



INTER CA – MAY 2018

Sub : ENTERPRISE INFORMATION SYSTEM

Topic : Financial and accounting systems & Core banking systems.

Test Code – M37

Branch : MULTIPLE

Date : 28.01.2018

(50 Marks)

Note: All questions are compulsory.

Question 1 (6 marks) (1/2 mark for each point)

The dependence on technology in banking for most of the key banking services and processes has led to various challenges. IT risks are also taking new forms and transforming as well. The business processes and standards adapted by Banks should consider these new set of IT risks and challenges:

- (i) **Frequent changes or obsolescence of technology:** Technology keeps on evolving and changing constantly and becomes obsolete very quickly. Hence, there is always a risk that the investment in technology solutions unless properly planned may result in loss to bank due to risk of obsolescence.
- (ii) **Multiplicity and complexity of systems:** The core of banking services remain same but by using technology the way these banking products and services are provided changes drastically. The Technology architecture used for services could include multiple digital platforms and is quite complex. Hence, this requires the bank personnel to have personnel with requisite technology skills or the management of the bank's technology could be outsourced to a company having the relevant skill set.
- (iii) **Different types of controls for different types of technologies/ systems:** Deployment of Technology gives rise to new types of risks which are explained later in this chapter. These risks need to be mitigated by relevant controls as applicable to the technology/information systems deployed in the bank.
- (iv) **Proper alignment with business objectives and legal/ regulatory requirements:** Banks must ensure that the CBS and allied systems implemented, cater to all the business objectives and needs of the bank, in addition to the legal/regulatory requirements envisaged.
- (v) **Dependence on vendors due to outsourcing of IT services:** In a CBS environment, the bank requires staff with specialized domain skills to manage IT deployed by the bank. Hence, these services could be outsourced to vendors and there is heavy dependency on vendors and gives rise to vendor risks which should be managed by proper contracts, controls and monitoring.
- (vi) **Vendor related concentration risk:** There may not one but multiple vendors providing different services. For example, network, hardware, system software and banking software services may be provided by different vendors or these services may be provided by a single vendor. Both these situations result in higher risks due to heavy dependence on vendors.
- (vii) **Segregation of Duties (SoD):** Banks have a highly-defined organization structure with clearly defined roles, authority and responsibility. The segregation of duties as per organization structure should be clearly mapped in the CBS used by the bank. This is a high-risk area since any SoD conflicts can be a potential vulnerability for fraudulent activities. For example, if a single employee can initiate, authorize and disburse a loan the possibility of misuse cannot be ignored.
- (viii) **External threats leading to cyber frauds/ crime:** The CBS environment provides access to customers anytime, anywhere using internet. Hence, information system which was earlier accessible only within and to the employees of the bank is now exposed as it is open to be accessed by anyone from anywhere. Making the information available is business imperative but this is also fraught with risks of increased threats from hackers and others who could access the software to commit frauds/crime.

(ix) **Higher impact due to intentional or unintentional acts of internal employees:** Employees in a technology environment are the weakest link in an enterprise.

This is much more relevant in bank as banks deal directly with money. Hence, the employee acts done intentionally or unintentionally may compromise security of the IT environment.

(x) **New social engineering techniques employed to acquire confidential credentials:** Fraudsters use new social engineering techniques such as socializing with employees and extracting information which is used unauthorizedly to commit frauds. For example: extracting information about passwords from bank's staff acting as genuine customer and using it to commit frauds.

(xi) **Need for governance processes to adequately manage technology and information security:** Controls in CBS should be implemented from macro and business perspective and not just from function and technology perspective. As Technology, has become key enabler for bank and is implemented across the bank, senior management of bank should be involved in directing how technology is deployed in bank and approve appropriate policies. This requires governance process to implement security as required.

(xii) **Need to ensure continuity of business processes in the event of major exigencies:** The high dependence on technology makes it imperative to ensure resilience to ensure that failure does not impact banking services. Hence, a documented business continuity plan with adequate technology and information systems should be planned, implemented and monitored.

Question 2 (4 marks) (1/2 mark for each point)

- The ability to execute and plan new work such as IT infrastructure upgrades required to support new products and services.
- Development projects that are delivered on time and within budget, resulting in cost-effective and better product and service offerings compared to competitors.
- Ability to allocate resources predictably.
- Consistent availability and reliability of information and IT services across the organisation and for customers, business partners, and other external interfaces.
- Clear communication to management of key indicators of effective controls.
- The ability to protect against new vulnerabilities and threats and to recover from any disruption of IT services quickly and efficiently.
- The efficient use of a customer support center or help desk.
- Heightened security awareness on the part of the users and a security-conscious culture.

Question 3 (6 marks) (1 mark for each point)

Risks	Key IT Controls
The transaction may not be recorded completely or accurately, and the related items will be inaccurately or incompletely recorded.	Batch and online processing procedures are defined, executed and monitored for successful and timely completion. Any exception is reviewed and timely resolved.
Invalid items may be recorded or valid items may be inaccurately or incompletely recorded.	Access to automated job scheduling tools, and executable programs are defined to restrict to appropriate individuals as per job requirement.
Timely and adequate technical support may not be available and issues may not be resolved.	Entity has written agreement(s) with outside contractors and/ or software vendors to provide for technical support, as needed. Management monitors compliance with these agreements.
User queries may not be timely and adequately resolved.	Help desk function exists to provide support on user queries regarding systems. Problems are recorded and the log for timely resolution of all such user queries is monitored.
Timely execution and complete processing and availability of data may not be ensured.	Performance and capacity utilization of the computer systems are measured, reported, and reviewed by management
Unavailability of applications and data backups in the event of a disaster. It can also result in disclosure of sensitive information.	All tapes, manuals, guides are properly labelled and timely stored in a secured environmentally controlled location.
Data may be lost and systems may not be recoverable in the event of a serious system failure. This may result in regulatory/ legal complaints, loss of reputation beside financial loss.	Schedule backup and storage of data is done periodically and appropriately. Management periodically reviews backups are done as per back up policy and meet business and legal requirements.
Backup may not be available if subject to some disaster, resulting in risk of data loss.	Backups are archived off-site.

Question 4 (4 marks)

The business process flow of clearing & settlement process of credit card.

- (i) The transaction data from the merchant is transferred to the merchant's bank. Merchant's bank clears settlement amount to Merchant after deducting Merchant fees. Merchant's bank, in turn now provides the list of settlement transactions to the credit card network which then provides the list of transactions made by the customer to the credit card issuing bank.
- (ii) The credit card issuing bank basis the transactions made, clears the amount to Merchant's bank but after deducting interchange transaction fees.
- (iii) At the end of billing cycle, card issuing company charges the customer's credit card account with those transactions in CBS.

Question 5 (5 marks) (1/2 mark for each)

Management Tool: ERP is the solution for better Project Management.

2. **Business Tool:** ERP provides intelligent business tools like Decision Support System, Executive Information System, data mining and easy working systems to enable better decisions.
3. **Better use of Entity's Resources:** ERP enables an Entity to use its scarce resources in an efficient manner, ERP offers a model by which organizational resources are allocated to areas which result in optimum utilization.
4. **Lower Operating Costs:** ERP leads to improved business performance through cycle time reduction, inventory reduction, order fulfilment improvement, increased business agility and drive, etc, thereby leading to lower operating costs and improved profitability of the Entity.
5. **Pro – active decision – making:** ERP facilitates pro-active decision-making, i.e. decisions made in advance of likely environmental changes and anticipated moves of competitors. This creates a competitive advantage to the Entity.
6. **Decentralised decisions – making:** ERP enables decentralised decisions – making, i.e. decisions made at the points / locations where they are relevant for execution. With the help of ERP, Managers at lower / supervisory levels can analyse information from their own perspective and take appropriate decisions. This will release the burden on higher Management Levels, and give them adequate time for strategic thinking.
7. **Better Customer Satisfaction:** ERP provides facilities for efficient and effective processing of customer requests and emphasizes on customer relationship management. This leads to enhanced customer satisfaction in the form of better quality and timely service to customers.
8. **Flexibility in Operations:** ERP provides flexibility in business operations, (i.e. changing / adjusting / adapting to suit environment needs), since ERP can support different languages, currencies, accounting standards, etc. in one system.
9. **Problem Elimination:** ERP eliminates most business problems like material shortages, productivity enhancements, customer service, cash management, inventory problems, quality problems, prompt delivery, etc.
10. **Corporate Image:** ERP performs core activities and increases customer service, thereby augmenting the corporate image. ERP system can enhance a manufacturer's ability to accurately schedule production, fully utilize capacity, reduce inventory and meet promised despatch dates for customers.

Question 6 (6 marks)

Meaning: A MIS Report is a tool that Managers use to evaluate Business Processes and Operations. MIS Reports generated by the Entity's IT System, are used by Business Managers at all levels of an Entity, to help them evaluate their business daily activities or problems that arise, make decisions, and track progress. **(1 mark)**

2. Features of MIS Reports: MIS Reports can be – **(2 mark)**

- (a) Auto – generated by the IT System on periodic basis (e.g. Daily Stocks Report), or generated on – demand basis.
- (b) Generated by the specific Manager at his end, or can be generated by a specialized MIS Department, if any,
- (c) Customized to provide relevant information in user – friendly fashion, including Spread sheets, etc.
- (d) Made specific to each Functional Unit / Division, e.g. Production, Despatch, Sales, Accounts, HR, etc.

3. Information in MIS Reports: To be useful, Information in a MIS Report should have the following features **(3 marks)–**

- (a) **Timeliness:** The information should be available at the right time for the Decision Maker / Manager.
- (b) **Adequacy:** The information should be adequate to meet the requirements of the Decision Maker / Manager.
- (c) **Purposive:** The basic purpose of a MIS Report is to inform, evaluate, persuade and organise. MIS Information must be purposeful, when it is given to a Manager in the Entity.
- (d) **Frequency:** The frequency with which the MIS Report is transmitted or received affects its value. Frequency is related to both the – (a) level of management, and (b) operational need.

(e) **Relevant:** MIS Reports need to be specific to the business area they address. A Report that includes unnecessary information might be ignored.

(f) **Structured:** Information in an MIS Report should be understandable to the Manager using it.

(g) **Accurate:** MIS Reports should be correct and accurate, to the extent required for supporting effective decisions.

Question 7 (4 marks)

- **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.

If a user wants to have some information from the system, i.e. Balance Sheet.

- User will interact with Front End part of the software and request front end to generate the report.
- Front End will receive the instruction from user and pass it on to the back end.
- Back End will process the data, generate the report and send it to the front end. Front end will now display the information to user.
- This is how the process gets completed each and every time.

Question 8 (4 marks)

In accounting, we have studied that there are three types of ledger accounts, i.e. Personal, Real and Nominal. But as far as Financial and Accounting Systems are concerned, ledgers may be classified in two types only. Ledger having **Debit Balance** and ledgers having **credit balance**



Basic objective of accounting software is to generate two primary accounting reports, i.e. Profit & Loss Account and Balance Sheet. Income and Expense ledgers are considered in Profit & Loss Account and Asset and Liability ledgers are considered in Balance Sheet. Hence every ledger is classified in one of the four categories, i.e. Income, Expense, Asset or Liability.

- Difference between Total Income and Total Expenses, i.e. Profit or Loss as the case may be, is taken to Balance Sheet. So everything in accounting software boils down to Balance Sheet. Balance Sheet is the last point in accounting process.
- Any ledger can be categorized in any one category only, i.e. Asset, Liability, Income or Expense. It cannot be categorized in more than one category.
- Ledger grouping is used for preparation of reports, i.e. Balance Sheet and Profit & Loss Account.

Accounting software does not recognize any ledger as Personal, Real or Nominal, instead it recognizes it as an Asset, Liability, Income or Expense Ledger.

At the time of creation of any new ledger, it must be placed under a particular group. There are four basic groups in Accounting, i.e. **Income, Expense, Asset, Liability**. There may be any number of sub groups under these four basic groups. Grouping is important as this is way to tell software what is the nature of the ledger and where it is to be shown at the time of reporting.

Question 9 (4 marks)

XBRL (eXtensible Business Reporting Language) is a freely available international standard for digital business reporting, allowing the expression of semantic meaning commonly required in business reporting.

- (b) XBRL is used to define and exchange financial information, e.g. Financial Statement or other kinds of compliance, performance and business reports.
- (c) XBRL is a standards – based way to communicate & exchange business information between systems. **(1 marks)**

Special Features of XBRL: (3 marks)

Point	Description
Definitions/ Taxonomy	<p>(a) XBRL allows the creation of reusable, authoritative definitions, called Taxonomies that capture the meaning of all Reporting Terms used in a Business Report, as well as the relationships between all of the terms.</p> <p>(b) Taxonomies are developed by Regulators, Accounting Standards Setters, Government Agencies and other Groups that require clear definition of information to be reported upon.</p> <p>(c) XBRL has built flexibility, and does not limit what kind of information is defined. XBRL can be used and extended as needed.</p>
Business Rules	<p>(a) XBRL allows the creation of Business Rules that constrain what can be reported.</p> <p>(b) Business Rules can be logical or mathematical, or both.</p> <p>(c) Business Rules can be used to ensure the following –</p> <ul style="list-style-type: none"> • Poor Quality Information is not sent to a Regulator or Third Party, while the Report is in draft,(e.g. Report Errors will be flashed, before it is uploaded to the Regulator.) • Poor Quality, Information is not accepted by a Regulator or Third Party, by being run at the point that the information is being received, (e.g. Reports that fall critical rules can be returned back to the Preparer for review and re-submission.) • Questions or Inconsistent Information is flagged or highlighted to the Preparer, allowing prompt follow – up, correction or explanation, (e.g. Rectification Option post submission) • Ratios, Aggregations and similar value – added information is prepared, based on the fundamental data provided.

Multilingual Support	(a) XBRL allows Concept Definitions to be prepared in as many languages. (b) Transitions of Definitions can also be added by Third Parties. (c) So, it is possible to display Reports in a different languages to the one that they were prepared in, without any additional work, and can be shared and compared across different languages.
Software Support	XBRL is supported by many Software Applications, allowing a very wide range of Stakeholders to work with the Standard.

Question 10 (6 marks) (4 marks for cyber crimes, 2 marks for computer related offences)

Cyber Crimes

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 the target. 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.

The United Nations Manual on the Prevention and Control of Computer Related Crime classifies such crimes into following categories:

- Committing of a fraud by manipulation of the input, output, or throughput of a computer based system.
- Computer forgery, which involves changing images or data stored in computers,
- Deliberate damage caused to computer data or programs through virus programs or logic bombs,
- Unauthorized access to computers by 'hacking' into systems or stealing passwords, and,
- Unauthorized reproduction of computer programs or software piracy.
- Cybercrimes have grown big with some countries promoting it to attack another country's security and financial health.

Banking sector is prone to high risks by cyber criminals as banks deal with money and using technology, frauds can be committed across geographical boundaries without leaving a trace. Hence, CBS and banking software is expected to have high level of controls covering all aspects of cyber security.

Computer related offences

CBS is a technology platform which provides integrated interface for bank and its customers with access online, anytime and anywhere. Hence, it is prone to various types of cybercrimes and frauds which can be committed by staff, customers, vendors or any hacker/ outsider. The IT Act recognizes risks of information technology deployment in India, various types of computer-related offences and provides a legal framework for prosecution for these offences. Some of key provisions of IT related offences as impacting the banks are given here.
