ISCA

November 2010

Opinion Answers

By

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Q. 1 ABC Industries Ltd., a company engaged in a business of manufacturing and supply of automobile components to various automobile companies in India, had been developing and adopting office automation system, at random and in isolated pockets of its departments.
The company has recently obtained three major supply contracts from International Automobile companies and the top management has felt that the time is appropriate for them to convert its existing information system into a new one and to integrate all its office activities.One of the main objectives of taking this is to maintain continuity of business plans even while continuing the progress towards e-governance.
(a) When the existing information system is to be converted into a new system, what are the activities involved in the conversion process?

Ans. The information system can be converted into the New Information System on the basis of following strategies discussed below:-
• Direct Changeover: Conversion by direct changeover means that on a specified date, the old system is dropped and the new system is put into use.
• Parallel Conversion: This refers to running the old systems ad the new system at the same time, in parallel. This approach works best when a computerized system replaces a manual one.
• Gradual Conversion: It attempts to combine the Best feature of the earlier two plans, without incurring the risks. In this plan, the Volume of transactions is gradually increased as the system is phased in.
• Modular Prototype Conversion: This approach of conversion uses the building of modular, operational prototypes to change from old system to new in a gradual manner.
• Distributed Conversion: This refers to a situation in which many installations of the same system are contemplated, such as in banking.
Activities involved in conversion:
• Procedure conversion
• File Conversion
• System conversion
• Scheduling personnel and equipment
• Alternative plans in case of equipment failure

(b) What are the types of operations into which the different office activities can be broadly grouped under office automation systems ?
Ans. Office automation refers to the varied computer machinery and software used to digitally create, collect, store, manipulate, and relay office information needed for accomplishing basic tasks and goals.

Different office activities can be broadly grouped into the following types of operations:

- a)Document Capture: Documents originating from outside sources like incoming mails, notes, handouts, charts, graphs etc. need to be preserved.

- b)Document Creation: This consists of preparation of documents, dictation, editing of texts etc.

- c)Receipts and Distribution: This basically includes distribution of correspondence to designated recipients.

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- d)Filling, Search, Retrieval and Follow up: This is related to filling, indexing, searching of documents, which takes up significant time.

- e)Calculations: These include the usual calculator functions like routine arithmetic

(c) What is meant by Business Continuity Planning ? Explain the areas covered by Business Continuity.

Ans.Effective contingency planning and disaster coordination requires expertise in all aspects of disaster management, including avoidance and recovery. Planning is an activity to be performed before the daister occurs or it would be too late to plan an effective response. Business continuity Planning (BCP) is a plan for running the business under stressful and time compressed situations. BCP covers the following areas:

• **Business Resumption Planning: -** The operation's piece of business continuity planning.

• **Disaster Recovery Planning: -** The technological aspect of business continuity planning, the advance planning and preparation necessary to minimize losses and ensure continuity of critical business functions of the organization in the event of disaster.

• **Crises Management: -** The overall co-ordination of an organization's response to a crisis in an effective timely manner, with the goal of avoiding or minimizing damage to the organization's profitability, reputation or ability to operate.

(d) what is the procedure to apply for a license to issue electronic signature certificates, under Section 22, Information Technology (Amended) Act, 2008?

Ans.

[Section 22] Application for license:

(1) Every application for issue of a license shall be in such form as may be prescribed by the Central Government.

(2) Every application for issue of a license shall be accompanied by-

(a) A certification practice statement;

(b) A statement including the procedures with respect to identification of the applicant;

(c) Payment of such fees, not exceeding twenty-five thousand rupees as may be Prescribed by the Central Government;

(d) Such other documents, as may be prescribed by the Central Government.

Q. 2(a) You are entrusted the duty of implementing an ERP in your office. You have taken care of all the preparations during the implementation. However, during post implementation, there will be a need for course correction many times. What can be the reasons for them?

Ans. Only ERP implementation can not achieve the desired benefits, organization should continuously try to update and enhanced their ERP system to achieve required benefits. The organization should prepare a list of Critical Success Factors (CSF) and their Key Performance Indicators Which the organization wants to achieve through ERP implementation.

The basic needs for the course correction are as follow:-

• The Critical Success Factor (CSF) due to the changing environment and corresponding

•New KPI.

• Continuous improvement in technologies of hardware and software also require change in ERP.
• New Business Processes also require corresponding Changes in ERP.
• The new job description and organization structure to suit the post ERP scenario.

In conclusion it can be said that the ERP should be flexible so that it can be changed as per the business requirement.

Q. 2 (b) Why does an organization implement an ERP package and evaluate the various available ERP packages for assessing suitability? Mention the various evaluation criteria that are required to assess suitability of an ERP package on implementation.

Ans. ERP packages are originated to serve the information needs of the all the industries like healthcare, financial services, manufacturing etc.The main benefit of ERP is cost Cutting i.e. reduction in cost. The other benefits are as follows:-
•Reduction of lead time
•On-time shipment
•Increased business
•Reduction in inventory of WIP
etc.
There are various ERP packages available in the market like
Baan, Business Planning and Control System (BPCS),Mapics XA (Marcam Corporation), MFG/ Pro (QAD),Oracle Application (Oracle),R/3 (SAP) , System 21 (JBA)
There are various points which consider the evaluation criteria for the suitability of the ERP package:-
•Flexibility
•Comprehensive
•Integrated
•Beyond the company
•Best business practices
•New technologies
•Global presence of Package
•Price of package
etc.

Q.2(c) "The information system insurance policy should be a multiperial policy, designed to provide various types of coverage." Discuss the comprehensive list of items considered for coverage.

Ans. The insurance purpose is considered to spread the cost and risk of loss from individual to large number of people. The insurance is accomplished through use of an insurance policy which should be a multiperial policy. A multiperial policy is a contract between the insurer and policy holder which obligate the insurer to indemnify the policy holder or some third party from specific risks in return for the payment of a premium.
Adequate insurance is very important to recover from any disaster. To arrive at adequate insurance organization should perform a detailed risk analysis. The insurance companies specialized in risks assessment can also provide anticipated loss from various risks and the type of coverage required to cover from those risks.
Insurance policies usually can be obtained to cover from the loss of following:

• Equipments: - Cover repair and acquisitions cost
• Facilities: - Cover loss from reconstruction of room, fixtures and furniture etc.
• Storage Media: - Cover replacement of storage Medias and their content cost, such as data, Program files and documentation cost.
• Business Interruption: - Cover loss in business income from discontinuity of services.
• Extra Expenses: - Cover for additional costs incurred to provide services.
• Valuable Papers: - Cover loss of valuable papers such as reports, etc.
• Accounts Receivable: - Cover for cash-flow because organization can not collect cash promptly.
• Damage Claims (Third Party):- Cover loss from damage claims asked by customers and suppliers, etc.

Q. 3(a) As an IS auditor, suggest a method to test the correctness of a particular module of source code and justify your answer.

Ans. In computer programming, a unit test is a method of testing the correctness of a particular module of source code. The idea is to write test cases for every non-trival function or method in the module so that each test case is separate from the others if possible. This type of testing is mostly done by the developers.

Benefits: The goal of unit testing is to isolate each part of the program and show that the individual parts are correct. This test provides the following benefits:
• Encourages Change
• Simplifies Integration
• Documents the code

Limitations: It is important to realize that unit –testing will not catch every error in the program. By definition, it only tests the functionality of the units themselves. Therefore, it will not catch integration errors, performance problems and any other system- wide issues. Unit testing is only effective if it used in conjunction with other software testing activities.

Q. 3(b) what are the aspects to be included when a documented audit program is developed?

Ans. The following aspects to be included when a documented audit program is developed:-
• Documentation of IS auditor's procedure for collecting, analyzing, interpreting, and documenting information during the audit.
• Objectives of the audit.
• Scope, nature, and degree of testing required achieving the audit objectives in each phase of the audit.
• Identification of technical aspects, risks, processes, and transactions which should be examined.
• Procedure for audit will be prepared prior to the commencement of audit work and modified, as appropriate, during the course of audit.

Q. 3(c) "Once the information is classified on various levels, the organization has to decide about the implementation of different data integrity controls." Do you agree? If yes, explain about data integrity and its policies.

Ans. "Once the information is classified on various levels, the organization has to decide about the implementation of different data integrity controls."The statement is absolutely

right. The primary objective of data integrity control techniques is to prevent, detect and correct errors in transactions as they flow through the various stages of data processing. In other words, controls ensure the integrity of a specific application's inputs, stored data, programs, data transmissions, and outputs. Further, data integrity controls protect data from accidental or malicious alteration or destruction and provide assurance to the user that the information meets expectations about its quality and integrity.
There are six important data integrity controls:-
• Source data controls
• Input validation controls
• On-line Data Entry Control
• Data Processing and Storage Controls
• Output Controls
• Data Communication Controls

• Source data controls: - Use of incomplete, manipulate and unauthorized source data. Source data/document is major cause of errors and frauds in any accounting system. Controls must be applied in system which uses source documents to input transaction to ensure error free inputs to system.
• Input validation controls: - Systems can accept wrong inputs. You might have seen when you input TEXT character in amount field then computer provide you the message; invalid data. That is due to validation controls for inputs.
• On-line Data Entry Control: - Incorrect and unauthorized transactions input through online terminals. We are now frequent users of online data inputs system such as ATM and Net Banking, etc. User ID controls Limit or Range Check and Completeness check can be used for such data entries.
• Data Processing and Storage Controls: - Incorrect processing and storage of given data. The incorrect processing of data, incorrect data storage and data storage destruction can result in serious damage to organization credibility and can cause huge economic losses.
• Output Controls: - Incorrect and wrong distribution of outputs. Output controls ensure that the system output is not lost, misdirected, or corrupted and privacy is not lost. Output controls can be for printed output and visual or online output.
• Data Communication Controls: - Communication network failure, unauthorized access of network and data hacking, etc.Data communication or use of networks has become an integral part of information system for efficient working of organization. Firewall, Data Encryption, Network monitoring controls can be used for such system.

Q. 4(a) "Technology risk assessment needs to be mandatory requirement for any project to identify single point failure."- Justify.
Ans. Many of the **Technology risk assessment**'s reviewed by SGG have focused on identifying the technical risks in increasing the maturity of technologies from their current level. While this is one type of technical risk event, it does not constitute a complete set.
Understanding why it is an incomplete set requires a re-examination of the definitions
Of technology risk and technical risk outline in.
Technology Risk: -The likelihood that an underpinning technology necessary for a capability will not mature within the required timeframe.

Technical Risk: - The likelihood that the system will not reach its goals for capability performance, cost or schedule due to technology risks, to risks which arise in the integration of critical technologies and/or sub-systems dependent on them or to the system integration into the ADF.
This section documents additional categories of technical risk events that may apply to defense projects. These have been listed in terms of development projects and acquisition strategy issues, platform project and the software component of project issues, although it is likely that any given project will draw technical risk events from each of these categories.

Q. 4(b) What do you understand from Type I and Type II reports from a Service auditor?

Ans. The most effective ways a service organization can communicate information about its controls is through a service Auditor's Report.
There are two types of Service Auditor's Report:-

Type I:-

A type I report describes the service organizations description of controls at a specific point in time (e.g. June 30,2003). In Type I report, the service auditor will express an opinion on (1) whether the service organization's description of its controls presents fairly, in all material respects, the relevant aspects of the service organization controls that had been placed in operation as of a specific date and (2) whether the controls were suitably designed to achieve specified control objectives.

Type II:-

A type II report not only includes the service organization description of controls, but also includes detailed testing of the service organization's controls over a minimum six month period (e.g. January 1, 2003 to June 30, 2003).In a type II reports, the service auditor will express an opinion on the same items noted in point 1 and 2 above in type I report and (3) whether the controls that were tested were operating with sufficient effectiveness to provide reasonable, but not absolute, assurance that the control objectives were achieved during the period.

Q. 4(c) To get a good documentation of the working papers of an auditor, what are the points to be considered while gathering and organizing information and also mention the principles to be followed for writing the documentation ?

Ans. Working papers should record the audit plan, the nature, timing and extent of auditing procedure performed, and the conclusions drawn from the evidence obtained. All significant matters which require the exercise of judgment, together with the auditor's conclusion thereon, should be included in the working papers. The form and content of the working papers are affected by matters such as:-
The nature of the engagement
The form of the auditor's report
The nature and complexity of client's business
The nature and condition of client's records and degree of reliance on internal controls.
In case of recurring audits, some working paper files may be classified as permanent audit files which are updated currently with information of continuing importance to succeeding audits, as distinct from the current audit files which contain information relating primarily to audit of a single period.
The permanent audit file normally includes:-

The organization structure of the entity.
The IS policies of the organization.
The historical background of the information system in the organization.
Extracts of copies of important legal documents relevant to audit.
A record of the study and evaluation of the internal controls related to the information system.
Copies of audit reports and observation of earlier years.
Copies of management letters issued by the auditor, if any.
The current audit file normally includes:-
Corresponding relating to the acceptance of appointment and the scope of the work.
Evidence of the planning process of the audit and audit programme.
A record of the nature, timing and extent of auditing procedures performed, and the results of such procedures.
Letters of representation and confirmation received from the client.
Copies on the data and system being reported on and the related audit reports.
Working papers are the property of the auditor. The auditor may, at his discretion, make portions of, or extracts from working papers available to the client. The auditor should adopt reasonable procedures for custody and confidentiality of his working papers and should retain them for a period of time sufficient to meet the needs of his practice and satisfy any pertinent legal and professional requirements of records retention.

Q. 5 (a) what does Information Technology (Amendment) Act, 2008 say about

(i) Attributes of Electronic Records in Section 11 and

(ii) Secure Electronic Signature (Substituted vide ITAA 2008) in Section 15?

Answer (i)

[Section 11] Attribution of Electronic Records:
An electronic record shall be attributed to the originator
(a) if it was sent by the originator himself;
(b) By a person who had the authority to act on behalf of the originator in respect of that Electronic record; or
(c) By an information system programmed by or on behalf of the originator to operate Automatically.

Answer (ii)

[Section 15] Secure Electronic Signature (Substituted vide ITAA 2008):
An electronic signature shall be deemed to be a secure electronic signature if-
(i) The signature creation data, at the time of affixing signature, was under the exclusive Control of signatory and no other person; and
(ii) The signature creation data was stored and affixed in such exclusive manner as may be
Prescribed
Explanation- In case of digital signature, the "signature creation data" means the private key of the subscriber.

Q. 5(b) what do you understand from the term ‘database’? How is implemented in three different levels?

Ans. A database is a collection of information that is organized so that it can easily be accessed, managed, and updated. In one view, databases can be classified according to types of content: bibliographic, full-text, numeric, and images.
A DATABASE IS IMPLEMENTED THROUGH THREE GENEAL LEVELS:

- INTERNAL
- CONCEPTUAL
- EXTERNAL

1. Internal level (physical level): -The lowest level of abstraction, the internal level, is the one closest to physical storage. This level is also sometimes termed as physical level. It describes how the data are actually stored on the storage medium. At this levle, complex low-level data structures are described in details.

2. Conceptual level: -This level of abstraction describes what data are actually stored in the database. It also describes the relationship existing among data. At this level, the database is described logically in terms of simple data structures. The user of this level are not concerned with how these logical data structures will be implemented at the physical level. Rather, they just are concerned about what information is to be kept in database.

3. External level (View level): -This is the level closest to the users and is concerned with the way in which the data are viewed by individual users. Most of the users of the database are not concerned with all the information contained in the database. Instead they need only a part of database relevant to them. For example, even though the bank database stores a lot much information, an account holder (a user) is interested only in his account details and not with the rest of the information stored in the database. To simplify such user's interaction with system, this level of abstraction is defined. The system thus provides many views for the same database.

Q. 5(c) System maintenance is an important phase during the implementation of the system. If so, what are the three categories in which maintenance can be undertaken? As an IS auditor of the organization, how will you evaluate the effectiveness and efficiency of the system maintenance process?
Ans. Some of the main categories of System Maintenance are:

Adaptive Maintenance: where improvements to the system are necessary to adapt to changing working procedures or legislation.

Corrective Maintenance: where ongoing improvements are made (bug fixing) to ensure the system still meets the original user requirements.

Perfective Maintenance: improving the system so that it becomes more refined and more efficient at processing.

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Predictive Maintenance: strategic changes made in anticipation of likely changes to technology or working practices in the future.

Q. 6(a) As a person in-charge of System Development life cycle, you are assigned a job of developing a model for a new system which combines the features of a prototyping model and the waterfall model. Which will be the model of your choice and what are its strengths and weaknesses?

Ans. All the other methodologies are based on the principles that any software development process should be predictable and repeatable to an extent, although prototype approach is also used where predictability is less known until prototype is ready. The main criticism of those methodologies is that those methodologies put more emphasis on following the particular procedures and preparing documentation. Therefore, those methodologies are considered heavyweight or extensive (rigorous) and also include excessive thrust on following the particular structure. With all these constraints for system development, a movement known Agile Software Movement started, which provides a conceptual framework for undertaking software engineering projects.

This approach describes that software development is essentially a human activity and will always include variations in processes and inputs; therefore model should be flexible enough to handle the variations. Thus, the Agile Methodology incorporates iteration and the continuous feedback that it provides to successively refine and deliver a software system. It involves continuous planning, continuous testing, continuous integration, and other forms of continuous evolution of both the project and the software. It is a lightweight (especially compared to traditional waterfall-style processes), and inherently adaptable. As important, it focuses on empowering people to collaborate and make decisions together quickly and effectively.

Some of the common characteristics of Agile Methodology are as follows:

Includes time bound iterative cycles

Includes iterative processes with short cycles enabling fast verifications and corrections

Includes modular development process

Users or people oriented approach

Collaborative and communicative working approach

Incremental and convergent approach that minimizes the risks and facilitates functional additions.

Some of the popular Agile Methodologies are: Scrum, FDD (Feature – Driven Development), Crystal and XP (Extreme Programming)

Q. 6(b) From the perspective of IS audit, what are the advantages of System Developing Life Cycle?

Ans.. The primary role of an IS auditor during the system design phase of an application development project is to:

A. advice on specific and detailed control procedures.

B. ensures the design accurately reflects the requirement.

C. ensure all necessary controls are included in the initial
Design.

D. advises the development manager on adherence to the schedule.

Q. 6(c) How will you define a software process? What do you mean by its capability, performance and maturity?

Ans.

A software development process is a structure imposed on the development of a software product. Synonyms include software life cycle and software process. There are several models for such processes, each describing approaches to a variety of tasks or activities that take place during the process.

Capability: - A process capability analysis compares the distribution of output from an in-control process to its specification limits to determine the consistency with which the specification limits can be met.

Performance: - The choice of process performance measures depends on organizational goals

Maturity: - The principal idea of the maturity grid is that it describes in a few phrases, the typical behavior exhibited by a firm at a number of levels of 'maturity', for each of several aspects of the area under study.

Q. 7 Write short notes on any four of the following:

(a) Regression Testing

Ans. 7(a) Regression tests can be broadly categorized as functional tests or unit tests. Functional tests exercise the complete program with various inputs. Unit tests exercise individual functions, subroutines, or object methods. Both functional testing tools and unit testing tools tend to be third party products that are not part of the compiler suite, and both tend to be automated. Functional tests may be a scripted series of program inputs, possibly even an automated mechanism for controlling mouse movements. Unit tests may be separate functions within the code itself, or driver layer that links to the code without altering the code being tested.

(b) Business Engineering

Ans. 7(b) Business Engineering has come out of merging of two concepts namely Information Technology and Business Process Reengineering. Business Engineering is the rethinking of Business Processes to improve speed, quality and output of materials or services. The emphasis of business engineering is the concept of Process Oriented Business Solutions enhanced by the client-server computing in information technology. The main point in business engineering is the efficient redesigning of company's value added chains. Value added chains are a series of connected steps running through a business which when efficiently completed; add value to enterprise and customers. Information Technology helps to develop business models, which assist in redesigning of business processes.

In nut shell, Business Engineering is the method of development of business process according to changing requirements.

(c) Benefits of Experts Systems

Ans. 7(c) Expert systems are computer applications that combine computer equipment, software, and specialized information to imitate expert human reasoning and advice. As a branch of **artificial intelligence,** expert systems provide discipline-specific advice and explanation to their users.

Benefits of Expert System:-

Provide low cost solution or advice.

Provide solution or advice based on the knowledge of many experts.

Always available for solutions and advice, there is no time restriction as it happens in the case of human experts.

Help users in the better decision making and also improve their productivity.

(d) Section 41 , ITAA 2008- Acceptance of digital Signature Certificate

Ans. 7(d)[Section 41] Acceptance of Digital Signature Certificate:

(1) A subscriber shall be deemed to have accepted a Digital Signature Certificate if he Publishes or authorizes the publication of a Digital Signature Certificate -

(a) To one or more persons;

(b) In a repository, or otherwise demonstrates his approval of the Digital Signature Certificate in any manner.

(2) By accepting a Digital Signature Certificate the subscriber certifies to all who reasonably

Rely on the information contained in the Digital Signature Certificate that –

(a) The subscriber holds the private key corresponding to the public key listed in the Digital Signature Certificate and is entitled to hold the same;

(b) All representations made by the subscriber to the Certifying Authority and all Material relevant to the information contained in the Digital Signature Certificate is True;

(c) All information in the Digital Signature Certificate that is within the knowledge of the Subscriber is true.

(e) Systrust and Webtrust Services

Ans.SysTrust

To provide assurance that a system is truly reliable, the AICPA and the Canadian Institute of Chartered Accountants (CICA) offer Systrust. As more organizations rely on information technology to run their businesses, produce products and services, and communicate with customers and business partners, it is absolutely critical that their systems be secure, available when needed, and consistently able to produce accurate information.

Webtrust

Webtrust has changed significantly since it was first introduced to the profession and the public in fall 1997. The new and improved Webtrust 3.0 provides best practices and business solutions for Business-to-Consumer and Business-to-Business Electronic Commerce, for Service Providers, and for Certification Authorities.