Chap 3 :

Impact of Technology on Internal Controls

These are discussed as follows:

③ **Competent and Trustworthy Personnel:** Personnel should have proper skill and knowledge to discharge their duties. Therefore, it is difficult to find competent and trustworthy information systems personnel.

③ **Segregation of Duties:** Similarly, in a computerized system, the auditor should be concerned with the segregation of duties within the IT department which would prevent or detect errors or irregularities.

③ **Authorization Procedures: I**n computer systems, authorization procedures often are embedded within a computer program.

③ **Adequate Documents and Records: I**n computer systems, documents might not be used to support the process of transactions However, if the controls over the storage of documents, transactions etc. are placed properly, it will not be a problem for auditor.

③ **Physical Control over Assets and Records: T**he needs to protect the data in computerized financial system have still not changed. A client's financial data are stored at a single site where computer is located and therefore any kind of computer abuse or a disaster would result in heavy losses.

③ **Adequate Management Supervision: I**n computer system, data communication facilities can be used for supervision of employees. The Management's supervision and review helps to deter and detect both errors and fraud.

③ **Independent Checks on Performance: I**f program code in a computer system is properly authorized, accurate, and complete, then the system will always follow the designed procedure.

③ **Comparing Recorded Accountability with Assets:** Data and the assets both should be periodically compared to determine whether any inaccuracies in the data exist or whether any shortages or excesses in the assets have occurred. In a computer system, software is used to prepare this data.

③ **Delegation of Authority and Responsibility:** There should be clear line of authority and responsibility in both manual and computer systems. However, in a computer system it would be difficult to delegate authority unambiguous because same resources are shared among multiple users.

CHAP 8 :

Some pertinent similarities and differences are highlighted as follows: [SMS-O]

- **Scalability:** Cloud computing and Grid computing both are scalable. The system's storage capacity goes up and down depending on the number of users requirements.
- **Multi-tenancy and Multi-tasking:** Both computing types involve multi-tenancy and multitasking which means that many customers can perform different tasks.
- **Data intensive Storage:** Grid computing is well suited for data-intensive storage. While in cloud computing, we can store an object as low as 1 byte and as large as 5 GB or even several terabytes.
- **Offers:** Grid computing offers only high CPU operations, while Cloud computing offers two types of instances: standard and high-CPU.

8.1.2 Pertinent Issues: Some of the issues associated with Cloud computing are described as follows:

- **Software Development in Cloud:** The project managers should know how to assign resources to various different cloud types: Web development cloud, testing cloud, and production cloud. Each of the cloud type may differ from one another in terms of cost. By this the managers can also get cost-accounting data by tracking usage by project and user.
- **Environment-Friendly Cloud Computing: User should understand one** of the benefits of Cloud computing is that it is more environment-friendly. It reduces the number of hardware components required to run applications on the company's internal data center.
- **Threshold Policy:** During sudden increases in the demand, it should be checked whether policy results in the creation of additional resources to fill in the demand and also to determine how unused resources are to be de-allocated.
- **Hidden Costs:** Cloud computing service providers do not reveal 'what hidden costs are'. For instance, companies could incur higher network charges which might exceed the costs they could have saved on new infrastructure, training new personnel, etc.

- **Security Issues:** Another area of security testing is to encrypt the data on the local computer, and then access the data on a remote server in the cloud using the decryption keys. If we can't read the data, then vendor is using its own encryption algorithm.
- **Interoperability:** If a company outsources or creates applications with one cloud computing vendor, the company may find it difficult to change to another computing vendor who has different formats for importing and exporting data. This creates problems of achieving interoperability of applications between two cloud computing vendors.
- **Unexpected Behavior:** It is important to test the application in the cloud with a pilot study to check for unexpected behavior. If the tests show unexpected results, then the problem needs to be fixed before obtaining cloud services

Notes for some of topic of chap 1,3,8

Chap 1 :
Five Principles of COBIT 5:

Principle 1: Meeting Stakeholder Needs
There are stakeholder needs which are to be transformed into and enterprise's actionable strategy. COBIT 5 is the mechanism which can translate stakeholder needs into actionable enterprise goals and provides all required processes to support value creation goal through the use of IT.

Principle 2: Covering the Enterprise End-to-End
COBIT 5 covers all functions and processes within the enterprise and does not focus only on the 'IT function'. It considers all IT-related enablers to be enterprise-wide and end-to-end, i.e., inclusive of all resources internally and externally.

Principle 3: Applying a Single Integrated Framework
COBIT S is a single and integrated framework which also aligns with other latest relevant standards and frameworks, and thus provides complete enterprise coverage to integrate effectively with other frameworks, standards and practices used.

Principle 4: Enabling a Holistic Approach
Efficient and effective governance and management of enterprise IT requires a holistic approach i.e., it should also take several other components ¡n to account.

Principle 5: Separating Governance from Management
The COBIT 5 framework makes a clear distinction between governance and management. These two disciplines encompass different types of activities, require different organizational structure and serve different purpose.

Integrating COBIT 5 with Other Frameworks:

- COBIT5 provides basis to integrate other frameworks, standards and practices used such as ITIL, TOGAE and ISO 27001 effectively.
- It is also aligned with The GEIT standard which has set high-level principles for the governance of IT.
- COBIT 5 acts as the single overarching framework, which serves as a integrated source of guidance for other framework which should be aligned with the:
  . Enterprise policies, strategies, governance and business plans, and audit approaches;
  . Enterprise risk management framework; and
  . Existing enterprise governance organization