketing.**(MAY 19 QP, MAY 18 RTP)**
13. Role Based Access Control (RBAC)	**14. Rules-based Access Control (RAC)**
a) It is a policy neutral access control mechanism defined around roles and privileges. b) The components of RBAC such as role-permissions, user-role and role-role relationships make it simple to perform user assignments. c) RBAC can be used to facilitate administration of security in large organizations with hundreds to thousands of users and thousands of permissions. **(MAY 19, MTP1)**	a) RAC takes into account the data affected, the identity attempting to perform a task, and other triggers governed by business rules. b) RAC uses specific rules that indicate what can and cannot happen between a subject/ user and an object. A manager, for example, has the ability to approve his/her employees' hours worked. c) RAC can be used to facilitate administration of security in small to medium sized organizations with hundreds of users and limited permissions.
15. Human Resource Module	**16. Supply Chain Module**
a) This module enhances the work process and data management within HR department of enterprises. b) Right from hiring a person to evaluating one's performance, managing promotions, compensations, handling payroll and other related activities of an HR is processed using this module. c) The task of managing the details and task flow of the most important resource i.e. human resource is managed using this module. **(NOV 18 QP)**	a) This module provides extensive functionality for logistics, manufacturing, planning, and analytics. b) Enterprises can optimize their supply chain for months in advance; streamline processes such as supply network, demand, and material requirement planning; create detailed scheduling; refine production integration, and maximize transportation scheduling.
17. XBRL Tagging	**18. Extensible Business Reporting Language (XBRL)**
XBRL Tagging is the process by which any financial data is tagged with the most appropriate element in an accounting taxonomy (a dictionary of accounting terms) that best represents the data in addition to tags that facilitate identification/classification (such as enterprise, reporting period, reporting currency, unit of measurement etc.).	**Extensible Business Reporting Language (XBRL)** - an international standards-based business reporting language developed by accountants for financial reporting; c) **XBRL** is a freely available and global standard for exchanging business information. d) **XBRL** lets reporting information move between organizations rapidly, accurately and digitally. e) **XBRL** is a standards - based way to communicate and exchange business information between business systems.
19. Book keeping life cycle	

MASTER MINDS

Accounting or Book keeping cycle covers the business processes involved in recording and processing accounting events of a company. It begins when a transaction or financial event occurs and ends with its inclusion in the financial statements.	

'B' CATEGORY

20. Process	21. Business Process
In the systems engineering arena, a **Process** is defined as a sequence of events that uses inputs to produce outputs. From a business perspective, a **Process** 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)** A Business Process consists of a set of activities that are performed in coordination in an organizational and technical environment. **b)** These activities jointly realize a business goal.
22. Financial Accounting Module	**23. Controlling Module**
This module is the most important module of the overall ERP System and it connects all the modules to each other. Every module is somehow connected with module.	This module helps in analyzing the actual figures with the planned data and in planning business strategies. Two kinds of elements are managed in Controlling -Cost Elements and Revenue Elements. These elements are stored in the Financial Accounting module.
24. Sales & Distribution Module	**25. Material Management (MM) Module**
It is used by organizations to support sales and distribution activities of products and services, starting from enquiry to order and then ending with delivery.	Material Management (MM) Module as the term suggests manages materials required, processed and produced in enterprises.
26. Quality Management Module	**27. Basel III**
1. This quality management module helps an organization to accelerate their business by adopting a structured and functional way of managing quality in different processes. 2. Quality Management module collaborates in procurement and sales, production, planning, inspection, notification, control, audit management and so on.	**Basel III** is a comprehensive set of reform measures, developed by the Basel Committee on Banking Supervision, to strengthen the regulation, supervision and risk management of the banking sector. These measures aim to improve the banking sector's ability to absorb shocks arising from financial and economic stress, whatever the source and to improve risk management and governance.

'C' CATEGORY

28. Report	29. Text mining
A **Report** simply means presentation of information in proper and meaningful way. The basic purpose of any Financial and Accounting system is to give right information at right point of time to right people for right decision making. **(MAY 19 RTP)**	**Text mining** provides a means of analyzing documents, emails and other text-based content.

30. Regulatory Compliance	31. Plant Maintenance Module
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. Regulatory compliance is an organization's adherence to laws, regulations, guidelines and specifications relevant to its business.	**a)** This is a functional module which handles the maintaining of equipment and enables efficient planning of production and generation schedules. **b)** It supports cost-efficient maintenance methods, such as risk-based maintenance or preventive maintenance, and provides comprehensive outage planning and powerful work order management.

8. CORE BANKING SYSTEMS

'A' CATEGORY

1. Application Controls	2. General Controls
a) Application Controls are controls which are implemented in an application to prevent or detect and correct errors. **b)** These controls are in-built in the application software to ensure accurate and reliable processing. **c)** Application controls ensure that all transactions are authorized, complete and accurate. Application Controls pertain to the scope of individual business processes or application systems.	**General Controls,** also known as Infrastructure Controls pervade across different layers of IT environment and information systems. General Controls are pervasive controls and apply to all systems components, processes, and data for a given enterprise or systems environment.
3. Core Banking Solution (CBS)	**4. Customer Identification File (CIF)**
a) **Core Banking Solution (CBS)** refers to a common IT solution wherein a central shared database supports the entire banking application. **b)** CBS is centralized Banking Application software that has several components which have been designed to meet the demands of the banking industry. **c)** Further, the CBS is modular in structure and is capable of being implemented in stages as per requirements of the bank.	Customer Identification File (CIF) is a digital or virtual file where the customer identity details with a valid photo ID and address details are stored and given a unique number which is called CIF number. A customer may have many accounts of different nature, like current account, savings account, loans etc., but all these accounts will be mapped to one CIF only.
5. Proxy Server	**6. Web 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. **(NOV 18 QP)**	The **Web Server** is used to host all web services and internet related software. All the online requests and websites are hosted and serviced through the web server. A Web server is a program that uses HTTP (Hypertext Transfer Protocol) to serve the files that form Web pages to users, in response to their requests, which are forwarded by their computers' HTTP clients. Dedicated computers and appliances may be referred to as Web servers as well.

MASTER MINDS

7. Money Laundering	8. Cyber Crimes
a) **Money Laundering** is 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. b) The objective in money laundering is to conceal the existence, illegal source, or illegal application of income to make it appear legitimate. c) Money laundering is commonly used by criminals to make "dirty" money appear "clean" or the profits of criminal activities are made to appear legitimate. **(MAY 19, MTP2, MAY 18 RTP)**	Cybercrime also known as computer crime is a crime that involves use of a computer and a network. The computer may have been used in committing a crime, or it may be a target. cyber-crimes are defined as "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."
9. Basel III	
Basel III is a comprehensive set of reform measures, developed by the Basel Committee on Banking Supervision, to strengthen the regulation, supervision and risk management of the banking sector. These measures aim to improve the banking sector's ability to absorb shocks arising from financial and economic stress, whatever the source to improve risk management and governance. One of the dimensions of Basel III is determining capital adequacy based on risk assessment.	

'B' CATEGORY

10. ECS Credit	11. ECS Debit
In the case of **ECS credit**, there is a single receiver of funds from a large number of customers. The beneficiary (i.e., the receiver of funds) obtains mandate from its customers to withdraw funds from their specified Bank accounts on a specific date.	In the case of **ECS debit**, there is a single account to be debited against which many accounts with a number of banks in the same clearing house area are credited. This system is useful for distribution of dividend interest, payment of salaries by large units, etc.
12. Automated Teller Machines (ATM) Channel Server	**13. Internet Banking Channel Server (IBCS)**
This server contains the details of ATM account holders. Soon after the facility of using the ATM is created by the Bank, the details of such customers are loaded on to the ATM server. When the Central Database is busy with central end-of- day activities or for any other reason, the file containing the account balance of the customer is sent to the ATM switch. Such a file is called Positive Balance File (PBF).	**IBCS (Internet Banking Channel Server)** software stores the user name and password of the entire internet banking customers. Please note that the ATM server does not hold the PIN numbers of the ATM account holders. IBCS server also contains the details about the branch to which the customer belongs. The Internet Banking customer would first have to log into the bank's website with the user name and password.
14. Internet Banking Application Server	**15. Server**
The **Internet Banking Software** which is stored in the IBAS (Internet Banking Application Server) authenticates the customer with the login details stored in the IBCS. Authentication process is the method by which the details provided by the customer are compared with the data already stored in the data server to make sure that the customer is genuine and has been provided with internet banking facilities.	a) The **Server** is a sophisticated computer that accepts service requests from b) Different machines called clients. The requests are processed by the server and c) Sent back to the clients. This server is a powerful and robust system as performs the entire core banking operations. There are different types of servers used in deploying CBS they are **(i)** Application Server **(ii)** Database Server **(iii)**

	Automated Teller Machine channel Server, **(iv)** Internet Banking Channel Server,**(v)** Internet Banking Application Server **(vi)** Web Server, **(vii)** Proxy Server, **(viii)** Anti-Virus Software Server, etc.

9. E-COMMERCE AND MCOMMERCE

'A' CATEGORY

1. E-commerce	2. Digital Library (NOV 18 QP)
a) E-commerce is the process of doing business electronically. **b)** It refers to the use of Technology to enhance the processing of commercial transactions between a company, its customers and its business partners.	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 (as opposed to print, microform, or other media), along with means for organizing, storing, and retrieving the files and media contained in the library collection.
3. Two Tier architecture	**4. Presentation Tier (Client Application / Client Tier)**
In a **Two-tier network**, client (user) sends request to Server and the Server responds to the request by fetching the data from it. The Two-tier architecture is divided into two tiers- **Presentation Tier and Database Tier.**	This is the interface that allows user to interact with the e-commerce / m-commerce vendor. User can login to an e-commerce vendor through this tier. This application also connects to database tier and displays the various products / prices to customers.
5. Database Tier (Data Tier)	**6. Application Tier**
The product data / price data and other related data are kept here. User has not access to data / information at this level but he/she can display all data / information stored here through application tier.	It is also called as Middle Tier, Logic Tier, Business Logic or Logic Tier; this tier is pulled from the presentation tier. It controls application functionality by performing detailed processing.
7. M-commerce	**8. Digital Payment**
M-commerce (mobile commerce) is the buying and selling of goods and services through wireless handheld devices such as cellular telephone and personal digital assistants (PDAs). M-commerce enables users to access the Internet without needing to find a place to plug in.	It is a way of payment which is made through digital modes. In digital payments, payer and payee both use digital modes to send and receive money. It is also called electronic payment. No hard cash is involved in the digital payments. All the transactions in digital payments are completed online. It is an instant and convenient way to make payments. **(NOV 18 QP)**
9. UPI Apps	
UPI 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. Currently, this service is only available for android phone users. There are too many good UPI apps available such as BHIM, SBI UPI app, HDFC UPI app.	

'B' CATEGORY

10. Web portal	11. Data Interchange
This shall provide the interface through which an individual /organization shall perform e-commerce transactions. These web portals can be accessed through desktops / laptops / PDA / hand- held computing devices / mobiles and now through smart TVs also.	It is an electronic communication of data. For ensuring the correctness of data interchange between multiple players in e-commerce, business specific protocols are being used.
12. Three Tier Architecture	**13. Immediate Payment Service (IMPS)**
Three-tier architecture is a client-server architecture in which the functional process logic, data access, computer data storage and user interface are developed and maintained as independent modules on separate platforms.	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.
14. Mobile Wallets	**15. Aadhaar Enabled Payment Service (AEPS)**
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, Freecharge, Buddy, MobiKwick etc.	Customer needs only his or her Aadhaar number to pay to any merchant. AEPS allows bank to bank transactions. It means the money 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.
16. Unstructured Supplementary Service Data (USSD)	**17. E-Wallet**
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) etc.	E-wallet or mobile wallet is the digital version of physical wallet with more functionality. User can keep his / her money in an E-wallet and use it when needed. Use the E-wallets to recharge phone, pay at various places and send money to friends. If user's have a smartphone and a stable internet connection, they can use E-wallets to make payments.
18. Credit Cards	**19. Debit Cards**
A small plastic card issued by a bank, or issuer etc., allowing the holder to purchase goods or services on credit. In this mode of payment, the buyer's cash flow is not immediately impacted. User of the card makes payment to card issuer at end of billing cycle which is generally a monthly cycle. Credit Card issuer charge customers per transactions / 5% of transaction as transaction fees.	A small plastic card issued by a bank. Allowing the holder to purchase goods or services on credit. In this mode of payment, the buyer's cash flow is immediately affected that as soon as payment is authorized buyers account is debited.
'C' CATEGORY	
20. Traditional Commerce	**21. E-commerce Vendors**
Traditional commerce includes all those activities which encourage exchange, goods / services which are manual and non-electronic.	This is the organization / entity providing the user, goods/ services asked for. For example: www.flipkart.com.
22. Architecture	**23. Net Banking**
It is a term to define the style of design and	In this mode, the customers log to his / her bank

method of construction, used generally for buildings and other physical structures. In e-commerce, it denotes the way network architectures are build.	account and makes payments. All public sectors, large private sector banks allow net banking facilities to their customers.
24. Payment Gateway	
The payment mode through which customers shall make payments. Payment gateway represents the way e-commerce / m-commerce vendors collects their payments. Presently numerous methods of payments by buyers to sellers are being used, including Credit / Debit Card Payments, Online bank payments, Third Party Payment wallets, like SBI BUDDY or PAYTM, Cash on Delivery (COD).	

10. EMERGING TECHNOLOGIES

'A' CATEGORY

1. Virtualization	2. Grid Computing
Virtualization means to create a virtual version of a device or resource, such as a server, storage device, network or even an operating system where the framework divides the resource into one or more execution environments. **(MTP2, MAY 19, NOV 18 QP, MAY 19 RTP)**	It is a computer network in which each computer's resources are shared with every other computer in the system. It is a distributed architecture of large numbers of computers connected to solve a complex problem. In the ideal grid computing system, every resource is shared, turning a computer network into a powerful supercomputer.
3. Cloud Computing	**4. Infrastructure as a Service (IaaS)**
a) **"The Cloud"** refers to applications, services, and data storage on the Internet. **b)** Cloud computing is the use of these services by individuals and organizations. You probably already using cloud computing in some forms. **c)** The best example of cloud computing is Google Apps where any application can be accessed using a browser and it can be deployed on thousands of computers through the Internet.	It is a hardware-level service, provides computing resources such as processing power, memory, storage, and networks for cloud users to run their application on-demand. This allows users to maximize the utilization of computing capacities without having to own and manage their own resources.
5. Software as a Service (SaaS)	**6. Security as a Service (SECaaS)**
SaaS provides ability to the end users to access an application over the Internet that is hosted and managed by the service provider.	**a)** It is an ability given to the end user to access the security service provided by the service provider on a pay-per-use basis. **b)** It is a new approach to security in which cloud security is moved into the cloud itself whereby cloud service users will be protected from within the cloud using a unified approach to threats.
7. Identity as a Service (IDaaS)	**8. Mobile Computing**
a) It is an ability given to the end users; typically an organization or enterprise; to access the authentication infrastructure that is built,	It refers to the technology that allows transmission of data via a computer without having to be connected to a fixed physical link. Mobile voice

hosted, managed and provided by the third party service provider.

b) Generally, IDaaS includes directory authentication services, risk and event monitoring, single sign-on services.

communication is widely established throughout the world.

(MAY 19 QP, MAY 19 RTP)

9. Green Computing or Green IT

It refers to the study and practice of environmentally sustainable computing or IT. In other words, it is the study and practice of establishing/ using computers and IT resources in a more efficient and environmentally friendly and responsible way.

10. BYOD (Bring Your Own Device)

a) It refers to business policy that allows employees to use their preferred computing devices, like smart phones and laptops for business purposes.

b) It means employees are welcome to use personal devices (laptops, smart phones, tablets etc.) to connect to the corporate network to access information and application.

c) The BYOD policy has rendered the workspaces flexible, empowering employees to be mobile and giving them the right to work beyond their required hours.

11. Web 3.0

a) The term **Web 3.0,** also known as the **Semantic Web**, describes sites wherein the computers will be generated raw data on their own without direct user interaction.

b) An example of typical Web 3.0 application is the one that uses content management systems along with artificial intelligence.

12. Internet Of Things (IOT)

a) The **Internet of Things (IOT)** is a system of interrelated computing devices, mechanical and digital machines, objects, 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.

b) 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.

(MAY 18 MTP, MAY 18 QP)

13. Artificial Intelligence

"The ability to use memory, knowledge, experience, understanding, reasoning, imagination and judgment to solve problems and adapt to new situations". The ability described above when exhibited by machines is called as Artificial intelligence (AI). It is intelligence exhibited by machines.

14. Machine Learning

Machine Learning is a type of Artificial Intelligence (AI) that provides computers with the ability to learn without being explicitly programmed. Machine learning focuses on the development of computer programs that can change when exposed to new data.

'B' CATEGORY

15. Hardware Virtualization

Hardware Virtualization or **Platform Virtualization** refers to the creation of a virtual machine that acts like a real computer with an operating system. Software executed on these virtual machines is separated from the underlying hardware resources.

16. Network Virtualization

Network Virtualization is a method of combining the available resources in a network by splitting up the available bandwidth into channels, each of which is independent from the others, and each of which can be assigned (or reassigned) to a particular server or device in real time.

17. Storage Virtualization

Storage Virtualization is the apparent pooling of data from multiple storage devices, even different types of storage devices, into what appears to be a single device that is managed from a central

18. Private Cloud

This cloud computing environment resides within the boundaries of an organization and is used exclusively for the organization's benefits. These are also called **Internal Clouds** or Corporate

console.	Clouds. Private Clouds can either managed by the single organization **(On- Premise Private Cloud)** or can be managed by third party **(Outsourced Private Cloud)**.
19. Public Cloud	**20. Hybrid Cloud**
The public cloud is the cloud infrastructure that is provisioned for open use by the general public. It may be owned, managed, and operated by a business, academic, or government organizations, or some combination of them. Typically, public clouds are administrated by third parties or vendors over the Internet, and the services are offered on pay-per-use basis.	This is a combination of both at least one private (internal) and at least one public (external) cloud computing environments. **(MTP2, MAY 19)**
21. Community Cloud	**22. Network as a Service (NaaS)**
The community cloud is the cloud infrastructure that is provisioned for exclusive use by a specific community of consumers from organizations that have shared concerns. It may be owned, managed, and operated by one or more of the organizations in the community, a third party or some combination of them.	**a)** It Provides users with needed data communication capacity to accommodate bursts in data traffic during data-intensive activities such as video conferencing or large file downloads. **b)** It is an ability given to the end-users to access virtual network services that are provided by the service provider over the Internet on a per-per-use basis.
23. Storage as a Service (STaaS)	**24. Database as a Service (DBaaS)**
It Provides storage infrastructure on a subscription basis to users who want a low-cost and convenient way to store data, manage off-site backups, mitigate risks of disaster recovery, and preserve records for the long-term.	**a)** It Provides users with seamless mechanisms to create, store, and access databases at a host site on demand. **b)** It is an ability given to the end users to access the database service without the need to install and maintain it on the pay-per-use basis.
25. Platform as a Service (PaaS)	**26. Testing as a Service (TaaS)**
PaaS provides the users the ability to develop and deploy an application on the development platform provided by the service provider.	It Provides users with software testing capabilities such as generation of test data, generation of test cases, execution of test cases and test result evaluation on a pay-per-use basis.
27. Communication as a Service (CaaS)	**28. Data as a Service (DaaS)**
a) It is an outsourced enterprise communication solution that can be leased from a single vender. The CaaS vendor is responsible for all hardware and software management and offers guaranteed Quality of Service (QoS). It allows businesses to selectively deploy communication devices and modes on a pay-as-you-go, as-needed basis. **b)** Examples are: Voice over IP (VoIP), Instant Messaging (IM).	It Provides data on demand to a diverse set of users, systems or application. The data may include text, images, sounds, and videos. Data encryption and operating system authentication are commonly provided for security. DaaS users have access to high-quality data in a centralized place and pay by volume or data type, as needed.
29. Semantic Web	**30. Web Services**
This provides the web user a common framework that could be used to share and reuse the data across various applications, enterprises, and community boundaries. This allows the data and	It is a software system that supports computer-to-computer interaction over the Internet. For example - the popular photo-sharing website Flickr provides a web service that could be utilized and

information to be readily intercepted by machines, so that the machines are able to take contextual decisions on their own.	the developers to programmatically interface with Flickr in order to search for images.
'C' CATEGORY	
31. Backend as a Service (BaaS)	**32. Desktop as a Service (DTaaS)**
It Provides web and mobile app developers a way to connect their applications to backend cloud storage with added services such as user management, push notifications, social network services integration using custom software development kits and application programming interfaces.	It Provides ability to the end users to use desktop virtualization without buying and managing their own infrastructure. It is a pay-per-use cloud service delivery model in which the service provider manages the back-end responsibilities of data storage, backup, security and upgrades.
33. API as a Service (APIaaS)	**34. Email as a Service (EaaS)**
It Allows users to explore functionality of Web services such as Google Maps, Payroll processing, and credit card processing services etc.	It Provides users with an integrated system of emailing, office automation, records management, migration, and integration services with archiving, spam blocking, malware protection, and compliance features.

Copyrights Reserved
To **MASTER MINDS**, Guntur

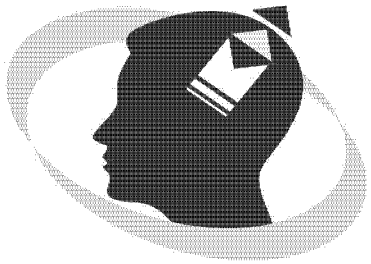
THE END

MASTER MINDS

CA - INTER
COURSE MATERIAL

Quality Education
beyond your imagination...

PART B - DIFFERENCES



MASTER MINDS

CA • CMA • CS • MEC • CEC

GUNTUR | RAJAHMUNDRY | KURNOOL | VIZAG | NELLORE

HYDERABAD | VIJAYAWADA | TIRUPATHI

Cell: 98851 25025 / 26

Visit us @ www.mastermindsindia.com | Mail: mastermindsinfo@ymail.com

Facebook Page: Masterminds For CA | Youtube Channel: Masterminds For CA

1. COMPONENTS OF INFORMATION SYSTEMS

1. Cache Memory Vs. Virtual Memory

1. **Cache Memory:**
   - **a)** There is a huge speed difference between Registers and Primary Memory.
   - **b)** Cache memory can be used in order to bridge the speed differences between Registers and Primary memory.
   - **c)** Cache is a smaller, faster memory, which stores copies of the data from the most frequently used main memory locations.
   - **d)** These copies can be accesses by Processor/Registers more rapidly than main memory.
   - **e)** The cache acts as temporary memory and boosts processing power.
   - **f)** It is the property of locality of reference that improves effective memory access time in a computer.
2. **Virtual Memory:**
   - **a)** Virtual Memory is in fact not a separate device but an imaginary memory area supported by some operating systems in conjunction with the hardware.
   - **b)** If a computer lacks the Random-Access Memory (RAM) needed to run a program or operation, OS uses virtual memory to compensate.
   - **c)** Virtual memory combines computer's RAM with temporary space on the hard disk.
   - **d)** When RAM runs low, virtual memory moves data from RAM to a space called a paging file.
   - **e)** Moving data to and from the paging file frees up RAM to complete its work.
   - **f)** Thus, Virtual memory is an allocation of hard disk space to help RAM.

2. DATA AND DBMS

1. Data warehouse Vs. Data Mining

1. **Data warehouse:**
   - **a)** The concept of the data warehouse is extract data from one or more of the organization's databases and load it into the data warehouse (which is itself another database) for storage and analysis.
   - **b)** It uses non-operational data.
   - **c)** 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.
2. **Data Mining:**
   - **a)** Data Mining is the process of analyzing data to find previously unknown trends, patterns, and associations to make decisions.
   - **b)** Generally, data mining is accomplished through automated means against extremely large data sets, such as a data warehouse. EX: A baseball team may find that collegiate baseball players with specific statistics in hitting, pitching, and fielding make for more successful major league players.

2. Big data Vs. Data Mining

1. **Big data:**
   - **a)** A new buzzword that has been capturing the attention of businesses lately is big data.

b) The term refers to such massively large data sets that conventional database tools do not have the processing power to analyze them.

c) For example, WalMart must process over one million customer transactions every hour.

2. **Data Mining:**

a) Data Mining is the process of analyzing data to find previously unknown trends, patterns, and associations to make decisions.

b) Generally, data mining is accomplished through automated means against extremely large data sets, such as a data warehouse.

c) EX: A baseball team may find that collegiate baseball players with specific statistics in hitting, pitching, and fielding make for more successful major league players.

3. INFORMATION SYSTEMS RISKS AND CONTROLS

1. Preventive Vs. Detective Vs. Corrective Controls

1. **Preventive Controls:**

a) Preventive Controls are those inputs, which are designed to prevent an error, omission or malicious act occurring.

b) These controls prevent errors, omissions, or security incidents from occurring.

c) Any control can be implemented in both manual and computerized environment.

2. **Detective Controls:**

a) These controls are designed to detect errors, omissions or malicious acts that occur and report the occurrence.

b) In other words, Detective Controls detect errors or incidents that elude preventive controls.

c) *For example, a detective control may identify account numbers of inactive accounts or accounts that have been flagged for monitoring of suspicious activities.*

3. **Corrective Controls:**

a) It is desirable to correct errors, omissions, or incidents once they have been detected.

b) They vary from simple correction of data-entry errors, to identifying and removing unauthorized users or software from systems or networks, to recovery from incidents, disruptions or disasters.

2. Rounding Down Vs. Salami Techniques

1. **Rounding Down:** This refers to rounding of small fractions of a denomination and transferring these small fractions into an authorized account. As the amount is small, it gets rarely noticed.

2. **Salami Techniques:**

a) This involves slicing of small amounts of money from a computerized transaction or account.

b) A Salami technique is slightly different from a rounding technique in the sense a fix amount is deducted.

3. Passwords Vs. Personal Identification Number (PIN)

1. **Passwords:** User identification by an authentication mechanism with personal characteristics like name, birth date, employee code, function, designation or a combination of two or more of these can be used as a password boundary access control.

2. **Personal Identification Number (PIN):** PIN is similar to a password assigned to a user by an institution a random number stored in its database independent to a user identification details, or a customer selected number. Hence, a PIN may be exposed to vulnerabilities while issuance or delivery, validation, transmission and storage.

4. Transcription Errors Vs. Transposition Errors

1. **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 fall into three classes:
   a) **Addition errors** occur when an extra digit or character is added to the code. For example, inventory item number 83276 is recorded as 832766.
   b) **Truncation errors** occur when a digit or character is removed from the end of a code. In this type of error, the inventory item above would be recorded as 8327.
   c) **Substitution errors** are the replacement of one digit in a code with another. For example, code number 83276 is recorded as 83266.
2. **Transposition Errors:** It is a simple error of data entry that occurs 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.
   a) **Single transposition** errors occur when two adjacent digits are recorded as 21345 instead of 12345.
   b) **Multiple transposition** errors occur when non-adjacent digits are transposed. For example, 12345 are recorded as 32154.

4. INFORMATION SYSTEMS AUDITING

1. System Control Audit Review File (SCARF) Vs. Continuous and Intermittent Simulation (CIS).

1. **System Control Audit Review File (SCARF):**
   a) The SCARF technique involves embedding audit software modules within a host application system to provide continuous monitoring of the system's transactions.
   b) The information collected is written onto a special audit file the SCARF master files.
2. **Continuous and Intermittent Simulation (CIS):**
   a) This is a variation of the SCARF continuous audit technique.
   b) This technique can be used to trap exceptions whenever the application system uses a database management system.

2. Concurrent Audit Vs. General Audit.

1. **Concurrent Audit:**
   a) Auditors are members of the system development team.
   b) They assist the team in improving the quality of systems development for the specific system they are building and implementing through concurrent audit.
2. **General Audit:**
   a) Auditors evaluate systems development controls overall.
   b) They seek to determine whether they can reduce the extent of substantive testing needed to form an audit opinion about management's assertions relating to the financial statements for systems effectiveness and efficiency.

Copyrights Reserved
To **MASTER MINDS**, Guntur

5. BUSINESS PROCESS AUTOMATION

1. OPERATIONAL PROCESSES vs SUPPORTING PROCESSES

No.	OPERATIONAL PROCESSES (OR PRIMARY PROCESSES)	SUPPORTING PROCESSES (OR SECONDARY PROCESSES)
1.	These processes deliver value to the customer by helping to produce a product or service. Operational processes represent essential business activities that accomplish business objectives.	Supporting Processes back core processes and functions within an organization. One key differentiator between operational and support processes is that support processes do not provide value to customers directly.
2.	Examples: Generating revenue - Order to Cash cycle, Procurement - Purchase to Pay cycle.	Examples: Accounting, Human Resource (HR) Management .

2. SUPPORTING PROCESSES vs MANAGEMENT PROCESSES

No.	SUPPORTING PROCESSES (OR SECONDARY PROCESSES)	MANAGEMENT PROCESSES
1.	Supporting Processes back core processes and functions within an organization. One key differentiator between operational and support processes is that support processes do not provide value to customers directly.	Management processes measure, monitor and control activities related to business procedures and systems. Like supporting processes, management processes do not provide value directly to the customers. However, it has a direct impact on the efficiency of the enterprise.
2.	Examples: Accounting, Human Resource (HR) Management	Examples: internal communications, governance, strategic planning, budgeting.

3. Flowcharts vs Data Flow Diagram

No.	Flowcharts	Data Flow Diagram
1.	A Flowchart is a diagram prepared by the programmer of the sequence of steps involved in solving a problem.	What data a system processes;
2.	It is an essential tool for programming and illustrates the strategy and thread of logic followed in the program.	What transformations are performed;
3.	A flowchart helps the programmer avoid fuzzy thinking and accidental omissions of intermediate steps.	What data are stored;
4.		What results are produced and where they flow.

4. Document Flowchart vs System Flowchart

Types of Flowchart	Explanation
Document Flowchart	This flowchart traces the physical flow of documents through an organization – that is, the flow of documents from the departments, groups, or individuals who first created them to their final destinations.

System Flowchart	This typically depicts the electronic flow of data and processing steps in an Information System. While Document Flowcharts focus on tangible documents, system flowchart concentrates on the computerized data flows of Information systems.

6. BPA RISKS AND CONTROLS

1. RISK vs Control

No.	RISK	Control
1.	As per International Organization for Standardization (ISO): **Risk** is uncertainty in achieving objectives. Risk can be positive or negative. **Risk** may be defined as the possibility that an event will occur and adversely affect the achievement of objectives.	It is defined as policies, procedures, practices and organization structure that are designed to provide reasonable assurance that business objectives are achieved and undesired events are prevented or detected and corrected.

2. Internal Controls vs "Internal Control System"

No.	Internal Controls	"Internal Control System"
1.	**Internal Controls** are a system consisting of specific policies and procedures designed to provide management with reasonable assurance that the goals and objectives it believes important to the entity will be met.	"**Internal Control System**" means all the policies and procedures adopted by the management of an entity to assist in achieving management's objective of ensuring, as far as practicable, the orderly and efficient conduct of its business, including adherence to management policies, the safeguarding of assets, the prevention and detection of fraud and error, the accuracy and completeness of the accounting records, and the timely preparation of reliable financial information.

3. DATA vs INFORMATION

No.	DATA	INFORMATION
1.	"**Data**" means a representation of information, knowledge, facts, concepts or instructions which are being prepared or have been prepared in a formalized manner, and is intended to be processed, is being processed or has been processed in a computer system or computer network and may be in any form (including computer printouts magnetic or optical storage media, punched cards, punched tapes) or stored internally in the memory of the computer;	"**Information**" includes data, message, text, images, sound, voice, codes, computer programmes, software and databases or micro film or computer generated micro fiche;

Copyrights Reserved
To **MASTER MINDS**, Guntur

7. FINANCIAL AND ACCOUNTING SYSTEMS

1. Integrated System vs Non-Integrated System

No.	Integrated System	Non-Integrated System
1.	An **Integrated System** that has combined different functions together in order to work as one entity and maintaining data in a centralized manner. Central database is the main characteristics of an integrated ERP system.	A **Non-Integrated System** is a system of maintaining data in a decentralized way. Each department shall maintain its own data separately and not in an integrated way. In case of non-integrated systems, separate database is maintained by each department separately.

2. MASTER DATA vs NON-MASTER DATA

No.	MASTER DATA	NON-MASTER DATA
1.	Relatively permanent data not expected to change frequently.	Non-permanent data and expected to change frequently. It is also called Transaction Data
2.	Master data is generally not typed by the user, it is selected from the available list.	Non-master data is typed by the user and not selected from available list as it is a non-permanent and it keeps on changing again and again.
3.	Master data entry is usually done less frequently say once a year or when there is a need to update.	Sometimes transactional data could also be selected from a drop down list of inputs available to the user.
4.	Master data is selected from the available list of masters (e.g. Ledgers) to maintain standardization.	E.g.: Date recorded in each transaction is expected to change again and again and will not be constant in all the transactions.
5.	Eg.: **Accounting Master Data, Inventory Master Data, Payroll Master Data, Statutory Master Data**	

3. FRONT END vs BACK END

No.	FRONT END	BACK END
1.	**Front End** - It is part of the overall software which actually interacts with the user who is using the software.	**Back End** - It is a part of the overall software which does not directly interact with the user, but interact with Front End only.

4. Installed Application vs Web Application

Particulars	Installed Application	Web Application
Installation & Maintenance	As software is installed on hard disc of the computer used by user, it needs to be installed on every computer one by one. Maintenance and updating of software may take lot time and efforts.	As software is installed on only one computer, i.e. on web server, it need not be installed on each computer. Maintenance and updating of software becomes extremely easy.
Accessibility	As software is installed on the hard disc of	As software is not installed on the hard

	the user's computer, It cannot be used from any computer.	disc of user's computer and it is used through browser and internet, it can be used from any computer in the world 24 x 7.
Mobile Application	Using the software through mobile application is difficult in this case.	Using mobile application becomes very easy as data is available 24 x 7.
Data Storage	Data is physically stored in the premises of the user, i.e. on the hard disc of the user's server. Hence user will have full control over the data.	Data is not stored in the user's server. It is stored on a web server. Hence user will not have any control over the data.
Data Security	As the data is in physical control of the user, user shall have the full physical control over the data and he/she can ensure that it is not accessed without proper access.	Data security is a big challenge in case of web application as the data is not in control owner of data. It is maintained on a web server.
Performance	A well written installed application shall always be faster than web application, reason being data is picked from local server without internet.	As data is picked from web server using internet, speed of operation may be slower.
Flexibility	Installed applications shall have more flexibility and controls as compared to web application. It is very easy to write desktop applications that take advantage of the user's hardware.	Web applications do not even compare to the flexibility of desktop applications. If you want to write a web application that basically interacts with the user's hardware, you are doing it wrong!

5. RBAC vs RAC

No.	Role Based Access Control (RBAC)	Rules-based Access Control (RAC)
1.	RBAC is sometimes referred to as Role-Based Security.	RAC takes into account the data affected, the identity attempting to perform a task, and other triggers governed by business rules.
2.	It is a policy neutral access control mechanism defined around roles and privileges.	RAC uses specific rules that indicate what can and cannot happen between a subject/ user and an object. A manager, for example, has the ability to approve his/her employees' hours worked.
3.	The components of RBAC such as role-permissions, user-role and role-role relationships make it simple to perform user assignments.	RAC can be used to facilitate administration of security in small to medium sized organizations with hundreds of users and limited permissions.
4.	RBAC can be used to facilitate administration of security in large organizations with hundreds to thousands of users and thousands of permissions.	

6. Accounting & Tax Compliance Software vs Only Tax Compliance Software

S. No.	Particulars	Accounting & Tax Compliance Software	Only Tax Compliance Software
1	Ease of software operation	Less - as this is integrated system of accounting and tax compliance, everything connected with other and making changes at one place may affect other aspects also.	More - as this is used only for one single purpose, i.e. tax compliance, it is less complicated and bound to be easy.
2	Features and	Less - as this system is not an	More - as this is an exclusive and

	facilities	exclusive system for tax compliance, it may have limited features for tax compliance.	specifically designed system for tax compliance, naturally more features and facilities shall exist in this system.
3	Time and efforts required	Less - as this is an integrated system, time required to transfer data to compliance software is zero.	More - as this is a separate software, data from accounting software need to put in this for preparation of returns. This may take extra time and efforts.
4	Accuracy	More - As this is an integrated system and hence accounting data and tax compliance data shall always be same. No need to transfer data to compliance software and reconcile the data.	Less - as there are two separate system, reconciliation with accounting data is needed, possibility of mismatch of data is always there.
5	Cost	More - if tax compliance feature is not available in accounting system, getting it customized may require some amount of cost which may be higher than buying separate software.	Less - as this is specific purpose software, there shall be less complications and the cost also shall be less.

8. CORE BANKING SYSTEMS

1. ECS Credit vs. ECS Debit.

1. **ECS Credit:**
   a) In the case of ECS credit, there is a single receiver of funds from a large number of customers.
   b) The beneficiary (i.e., the receiver of funds) obtains mandate from its customers to withdraw funds from their specified Bank accounts on a specific date.
2. **ECS Debit:**
   a) In the case of ECS debit, there is a single account to be debited against which many accounts with a number of banks in the same clearing house area are credited.
   b) This system is useful for distribution of dividend interest, payment of salaries by large units, etc.

2. Application Controls Vs. General Controls

1. **Application Controls:**
   a) Application Controls are controls which are implemented in an application to prevent or detect and correct errors.
   b) These controls are in-built in the application software to ensure accurate and reliable processing.
   c) Application controls ensure that all transactions are authorized, complete and accurate. Application Controls pertain to the scope of individual business processes or application systems.
2. **General Controls:**
   a) General Controls, also known as Infrastructure Controls pervade across different layers of IT environment and information systems.
   b) General Controls are pervasive controls and apply to all systems components, processes, and data for a given enterprise or systems environment.

Copyrights Reserved
To **MASTER MINDS**, Guntur

3. Web Server Vs. Proxy Server

1. **Web Server:**
   a) The **Web Server** is used to host all web services and internet related software.
   b) All the online requests and websites are hosted and serviced through the web server.
   c) A Web server is a program that uses HTTP (Hypertext Transfer Protocol) to serve the files that form Web pages to users, in response to their requests, which are forwarded by their computers' HTTP clients.
   d) Dedicated computers and appliances may be referred to as Web servers as well.
2. **Proxy Server:**
   a) A Proxy Server is a computer that offers a computer network service to allow clients to make indirect network connections to other network services.
   b) A client connects to the proxy server, and then requests a connection, file, or other resource available on a different server.
   c) The proxy provides the resource either by connecting to the specified server or by serving it from a cache.
   d) In some cases, the proxy may alter the client's request or the server's response for various purposes.

9. E-COMMERCE AND M-COMMERCE

1. Traditional Commerce Vs. E-Commerce

No.	Basis for Comparison	Traditional Commerce	E-Commerce
1.	**Definition**	Traditional Commerce includes all those activities which encourage exchange of goods / services which are manual or Non-electronic	E-commerce means carrying out commercial transactions or exchange of information, electronically on the internet
2.	**Transaction Processing**	Manual	Electronically
3.	**Availability for commercial Transactions**	For limited time, special stores which may run 24 hours, but in general available for limited time.	24×7365
4.	**Nature of Purchase**	Goods can be inspected physically before purchase.	Goods cannot be inspected physically before purchase.
5.	**Customer Interaction**	Face-to-Face	Screen-to-Face
6.	**Business Scope**	Limited to particular area	Worldwide reach
7.	**Information Exchange**	No uniform platform for exchange of information.	Provides a uniform platform for information exchange.
8.	**Resource Focus**	Supply side	Demand side
9.	**Marketing**	One way marketing	One-to-one marketing
10.	**Payment**	Cash, Cheque, Credit card etc.	Credit card, cash in delivery, fund transfer, payment wallets, UPCI application etc.
11.	**Delivery of goods**	Instantly	Takes time, but now e-commerce websites have created options of same day delivery, or delivery within 4 hours

2. Two tier architecture Vs. Three tier architecture

Two Tier Client Server: In a **Two-tier network,** client (user) sends request to server and the server responds to the request by fetching the data from it. The Two-tier architecture is divided into two tiers- **Presentation Tier and Database Tier.**

1. **Presentation Tier (Client Application/Client Tier):** This is the interface that allows user to interact with the e-commerce / m-commerce vendor. User can login to an e-commerce vendor through this tier. This application also connects to database tier and displays the various products / prices to customers.
2. **Database Tier (Data Tier):** The product data / price data and other related data are kept here. User has not access to data / information at this level but he/she can display all data / information stored here through application tier.

Three Tier Client Server: Three-tier architecture is a client-server architecture in which the functional process logic, data access, computer data storage and user interface are developed and maintained as independent modules on separate platforms. The three-tier architecture are as follows:

1. **Presentation Tier:** Occupies the top level and displays information related to services available on a website. This tier communicates with other tiers by sending results to the browser and other tiers in the network.
2. **Application Tier:** Also, called the Middle Tier, Logic Tier, Business Logic or Logic Tier; this tier is pulled from the presentation tier. It controls application functionality by performing detailed processing.
3. **Database Tier:** This tier houses the database servers where information is stored and retrieved. Data in this tier is kept independent of application servers or business logic.

3. M-Commerce Vs. E-Commerce.

M-Commerce (Mobile Commerce):

a) M-commerce (mobile commerce) is the buying and selling of goods and services through wireless handheld devices such as cellular telephone and personal digital assistants (PDAs).

b) M-commerce enables users to access the Internet without needing to find a place to plug in.

E-Commerce (Electronic Commerce):

a) E-commerce is the process of doing business electronically.

b) It refers to the use of Technology to enhance the processing of commercial transactions between a company, its customers and its business partners.

c) It involves the automation of a variety of Business-To-Business (B2B) and Business-To-Consumer (B2C) transactions through reliable and secure connections.

d) This could include the use of technology in the form of Computers, Desktops, Mobile Applications, etc.

10. EMERGING TECHNOLOGIES

1. Grid Computing Vs. Cloud Computing

Grid Computing:

a) **Grid Computing** is a computer network in which each computer's resources are shared with every other computer in the system.

b) It is a distributed architecture of large numbers of computers connected to solve a complex problem.

c) In the ideal grid computing system, every resource is shared, turning a computer network into a powerful supercomputer.

Cloud Computing:

a) **"The Cloud"** refers to applications, services, and data storage on the Internet.

b) Cloud computing is the use of these services by individuals and organizations. You probably already using cloud computing in some forms.

c) The best example of cloud computing is Google Apps where any application can be accessed using a browser and it can be deployed on thousands of computers through the Internet.

2. Public Cloud Vs. Private Cloud

Private cloud:

a) This cloud computing environment resides within the boundaries of an organization and is used exclusively for the organization's benefits.

b) These are also called **Internal Clouds** or Corporate Clouds.

c) Private Clouds can either managed by the single organization **(On- Premise Private Cloud)** or can be managed by third party **(Outsourced Private Cloud)**.

Public cloud:

a) The public cloud is the cloud infrastructure that is provisioned for open use by the general public.

b) It may be owned, managed, and operated by a business, academic, or government organizations, or some combination of them.

c) Typically, public clouds are administrated by third parties or vendors over the Internet, and the services are offered on pay-per-use basis.

3. SAAS Vs. PAAS

Software as a Service (SaaS):

a) **SaaS** provides ability to the end users to access an application over the Internet that is hosted and managed by the service provider.

b) Thus, the end users are exempted from managing or controlling an application the development platform, and the underlying infrastructure.

c) SaaS changes the way the software is delivered to the customers.

d) SaaS provides users to access large variety of applications over internets that are hosted on service provider's infrastructure.

e) For example, one can make his/her own word document in Google docs online.

Platform as a Service (PaaS):

a) **PaaS** provides the users the ability to develop and deploy an application on the development platform provided by the service provider.

b) In traditional application development, the application will be developed locally and will be hosted in the central location.

c) In stand-alone application development, the application will be developed by traditional development platforms result in licensing - based software, whereas PaaS changes the application development from local machine to online.

d) For example- Google AppEngine, Windows Azure Compute etc.

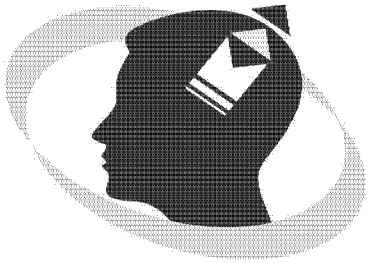
THE END

Copyrights Reserved
To **MASTER MINDS**, Guntur

CA - INTER
COURSE MATERIAL

Quality Education
beyond your imagination...

PART C – TRUE/FALSE QUESTIONS



MASTER MINDS

CA • CMA • CS • MEC • CEC

GUNTUR | RAJAHMUNDRY | KURNOOL | VIZAG | NELLORE

HYDERABAD | VIJAYAWADA | TIRUPATHI

Cell: 98851 25025 / 26

Visit us @ www.mastermindsindia.com | Mail: mastermindsinfo@ymail.com

Facebook Page: Masterminds For CA | Youtube Channel: Masterminds For CA

1. COMPONENTS OF INFORMATION SYSTEMS

1.	Data and information are same	F
2.	Generally a system contains several subsystems	T
3.	A feedback mechanism is required to monitor the performance of the system	T
4.	Information system refers to the interaction between processes and technology	T
5.	An information system does not require people	F
6.	A process is a series of steps undertaken to achieve desired outcome or goal	T
7.	A system has several interrelated and interdependent subsystems or components	T
8.	A subsystem can function in isolation	F
9.	The way a subsystem works with another subsystem is called integration	F
10.	Software is called tangible	F
11.	The main function of CPU is to execute programs stored in hard disk	F
12.	Registers are high speed memory units with in CPU for storing large amount of data	F
13.	There is a huge speed difference between registers and primary memory	T
14.	RAM is a volatile memory	T
15.	Secondary storage differs from primary storage in that it is not difficult accessible by the CPU	T
16.	Secondary storage devices are volatile	F
17.	Virtual memory is a separate device of storage	F
18.	Virtual memory moves data from RAM to a space called paging file	T
19.	Tactile output are helpful for blind people	T
20.	The hardware could function without software	F
21.	Operating system creates the interface between the user and the hardware	T
22.	API system stands for application program interface	T
23.	Task management feature of OS helps in allocating resources to make optimum utilisation of services	T
24.	Operating systems provide logical security	T
25.	Development of application software is inexpensive	F
26.	A network is a group of devices connected to each other	T
27.	Computer networks are helpful only to share the data but not resources	F
28.	Connection oriented networks operate like telephone networks	T
29.	Resilence refers to the ability of a network to recover from any kind of error	T
30.	Contention and polling methods are same	F
31.	Resource sharing implies sharing of peripherals	T
32.	The message in the network can be broken down in to smaller pieces called packets	T
33.	Repeater directly amplifies the signal	F
34.	Hubs can filter the data	F
35.	A hub is a multiport repeater	T
36.	A Bridge connects LAN's of different protocols	F
37.	MAC address and IP address are same	F

MASTER MINDS

38.	MAC address is the manufacturer registered identification number	T
39.	A switch filters packets based on their destination	T
40.	A router routs packets to their destination	T
41.	Topology only refers to physical arrangement of links	F
42.	Signal flow can be in many ways between two linked devices	T
43.	A protocol is a set of rules that allow to or more devices to exchange information in a network	T
44.	An IP address is a unique identification number assigned to a device on internet	T
45.	Currently IPV6 is in use	T
46.	In Wikipedia.org the top level domain will be Wikipedia	F
47.	DNS is a directory on internet	T
48.	Wi – fi uses micro waves	F
49.	The Wi – fi specification starts with 802.11	T
50.	A skype or Whatsapp call is made using VOIP	T

2. DATA AND DBMS

1.	Data is now helping companies to create strategy for future	T
2.	By itself, data is useful	F
3.	Data which is put in to context aggregated analysed will be helpful for organisation decision making	T
4.	The goal of many information systems is to transform data in to information	T
5.	A database is an organised collection of related information	T
6.	Databases are always digital	F
7.	Microsoft access and open office base are examples of personal database management systems	T
8.	A database model determines the physical structure of a database	F
9.	A data base is a collection of data records	F
10.	A hierarchically structured database is arranged logically in an inverted tree pattern	T
11.	All records in hierarchy is called nodes	T
12.	The network model can represent redundancy in data more efficiently than in hierarchical model	T
13.	A network database structure views all records in nodes	F
14.	A record is one instance of a set of fields in a table	T
15.	A relation is a table with columns and rows	T
16.	In a relational database, all the tables are related by one or more fields	T
17.	Keys are used to access the files	F
18.	An object – oriented database provides a mechanism to store complex data	T
19.	An object – oriented database is basically a relational data base	T
20.	DBMS maximises data redundancy	F
21.	Data integrity is maintained by having accurate consistent and up – to – date data	T
22.	DBMS delays faster application development	F
23.	Even with safeguards in place it may possible for some unauthorised users to access the database	T

MASTER MINDS

24.	Big Data term refers to such massively large data sets that conventional database tools do not have the processing power to analyse them	T
25.	Data marts are very large databases	F
26.	The concept of data warehouse is ETL	T
27.	A data warehouse provides a decentralized view of all data in an enterprise	T
28.	Data mining is a collection of databases	T
29.	Data mining is the process of analysing data to find previously unknown trends , patterns and associations	T

3. INFORMATION SYSTEMS RISKS AND CONTROLS

1.	A well designed information system, systems should have proper controls in place	T
2.	Control process includes safeguarding assests to maintain data accurately	T
3.	Controls will help in achieving business objectives and avoid undesired events	T
4.	We can easily find competent and trust worthy IT personnel	F
5.	Segregation of duties will reduce likelihood of errors and wrongful acts in an IS	T
6.	As per the time of action controls are three in numbers	T
7.	Same control can be implemented in both manual and computerized environment for the same purpose	T
8.	Detective controls detect errors incidents that elude (or) escape preventive controls	T
9.	Corrective controls comes into picture before detective controls	F
10.	Environmental controls protect the physical security of an IS	T
11.	Physical access controls and environmental controls are same	F
12.	Physical access controls relates to physical security of the intangible IS resources and also intangibles resources stored on tangible media	T
13.	Operating system controls comes under logical Access controls	T
14.	Logical Access controls provide confidentially and authenticity to the data in IS	T
15.	An enormous technical knowledge is required for performing data diddling	F
16.	Logical bombs infect other programs	F
17.	A worm copies itself to another machine on network	T
18.	SALAMI technique and rounding down technique are same	F
19.	Access priviliges should always be minimal w.r.t the job functions	T
20.	Segregation of networks enforces network access control	T
21.	A fire wall is a system that enforces access control between two networks	T
22.	Converting cipher text into cleartext is called encryption	F
23.	Using a call back device we maintain continuous connection	F
24.	A log in procedure is a first line of defense against un authorised access	T
25.	An access taken is used to approve all actions attempted by the user during the session	T
26.	Access control list uses access taken	T
27.	Event logging is tough and unviable method to maintain logs	F
28.	The log files are never reviewed	F
29.	Clock synchronization is mandatory for event logging	T
30.	Theft of data carried on the disk drives of portable computers is high risk factors	T

MASTER MINDS

31.	Managerial controls provide a stable infrastructure of IS	T
32.	Top management is not responsible for preparing a master plan for information systems functions	F
33.	Operational plan covers three to five years of operations	F
34.	The steering committee should assume the overall responsibility for the activities of the IS	T
35.	All systems must be properly and formally authorized to ensure economic justification and feasibility	T
36.	All programs includes must be thoroughly tested before they are implemented	T
37.	Concurrency controls are important to maintain the integrity of data	T
38.	There should be adequate insurance to replace IS assets and to cover the extra cost associated with restoring normal operations	T
39.	There is no relation between IT continuity plan Business Continuity plan	F
40.	Data may be lost or corrupted through component failure	T
41.	File library is just collection of files	F
42.	Any function or activity that works to ensure the processing accuracy of the application control	T
43.	PIN is not similar to a password	F
44.	Biometric devices also comes under Boundary controls	T
45.	Human intervention does not cause any errors or frauds in IS	F
46.	There is no relation between input controls and source document control	F
47.	Hash totals and sub totals are one and the same	F
48.	Input validation controls are intended to detect errors in the transaction data before the data are processed	T
49.	Limit check is applied only to output data	F
50.	Picture check is related to graphics	F
51.	A check digit is used to check the integrity of the code for further processing	T
52.	Transmission errors are controlled using parity check	T
53.	Multiplexers are used effectively use the communication line	T
54.	Flow controls are required to neutralize the speed differences between two nodes	T
55.	In contention method there is competition between the nodes to gain access to the channel	T
56.	Virtual memory controls are helpful to control real memory	T
57.	Master files and transactions files need not be synchronizes	F
58.	Output controls are only required in batch environment	F
59.	Recovery controls involve roll – forward and roll – back methods	F
60.	Once generated output can be destroyed as and when required	F

MASTER MINDS

4. INFORMATION SYSTEMS AUDITING

1.	Data integrity is a fundamental attribute of IS auditing	T
2.	System effectiveness and system efficiency are same	F
3.	Real time recording needs real time auditing	T
4.	Snapshot is helpful for tracing a transaction in a computerized environment	T
5.	Integrated test facility (ITF) method works with the real entity instead of dummy	F

	entity	
6.	SCARF involves embedding of audit software module with the host application system	T
7.	Continuous and intermittent simulation (CIS) and SCARF are same	F
8.	Audit hooks are used to flag suspicious transactions	T
9.	Audit trail controls attempt to ensure that a chronological record of all events that have occurred in a system is maintained	T
10.	Audit trails are logs that can be designed to record activity at all three levels in an IS	T
11.	Personal accountability can be ensured using audit trails	T
12.	Audit of environment controls is not a mandatory component of IS audit plan	F
13.	Dormant accounts poses a risk to the IS environment	T
14.	Segregation of duties is different from separation of duties	F
15.	Preventive and detective controls should be put in place to manage segregation of duties matters	T

5. BUSINESS PROCESS AUTOMATION

1.	Set of activities that will accomplish a specific organizational goal is called Business Process	T
2.	The processes deliver value to the customer by helping to produce a product (or) service are called Supporting Process	F
3.	Removing human element from existing business process is called Automation	T
4.	No un-authorized amendments can be made in data is called confidentiality	F
	The data is available when asked for is called Availability	T
5.	Automation reduces the time it takes to achieve a task	T
6.	Automation cannot reduces the number of tasks employees would otherwise need to do manually	F
7.	IT security and controls are sub-set of the overall enterprise risk management strategy	T
8.	Enterprise Risk management is not a process	F
9.	Non-profit organizations cannot provide value to its stake holders by using Enterprise Risk Management	F
10.	Rationalize capital is one of the benefit of Enterprise Risk Management (ERM)	T
11.	Seize opportunities is one of the component of ERM	F
12.	Reduction Risk Response is taking action to Reduce the likelihood (or) Impact related to the risk	T
13.	Transferring (or) sharing a portion of the risk is called Accept Risk Response	F
14.	Existing the activities giving rise to risk is called Avoidance risk response	T
15.	Deciding and considering other feasible steps to minimize risks is called Alternative Actions Risk response	T
16.	Risk is uncertainty in achieving objectives	T
17.	Infrastructure is not a risk of Business Process Automation	F
18.	Accidental omissions cannot avoid by flowcharts	F
19.	Flow chart is an essential tool for programming	T
20.	Flow charts are not useful for Designing and documenting programs	F

MASTER MINDS

21.	The diagrammatic representation of sequence of steps to solve a problem is called flow chart	T
22.	Document flow charts focus on the computerized Data flow	F
23.	System flowcharts focus on the tangible documents	F
24.	Program flowcharts represents the flow of data between the CPU and Input/Output peripherals	T
25.	Documentation is one of the advantage of flowcharts	T
26.	Detecting, locating and removing mistakes in programs is called program debugging	T
27.	Effective analysis is one of the limitations of flowcharts	F
28.	If modifications to a flowchart are required, it may require complete re-drawing	T
29.	In reproduction of flowcharts the symbols can be typed	F
30.	The full form of DFD is Data Flow Diagram	T
31.	Data store is not a component of Data Flow Diagram	F
32.	In DFD, An entity is the Source (or) Destination of Data	T
33.	In DFD, the symbol of process is Rectangle	F
34.	DFD represents the flow of Data in an organization	T
35.	The symbol of Data store in DFD is circle	F
36.	In DFD, data flow is represented by an arrow	T

6. BPA RISKS AND CONTROLS

MASTER MINDS

1.	Risk is uncertainty in achieving objectives	T
2.	Infrastructure is not a risk of Business Process Automation	F
3.	Strategic Risk that would prevent an organization from accomplishing its objectives	T
4.	The Risk that could Expose the organization to negative publicity is called operational risk	F
5.	Risk that could result in a negative financial impact to the organization is called financial risk	T
6.	Control is a policy (or) Procedure designed to achieve business objectives	T
7.	Internal controls and internal control system two are same procedures	F
8.	The control environment sets the fame of organization	T
9.	Monitoring of controls is not a component of internal controls	F
10.	Segregation of Duties (SOD) is the process of assigning different people the responsibilities of authorizing transactions	T
11.	Communication is the continual process of providing and obtaining necessary information	T
12.	The cost of an internal control does not exceed the Expected benefits to be derived – It is the limitation of Internal control	T
13.	Procure to pay is the process of obtaining and managing the raw materials for manufacturing	T
14.	Order to cash is a process that involve receiving and fulfilling customer request for goods	T
15.	Inventory cycle is a process of accurately tracking the on-hand inventory levels of an enterprise	T
16.	Human resources cycle cannot covers all the stages of an employee's time with in	F

	a specific enterprise	
17.	On boarding is the process of getting the successful applicant setup in the system as a new employee	T
18.	Career development is one of the stage in Human resource cycle	T
19.	Transition is the process by which the employee becomes a member of the company's work force	F
20.	Employees who have left the company continue to have system access is a risk of human resource cycle	T
21.	New employees are not added to the payroll is not a risk of human resource cycle	F
22.	Digital signatures have been given legal validity in the IT Act 2000	T
23.	Email account hacking is one of the cyber-crime under the IT Act 2000	T
24.	The home page of a website is replaced with a pornographic page is called cyber terrorism	F
25.	Back doors are the Malicious programs	T
26.	Fraudulently acquiring sensitive information through masquerading a site as a trusted entity is called phishing	T
27.	Unauthorized reproduction of computer software is under cyber crime	T
28.	Inter connecting of one (or) more computers is called communication	F
29.	Information contains message, text, images, sound, voice, codes	T
30.	Password is not a sensitive information	F
31.	Medical records and history is a sensitive information	T
32.	Consent is an agreement from the provider of sensitive personal data	T

MASTER MINDS

7. FINANCIAL AND ACCOUNTING SYSTEMS

1.	A set of detailed methods created to solve a problem is called system	T
2.	Non-Integrated system maintains Data in a centralized manner	F
3.	Integrated system maintains Data in a decentralized manner	F
4.	Master data is a permanent data not expected to change frequently	T
5.	Master data typed by the user	F
6.	Non-Master data expected to change frequently	T
7.	Non-Master data is not typed by the user	F
8.	Front end is the software which actually interacts with the user	T
9.	Back end is the software which does not directly interact with the user	T
10.	Back end software is meant for handling request from users	F
11.	Front end software is meant for storing the data	F
12.	Front end software is meant for presenting information in proper format	T
13.	Front end software handles raw data	F
14.	Back end speaks in technical language not understood by layman	T
15.	Web applications are installed on the hard disc of the user's computer	F
16.	Installed applications are installed on the webserver	F

17.	Installed application needs to be installed on every computer one by one	T
18.	Web application installed on only one computer, i.e. on web server	T
19.	Installed application can be used from any computer in the world	F
20.	Data security is poor in web server	T
21.	Installed application is faster than web application	T
22.	Web applications have more flexibility than installed applications	F
23.	The full form of ERP is Enterprise Resource Planning	T
24.	An ERP is based on a common database	T
25.	MS Axapta is not an ERP software	F
26.	Oracle is an ERP software	T
27.	ERP process huge volumes of data within short time	T
28.	An Ideal ERP system provides right data and right point of time to right users for their purpose	T
29.	In ERP system, all Data can be stored in single data base, it may not be a Risk	F
30.	Role Based Access Control (RBAC) and Rules-based Access Control two are same methods	F
31.	Process is defined as a sequence of events	T
32.	Human Resource Module maintains total employee data base	T
33.	CRM is an acronym for customer relationship management	T
34.	CRM cannot improve customer revenues	F
35.	CRM helps to optimize marketing	T
36.	Report means presentation of information in proper and meaning full way	T
37.	An MIS report is not for evaluate business process	F
38.	Structured is one of the character of MIS reports	T
39.	The quantitative data involves non-numerical data	F
40.	The qualitative data involves numerical data	F
41.	Data mining is used to identify new trends	T
42.	Doing business electronically is called E-commerce	T
43.	XBRL is an Acronym for Extensible Best Reporting Language	F
44.	XBRL developed by Accountants for financial reporting	T
45.	XBRL not designed for reporting information move between organizations	F
46.	XBRL analyse the reports accurately	T
47.	Government doesn't use XBRL	F
48.	XBRL supports many languages	T
49.	Basel iii is developed by the Basel committee	T
50.	Basel iii is designed for supervision and risk management of the banking sector	T

MASTER MINDS

51.	Compliance means conforming to a rule	T
52.	Regulatory compliance means comply with laws and regulations	T

8. CORE BANKING SYSTEMS

1.	MICR technology allows machines to read and process cheques	T
2.	ECS is widely used in banks for clearing	T
3.	Banks do not provide any special services to HNI (High Net worth Individuals)	F
4.	IT risks are very threatful to banks	T
5.	IT risks in banks are only related to operations	F
6.	In internet banking we will have phishing attacks	T
7.	General controls are micro in nature	F
8.	Business continuity planning includes backup, recovery and off-site data centre planning	T
9.	Core Banking Solutions (CBS) supports entire Banking operations	T
10.	CBS is modular in structure	T
11.	CBS is a combination of application software and network devices	T
12.	Datacentre and Disaster Recovery centre are critical to CBS	T
13.	A CBS is an ERD for Bank	T
14.	Internal audit of CBS is not required	F
15.	The core of the CBS is the bank	F
16.	CIF is a digital file of customer data	T
17.	Database server is only accessed by application server	F
18.	A Proxy server allows clients to make indirect network connections	T
19.	To protect the webserver from unauthorised use and abuse a firewall is used	T
20.	In the context of CBS software, configuration refers to the way a software system is setup for use	T
21.	Data from CBS database is transferred to a data warehouse	T
22.	Money laundering is generally used to make “Clean” money appear “Dirty”	F
23.	Transaction logging is an application Control	F
24.	Completeness check is a general control	T
25.	On-line real time processing is a core feature of CBS	T
26.	Violation of privacy is a computer related offence as per IT Act, 2000	T
27.	The primary objective of SPDI is securing personal data of customers	T

MASTER MINDS

9. E-COMMERCE AND M-COMMERCE

1.	www.flipkart.com is an E-commerce vendor	T
2.	Many E-commerce companies are investing huge amounts of money in automating the whole ware houses	T

3.	Fast delivery is not an unique selling proposition (USP) for E-commerce vendors	F
4.	Loyalty programs establish a long term relationship with customer	T
5.	E-commerce companies do not open outlets	F
6.	Cash on delivery is most preferred method	T
7.	E-commerce vendors uses SSL (Secure Socket Layer) for enforcing security	T
8.	Small and mid-sized E-commerce organisations don't use shared infrastructure	F
9.	A mobile app can run on laptops	F
10.	Android is an open source operating system	T
11.	IOS is an open source operating system	F
12.	A digital library is a special library with focussed collections of digital objects	T
13.	An electronic library is a type of information retrieval system	T
14.	Data interchange is a manual communication of data	F
15.	Internet (or) Network is the key to success of E-commerce transactions	T
16.	Web portal provides an interface to perform E-commerce transactions	T
17.	Payment gateway represents the way E-commerce/M-commerce vendors collect their payments	T
18.	Application tier is a part of two tier architecture	F
19.	Presentation tier and client tier are different	F
20.	Two-tier architecture is simple to install	T
21.	Application tier, middle tier, logic tier represents same tier	T
22.	Dynamic load balancing is possible through three-tier architecture	T
23.	E-commerce and M-commerce are same	F
24.	M-commerce can be done using laptops	F
25.	Risk is possibility of loss	T
26.	Problem of anonymity occurs in E-commerce	T
27.	Lack of audit trails is not a big issue in E-commerce	F
28.	System effectiveness and system efficiency are same	F
29.	IT Act, 2000 Law Governs All Internet Activities In India	T
30.	UPI and IMPS comes under digital payment methods	T
31.	UPI is a system that powers multiple bank accounts and several banking services in a single mobile app	T
32.	BHIM is not an UPI app	F
33.	Mobile wallet is a virtual wallet	T
34.	Unstructured Supplementary Service Data (USSD) requires smart phone and internet	F

MASTER MINDS

10. EMERGING TECHNOLOGIES

1.	The core concept of virtualization lies in partioning the single physical layer into multiple logical layers	T
2.	Hardware virtualization and platform virtualization are different	F
3.	Grid computing is a special kind of distributed computing	T

4.	Making use of underutilised services is the biggest use of Grid computing	T
5.	"The cloud" refers to applications, services and data storage on internet	T
6.	Google drive is an example of cloud computing service	T
7.	The internet is commonly visualized as cloud	T
8.	Security is a major concern in cloud computing	T
9.	Private cloud and internal cloud are same	T
10.	Service level agreements (SLA's) play very important role in any cloud service	T
11.	Public cloud is highly scalable	T
12.	There will be weak SLA's in public cloud	F
13.	Community cloud and hybrid cloud are same	F
14.	Infrastructure as a service (IAAS) is a hardware level service	T
15.	Elasticity and dynamic scaling services are possible in IAAS	T
16.	Windows Azrue is an example of platform as a services (PAAS)	T
17.	Mobile internet access is generally faster than direct cable connections	F
18.	Green computing involves using computers in an Environmental friendly way	T
19.	The basic aim of Green IT is to increase customer's energy savings	T
20.	The BYOD policy will render work spaces flexible	T
21.	Happy employees and lower IT budgets are possible through BYOD	T
22.	Early adoption of new technologies becomes tough with BYOD	F
23.	Web 3.0 also known as semantic Web	T
24.	Web services supports computer to computer interaction over internet	T
25.	Washing machines with Wi-Fi networking capabilities comes under IOT	T
26.	Hacking becomes a big threat to IOT	T
27.	Online assistant SIRI uses artificial intelligence	T
28.	AI does not rely on data it gets	F
29.	Data mining and machine learning are dissimilar	F
30.	Google car uses machine learning	T
31.	AI and machine learning are different	F

MASTER MINDS

THE END