

GUIDELINE ANSWERS

PROFESSIONAL PROGRAMME

DECEMBER 2018

MODULE 2



**THE INSTITUTE OF
Company Secretaries of India**

भारतीय कम्पनी सचिव संस्थान

IN PURSUIT OF PROFESSIONAL EXCELLENCE

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The Guideline Answers contain the information based on the Laws/Rules applicable at the time of preparation. However, students are expected to be well versed with the amendments in the Laws/Rules made upto **six** months prior to the date of examination.

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PROFESSIONAL PROGRAMME EXAMINATION

DECEMBER 2018

INFORMATION TECHNOLOGY AND SYSTEMS AUDIT

Time allowed : 3 hours

Maximum marks : 100

NOTE: Answer **ALL** Questions.

Question 1

ABC Ltd. is a steel manufacturing company having multiple production units and branch offices across the country. The company has Oracle's Enterprise Resource Planning (ERP) system implemented and fully operational. The ERP system is hosted on a Datacenter located in Mumbai. The company always promotes the Technology up-gradation and implements state-of-art technology in its office automation. The company has been winning the Best Manufacturing Company Award for the last 5 years. The company's Top Management wants to make the Datacenter as a protected system according to new Information Technology (Information Security Practices and Procedures for Protected System) Rules, 2018 as per the notification dated 22nd May, 2018 of Ministry of Electronic and Information Technology (MEITY).

Based on the above, answer the following :

- (a) Oracle is one of the biggest computer technology companies in the world. Discuss it along with its ERP key strengths. (5 marks)*
- (b) As per the Rules, the company must constitute an Information Security Steering Committee (ISSC). What is the Composition of ISSC ? (5 marks)*
- (c) What would be the responsibilities of ISSC of the company to compliance for having a protected system ? (5 marks)*
- (d) What are the roles and responsibilities for the company to have protected system as mentioned under Rule 3(3) ? (5 marks)*

Answer 1(a)

Oracle Corporation is an American multinational computer technology corporation headquartered in Redwood Shores, California. Oracle was founded in 1977 and is now one of the world's leading enterprise software companies. It has built a sophisticated portfolio of business software applications, which complement the company's traditional strength in database and infrastructure systems. The company specializes primarily in developing and marketing database software and technology, cloud engineered systems, and enterprise software products — particularly its own brands of database management systems. The company also develops and builds tools for database development and systems of middle-tier software, enterprise resource planning (ERP) software, customer relationship management (CRM) software, and supply chain management (SCM) software.

Key Strengths of Oracle ERP Solution

1. Oracle's ERP solution suite helps customers achieve lower total cost of ownership, benefit from a predictable cost model, and reduce risk.

2. With Oracle's powerful, on-demand software technology, over 3.6 million end users are able to increase their productivity and gain competitive advantage, resulting in a superior ownership experience.
3. Oracle Enterprise Manager is a software that provides complete management solution for business applications, using a unique top-down approach. It provides strong monitoring and management that encompasses end-user experience, application flows, and the underlying software and system infrastructure.
4. Oracle offers proven and open solutions and a network of partner expertise. The company's solutions are built on open standards and leverage third-party solutions and add-on applications. Oracle's strong partner network delivers deep, industry-specific functionality and best practices.
5. Oracle has a better security framework as compared to other ERP suites in the market. It offer a role based security which makes it easy to manage. Moreover, only the required approved access is assigned to the user.
6. Oracle ERPs offer extensive customizations i.e., clients have the option to remodel the solution based on their specific requirements.
7. Oracle interfaces have an improved UI with fluidic interfaces which provide better user experience to the customers.
8. With advent of cloud technology more and more customers are moving to a cloud architecture. Oracle provides its customers with the option to directly move to cloud with minimal hassles with Oracle Cloud.
9. Reporting is fast swift and easier as Oracle ERP suites are based on database technology and integrates all solutions in a single database.

Answer 1(b)

The composition of the Information Security Steering Committee ISSC as mentioned in Rule 3(1) (a-b) shall be as follows:

- Chief Executive Officer/Managing Director/ Secretary of Organization will be the chairman;
- IT Head or equivalent;
- Financial Advisor or equivalent;
- Representative of National Critical Information Infrastructure Protection Center (NCIIPC);
- Any other expert (s) to be nominated by the organization.

Answer 1(c)

The ISSC shall be the apex body and its responsibilities (as mentioned under Rule 3(2)) shall be as follows:

- All the information security policies of a Protected System has to be approved by the ISSC.

- Any significant change in the network configuration which has an impact on the Protect System shall be approved by ISSC.
- It is mandatory that each significant change in the application(s) of the Protected System shall be approved by ISSC.
- A mechanism has to be established which ensures timely communication of the cyber incident(s) related to Protected System to the ISSC.
- Protected System shall be validated for assessment after every 2 (two) years.

Answer 1(d)

- The Rules lay down certain responsibilities for the organizations having a Protected System (as mentioned under Rule 3(3)).
- Nominate an officer as CISO whose roles and responsibilities shall be as per the latest Guidelines for Protection of Critical Information Infrastructure ("Guidelines") and "Role and Responsibilities of CISOs of Critical Sectors in India" released by the NCIIPC;
- Plan, establish, implement, operate, monitor, review, maintain and continually improve Information Security Management System (ISMS) of its system as per the latest Guidelines released by the NCIIPC or an industry accepted standard duly approved by the said NCIIPC;
- Ensure that the network architecture of Protected System shall be documented;
- The same shall be reviewed at least once a year, or whenever required, or according to ISMS;
- Plan, develop, maintain and review the documents of inventory of hardware and software related to Protected System;
- Ensure that the vulnerability/threat/risk (V/T/R) analysis for the cyber security architecture of Protected System shall be carried out at least once a year. Further the (V/T/R) analysis shall be initiated whenever there is significant change or upgrade in the system, by intimation of the same to ISSC;
- Plan, establish, implement, operate, monitor, review, and continually improve Cyber Crisis Management Plan (CCMP) in close coordination with NCIIPC;
- Ensure conduct of internal and external Information Security audits periodically.
- Establish a Cyber Security Operation Center (C-SOC) using such tools and technologies to implement preventive, detective and corrective controls to secure against advanced and emerging cyber threats.
- The records of unauthorised access, unusual and malicious activity, if any, shall be documented;
- Establish a Network Operation Center (NOC) using tools and techniques to manage control and monitor the network (s) of Protected System.

Plan, develop, maintain and review the process of taking regular backup of logs of

networking devices, perimeter devices, etc. and services supporting "Protected System" and the logs shall be handled as suggested by ISMS.

Attempt all parts of either Q. No. 2 or Q. No. 2A

Question 2

- (a) Briefly explain the punishment for publishing or transmitting of material depicting children in sexually explicit act, etc. in electronic form as per section 67B of the Information Technology Act, 2000 as amended.
- (b) Elaborate any two rapidly evolving trends in information systems which are getting widely used by the organisations.
- (c) Arithmetic Logic Unit (ALU) and Control Unit (CU) are two typical components of Central Processing Unit (CPU). Explain them briefly.
- (d) Explain any two Advanced System Securities measures which you can apply to High Criticality Systems. (4 marks each)

OR (Alternate question to Q. No. 2)

Question 2A

- (i) What are the salient features of Hierarchical database ? Describe briefly.
- (ii) What are the various applications of Internet ?
- (iii) Explain the advantages to adopt the E-mail system in the organisation.
- (iv) What are the elements of Management Information System (MIS) ? Explain briefly. (4 marks each)

Answer 2(a)

Section 67B of the Information Technology Act, 2000 as amended provides for the punishment for publishing or transmitting of material depicting children in sexually explicit act, etc., in electronic form. It states that Whoever -

- (a) Publishes or transmits or causes to be published or transmitted material in any electronic form which depicts children engaged in sexually explicit act or conduct; or
- (b) Creates text or digital images, collects, seeks, browses, downloads, advertises, promotes, exchanges or distributes material in any electronic form depicting children in obscene or indecent or sexually explicit manner; or
- (c) Cultivates, entices or induces children to online relationship with one or more children for and on sexually explicit act or in a manner that may offend a reasonable adult on the computer resource; or
- (d) Facilitates abusing children online, or
- (e) Records in any electronic form own abuse or that of others pertaining to sexually explicit act with children, shall be punished on first conviction with imprisonment of either description for a term which may extend to five years and with fine

which may extend to ten lakh rupees and in the event of second or subsequent conviction with imprisonment of either description for a term which may extend to seven years and also with fine which may extend to ten lakh rupees.

Provided that provisions of section 67, section 67A and this section does not extend to any book, pamphlet, paper, writing, drawing, painting representation or figure in electronic form-

- i. The publication of which is proved to be justified as being for the public good on the ground that such book, pamphlet, paper, writing drawing, painting representation or figure is in the interest of science, literature, art or learning or other objects of general concern; or
- ii. Which is kept or used for bona fide heritage or religious purposes.

Explanation. - For the purposes of this section "children" means a person who has not completed the age of 18 years.]

Answer 2(b)

The rapidly evolved trends in information system are as follows :

Use of Cloud Computing

One of the most talked about concept in information system is the cloud computing. Cloud computing is defined as utilization of computing services, i.e. software as well as hardware as a service over a network.

Typically, this network is the internet. Cloud computing is the delivery of computing services – servers, storage, databases, networking, software, analytics, intelligence and more – over the Internet (“the cloud”) to offer faster innovation, flexible resources and economies of scale. Customer typically pay only for cloud services he use, thereby, helping lowering the operating costs, run his infrastructure more efficiently and scale its operations as business changes.

Use of Mobile Application

Another emerging trend within information system is use of mobile applications (software application on Smartphone, tablet, etc.) in designing information systems.

Mobile application or mobile app has become a success since its introduction. They are designed to run on Smartphone, tablets and other mobile devices. A mobile application is a type of application software designed to run on a mobile device, such as a smartphone or tablet computer. Mobile applications frequently serve to provide users with similar services to those accessed on PCs. Apps are generally small, individual software units with limited function. They are available as a download from various mobile operating systems like Apple, Blackberry, Nokia, etc. Some of the mobile app are available free where as some involve downloading cost. The revenue collected is shared between app distributor and app developer.

Use of User Interfaces

User interface has undergone a revolution since introduction of touch screen. The touch screen capability has revolutionized way end users interact with application. Touch

screen enables the user to directly interact with what is displayed and also removes any intermediate handheld device like the mouse. Touch screen capability is utilized in smart phones, tablet, information kiosks and other information appliances.

Use of Analytics

Analytics is a process which helps in discovering the informational patterns with data. The field of analytics is a combination of statistics, computer programming and operations research. The field of analytics has shown growth in the field of data analytics, predictive analytics and social analytics. Data analytics is a tool used to support decision-making process. Predictive analysis is a tool used to predict future events based on current and historical information. Social media analytics is a tool used by companies to understand and accommodate customer needs. The every changing field of information technology has seen great advancements and changes in the last decade. And from the emerging trend, it can be concluded that its influence on business is ever growing, and it will help companies to serve customers better.

Use of Agile Technology: Agile Software Development

It is a group of software development methods based on iterative and incremental development, where requirements and solutions evolve through collaboration between self-organizing, cross-functional teams. It promotes adaptive planning, evolutionary development and delivery, a time-boxed iterative approach, and encourages rapid and flexible response to change. It is a conceptual framework that promotes foreseen interactions throughout the development cycle. Agile technology is being widely used by the organization in developing information system now a days and it is proving to be advantageous.

Answer 2(c)

Arithmetic Logical Unit (ALU)

An ALU is an integrated circuit within a CPU that performs arithmetic and logic operations. All calculations are performed in the Arithmetic Logic Unit (ALU) of the CPU. It also does comparison and takes decision. The ALU can perform basic operations such as addition, subtraction, multiplication, division, etc. and does logic operations via, >, <, =, <=, >= etc, logic transactions also include Boolean comparisons, such as AND, OR, XOR, and NOT operations. Whenever calculations are required, the control unit transfers the data from storage unit to ALU once the computations are done, the results are transferred to the storage unit by the control unit and then it is send to the output unit for displaying results.

ALUs are designed to perform integer calculations. Therefore, besides adding and subtracting numbers, ALUs often handle the multiplication of two integers, since the result is also an integer.

Control Unit

Control Unit is the part of the computer's central processing unit (CPU), which directs the operation of the processor, it also controls all other units in the computer. The control unit instructs the input unit, where to store the data after receiving it from the user. It controls the flow of data and instructions from the storage unit to ALU. It also

controls the flow of results from the ALU to the storage unit. The control unit is generally referred as the central nervous system of the computer that control and synchronizes its working.

A control unit works by receiving input information to which it converts into control signals, which are then sent to the central processor. The computer's processor then tells the attached hardware what operations to be performed. The functions that a control unit performs are dependent on the type of CPU because the architecture of CPU varies from manufacturer to manufacturer.

Functions of the Control Unit

- It coordinates the sequence of data movements into, out of, and between a processor's many sub-units.
- It interprets instructions.
- It controls data flow inside the processor.
- It receives external instructions or commands to which it converts to sequence of control signals.
- It controls many execution units (i.e. ALU, data buffers and registers) contained within a CPU.
- It also handles multiple tasks, such as fetching, decoding, execution handling and storing results.

Answer 2(d)

Advanced System Security Measures define the security measures that must be applied to High Criticality systems. The requirements are:

I. Audit and Accountability

- (a) *Enable process auditing or accounting* : Enable process auditing or accounting, which generates log information about the creation of new processes and their system activity.
- (b) *Audit privilege escalation or change in privilege* : Generate a log message whenever a user changes their level of privilege.
- (c) *Audit firewall denial* : Generate a log message when the host-based firewall denies a network connection.
- (d) *Audit all significant application events* : Log all significant application events.
- (e) *Write audit events to a separate system* : System logs must be written to a remote system in such a way that they cannot be altered by any user on the system being logged.

II. Configuration and Maintenance

- (a) *Follow advanced vendor security recommendations* : This document cannot be comprehensive for all systems and applications available. Conform to best practices and recommendations outlined in vendor security whitepapers and documentation.

- (b) *Host-based and network-based firewalls* : Systems must be protected by both a host-based and a network-based firewall that allows only those incoming connections necessary to fulfill the business need of that system.
- (c) *Configuration management process* : Configuration changes must be regulated by a documented configuration and change management process.
- (d) *Partitioning* : Systems may share hardware and resources only with other systems that have similar security requirements, regardless of their criticality classification. Systems which share similar security requirements have user communities of similar size and character, similar firewall profiles, and similar technical requirements. For example:
 - (i) Multiple systems of the same Criticality may be aggregated together to share hardware and resources provided they have similar security requirements.
 - (ii) High Criticality systems may share hardware and resources with Medium and Low Criticality systems provided that all systems meet these Advanced Systems Security Measures, and share similar security requirements.

III. Additional Requirements

Physical access: The system must reside in a secured, managed data center.

Answer 2A(i)

The hierarchical data model was the first database model to be created, it was an improvement on general file-processing systems because it allows the creation of logical relationships between information in a database. However, this structure also has its disadvantages that led to the eventual development of the network model and the relational model.

Features of Hierarchical Database are:

- The data are stored as records which are connected to one another through links.
- Relationship between records are relatively fixed by the structure i.e. hierarchical databases are less flexible.
- Records are logically structured in inverted tree pattern.
- Each record and node in hierarchy is related to other records in a parent child relationship.
- It mandates that each child record has only one parent whereas each parent record can have one or more child records.
- Parent and child records are stored close to each other on storage device and hence helps in reducing the hard disk input and disk output.
- Due to short distance between parent and child database access time and performance is improved.
- It implements one – to –one and one – to – many relationships. It cannot support Many to Many relationships

- Since process is structured, hence day to day operation can be fast.
- If a parent is deleted the child also gets deleted automatically
- Ad-Hoc queries require different relationship other than already defined. Thus it is difficult and time consuming to solve.

Answer 2A(ii)

1. **Communication** : Internet has become an indispensable means of communication now days. Since Email has become the synonym of business communication.
2. **Management of Business Operations** : Internet has become an resource for all business concerns. Now most of the organization owns their web portals where one may get detailed information about the organization.
3. **Education** : Internet is extensively used presently in providing education. Many organization have emerged which are providing free online education through MOOCS (Massive open online course). This has become possible only through the Internet.
4. **Research and studies** : Internet has proved to be a boon for research and studies. Now, most of the good libraries have got digitized and these are available online. In addition to the online libraries, ample of material is freely available on the internet.
5. **E-commerce** : E Commerce is another application of internet which has made everyone's life easier. Now sitting at home, one may buy railway tickets, transfer money from one account to another, buy insurance policies, and buy house hold goods. E-commerce has benefited business, consumer and even the government.
6. **E-governance** : E-governance is another application of internet. In the age of internet, government has also taken major steps for computerization of government offices. This has largely assisted in eliminating various disadvantages of bureaucracy.
7. **Entertainment/Leisure** : Internet has actively become a platform for entertainment. Hundreds of websites provide content as films, songs, videos are readily available online for the users.
8. **Social Networking** : Internet has provided millions of online users to robustly connect with each other using various online social media platforms; eg. : Twitter, Facebook, LinkedIn etc.

Answer 2A(iii)

Some of the major advantages of e-mail are summarized as follows:

1. **Speed** : E-mail messages can be transmitted very quickly. As a means of communication, e-mail is considered extremely fast, with some messages able to reach their destination at an astounding pace.

2. **Cost** : The cost of sending emails is extremely low and far economical when compared to postal charges.
3. **Multiple copies** : E-mail allows multiple copies of the same basic message to be created and transmitted. A message can be created in the usual way and addressed to a group. When the message is transmitted, copies are sent automatically to each of the people belonging to the group.
4. **Auditing** : Even the simplest e-mail package will provide a number of features that allow users to audit their messages. Most programs allow users to keep copies of any messages they produce, automatically marking them with the date and time they were created.
5. **Sharing Data** : E-mail messages can be used to transmit data files to other users. Files can be attached to messages and transmitted in the usual way. All types of data can be sent in this way, including word processor files, spreadsheet data, graphics and database files.
6. **Multimedia** : The latest e-mail packages allow users to include multimedia elements in their messages. Messages can include a variety of different elements, including graphics, video, hyperlinks to information on the Internet and sound files.
7. **Group work** : E-mail supports group work and remote working. Group work involves several people working on the same project, using IT to help them communicate with each other and share data files. Allow working from a remote location or create a virtual office, wherein people working away from a central office - perhaps at home - but staying in contact through e-mail and other methods.
8. **Flexibility** : The hardware and software used for handling e-mail can also be used for a variety of other purposes. A typical modem, for example, can also be used to send or receive fax messages.

Answer 2A(iv)

MIS is a system that helps management in the process of decision making. MIS is an organized approach to study the information needs of an organization's management at every level in making operational, tactical, and strategic decisions. The three elements of MIS are Management, Information and System. It is necessary to understand these three components:

Management

It refers to a set of functions and processes designed to initiate and coordinate group efforts in an organized setting, directed towards promoting certain interests, preserving certain values and pursuing certain goals. It involves mobilization, combination, allocation and utilization of physical, human and other needed resources in a judicious manner by employing appropriate skills, approaches and techniques.

Information

It is a source of addition to the existing knowledge. In MIS, it is obtained by processing

data in to a form meaningful to the users. It may relates to various aspects of working and can have different formats.

System

A system is a set of components that operate together to achieve a common objective or multiple objectives. These objectives are realized in the outputs of the system. An efficient system uses its inputs economically in producing its outputs. An effective system produces the outputs that best meet the objectives of the system. MIS can be thought of as a system (set of hardware, software, manpower, procedures, etc) to provide timely and accurate information to the management users in an organisation. The objective of the management information system is to provide formal informational support to the members of the organization.

Attempt all parts of either Q. No. 3 or Q. No. 3A

Question 3

- (a) *Define Data Structure with its characteristics.*
- (b) *Write any four advantages of windows over DOS operating environment.*
- (c) *Define World Wide Web (WWW) Technology with its important features.*
- (d) *What are the limitations of Expert System ? Explain briefly. (4 marks each)*

OR (Alternate question to Q. No. 3)

Question 3A

- (i) *What is utility software ? List out its different categories.*
- (ii) *Explain the need of information at various management levels in the organisation.*
- (iii) *What is Data Mining ? How is it helpful in a big retail organisation ?*
- (iv) *Describe briefly the information system which supports the various functions of Human Resources Management (HRM). (4 marks each)*

Answer 3(a)

In computer science, a data structure is a particular way of storing and organizing data in a computer so that it can be used efficiently. Data structures is about rendering data elements in terms of some relationship, for better organization and storage Different kinds of data structures are suited to different kinds of applications, and some are highly specialized to specific tasks. For example, B-trees are particularly well-suited for implementation of databases, while compiler implementations usually use hash tables to look up identifiers.

The basic types of data structures include:

1. files
2. lists
3. arrays
4. records
5. trees
6. tables

Each of these basic structures has many variations and allows different operations to be performed on the data.

Characteristics of Data Structures

1. It contains data items that can be elementary item, group item or another data structure.
2. It has a set of operations that can be performed on data items. Such as searching, insertion etc.
3. It describes the rules of how the data items are related to each other.

Answer 3(b)

List any four advantages of windows over DOS operating environment.

1. Biggest Different is Graphical user interface and Multimedia feature both are support by Window, not MS DOS. Windows is pure GUI (Graphical User Interface) based whereas DOS is character oriented command based OS.
2. DOS has limited number of functions to deal with the screen and communication devices. Most DOS programs do not use those features (functions). Therefore, it is mostly faster to deal directly with the computer's hardware. On the other hand, windows applications interact with the windows environment, not directly with the hardware. If an application decides to read the keyboard, it calls a function within windows. Internally, windows decodes the function call and translates it into hardware commands.
3. Windows is multitasking operating system whereas DOS is single tasking.
4. DOS is a single threading OS, Windows is a Multithreading.
5. Windows contains build-in networking, which allows users to share files and applications with each other, whereas DOS doesn't have built-in networking facility.
6. Server administration is not possible in DOS.
7. Windows have more security features than the DOS.
8. Windows support more memory than the DOS.
9. Windows applications take up less disk space, and less space in memory, when windows is running already.

Answer 3(c)

The World Wide Web (abbreviated as www commonly known as the web), is a system of interlinked hypertext documents (these are standard document format for internet, written using Hyper Text Mark-up Language, HTML), accessed via the Internet. It provides a standard method for exchanging and publishing information on the internet. It is accessed through web browsers which display web pages of embedded graphics and HTML/ XML encoded text.

Features of World Wide Web

1. *Medium of Publishing Information* : The 'world wide web' or 'web' for short is a medium for publishing information on the internet in an easy to use form.
2. *Easy retrieval of Information* : The amount of information available on the Internet has become so large that it is difficult to search for specific information. The World Wide Web (www) makes retrieval easy and quick.
3. *Easy Navigation of Documents* : The www is a search tool that helps you find and retrieve information from a Web site using links to other sites and documents.
4. *Linking of Documents*: Hypertext can make links within the same document or to other documents.
5. *Easy search, transverse and other use of information* : www lets you search, traverse, and use many types of information at numerous sites and in multiple forms. This interface is called a browser.
6. *Use of Protocol* : Just like the Internet, the www has a protocol, which is known as Hyper Text Transfer Protocol (HTTP). HTTP acts as an interface between a Web Client Software, such as Netscape Navigator.

Answer 3(d)**Limitations of Expert system**

- Expert systems are sometimes overrated.
- Expert systems can be expensive to develop and maintain.
- It is difficult to elicit the knowledge of experts.
- It lacks common sense.
- Expert system cannot learn of its own.
- Expert systems do not have a wide application and hence are not extensively tested.
- Their scope is limited to narrow problems or providing focused solutions.
- Possibility of Error.
- Require Inputs in a sophisticated format and cannot readily deal with "Mixed" knowledge or crude user input.
- The validation of expert systems can be difficult.

Answer 3A(i)

Utility software is system software designed to help analyze, configure, optimize or maintain a computer. Utility software usually focuses on how the computer infrastructure (including the computer hardware, operating system, application software and data storage) operates. These software are focused on how OS works and how it perform task to enable smooth functioning of computer. Due to this focus, utilities are often rather technical

and targeted at people with an advanced level of computer knowledge - in contrast to application software, which allows users to do things like creating text documents, playing video games, listening to music or viewing websites.

Utility software categories are:

1. Antivirus

Antivirus software is a computer program which detects, prevents and takes action to disarm or remove malicious software, such as viruses and worms, from a computer.

2. Data Clean up

Disk Clean up is a system utility which allows scanning the entire hard drive to search for extra room by deleting any unnecessary files such as temporary files from the Internet and cookies.

3. Disk Defragmenter

The Disk Defragmenter is another system utility which is used to reassemble fragmented files. Whenever a file is modified in any way, the computer stores the file in broken pieces across the hard drive rather than putting the whole file in one spot.

4. System Restore

System Restore is a system utility that allows returning the computer to an earlier time in which it had not encountered an error.

5. Disk Compression and Archivers

Disk compression is a system utility that allows for a program to search the hard drive and compress files, particularly old or unused files.

6. Registry Cleaners

Registry cleaners are programs that allow scanning the computer for any errors in the registry, which is a collection of the core computer files that are essential to performance and functionality, and repairs them if needed.

7. File Splitters

File splitters are programs that allow to break a file into smaller pieces in order to store or send files.

8. Archivers output a stream or a single file when provided with a directory or a set of files.

9. Backup software are the system utilities that make copies of all information stored on a disk and restore either the entire disk (e.g. in an event of disk failure) or selected files (e.g. in an event of accidental deletion).

10. A clipboard manager expands the clipboard functionality of an operating system and adds functionality to an operating system's clipboard.

11. Cryptographic utilities provide command-line tools for code signing, signature verification, and other cryptography tasks.

12. Data compression utilities output a shorter stream or a smaller file when provided with a stream or file.

13. **Data synchronization** utilities establish consistency among data from a source to target data storage and vice versa.
14. **Disk partitions** can divide an individual drive into multiple logical drives, each with its own file system which can be mounted by the operating system and treated as an individual drive.
15. **Disk space analyzers** for the visualization of disk space usage by getting the size for each folder (including sub folders) & files in folder or drive, showing the distribution of the used space.
16. **File managers** provide a convenient method of performing routine data management tasks, such as deleting, renaming, cataloging, uncataloging, moving, copying, merging, generating and modifying data sets.
17. **Text editors** directly modify the text or data of a file. These files could be data or an actual program.
18. **Network utilities** analyze the computer's network connectivity, configure network settings, check data transfer or log events.
19. **Screensavers** were desired to prevent phosphor burn-in on CRT and plasma computer monitors by blanking the screen or filling it with moving images or patterns when the computer is not in use. Contemporary screensavers are used primarily for entertainment or security.
20. **System monitors** for monitoring resources and performance in a computer system.
21. **System profilers** provide detailed information about the software installed and hardware attached to the computer.

Answer 3A(ii)

Information is any kind of knowledge about things, facts, concepts, etc. that is exchangeable amongst people. It is actually facts provided or learned about something or someone and is the useful knowledge derived from the data. For any manager; information is the key for an organization success as it plays a crucial role in decision making at all levels. Managers at different organizational levels make different types of decisions, control different types of processes, and have different information needs. In order to efficiently do their work, managers must diagnose their information needs.

Information is needed for decision making at all levels of management. Managers at different organizational levels make different types of decisions, control different types of processes, and have different information needs.

Three levels of management include :

1. Top Management or Strategic Management
2. Middle Management or tactical management
3. Low Level Management or Operational Management

Top Level - Strategic managers are responsible for determining the overall goals and objectives of the business. They need the information primarily about the trends in the external environment and the functioning of the internal organisation. Thus, the

information utilized by top management is mostly futuristic, external and summarised in nature.

Strategic Managers includes directors/owner that make decisions which affect the entire organization, or large parts of it, and leave an impact in the long run. The decision making at this level is highly unstructured. By this we mean, there may not be a proper format for decision making. It requires lot of inputs in terms of information, but there is no fixed way of mixing those inputs.

Middle Level - Tactical management may be viewed as “administrative” management in the sense that it is responsible for the elaboration, classification and operationalization of organization goals, strategies and policies in terms of action. The nature of information required at the middle management level is less diverse, descriptive/detailed and complex.

Middle, or tactical, management receive strategic decisions from strategic management as general directives. Using those directives as guidelines, they develop tactics to meet those strategic directives. The decision making at this level is semi structured. Some pieces of information can be mixed to get some conclusion but some amount of ambiguity is always there.

Bottom Level - Operational level, managers are responsible for routine, day-to-day decision and activities of the organization, which do not require much discretion. The information required at this level is usually repetitive in nature at periodic intervals such as daily, weekly, or monthly. Operational managers are responsible for daily operations. They make decisions concerning a narrow time span about the deployment of small groups of clerical and / or shop floor workers. Generally the decisions at this level are structured in nature.

People in different management levels have different information needs. Most of the information that managers require is used to make decisions. The decision making process of middle managers and above is less structured than that of operational managers. In general, strategic decisions have no proven methods for selecting a course of action that guarantees a predicted outcome.

Answer 3A(iii)

Data Mining : It is a technique of extracting hidden predictive information from large databases. It is a powerful new technology to help companies focus on the most important information in their data warehouses. Data mining tools predict future trends and behaviors, allowing businesses to make proactive, knowledge- driven decisions.

Data mining tools predict future trends and behaviors, allowing businesses to make proactive, knowledge-driven decisions. For a commercial business, the discovery of previously unknown statistical patterns or trends can provide valuable insight into the function and environment of their organization. Further, it could assist an organization in taking considered and knowledge driven decisions especially retail firms in following manner-

- (i) It would help the company in focussing on the most important information in the data warehouses;

- (ii) Assemble data from multiple sources into a single database enabling a central view across the enterprise.
- (iii) Maintain a centralized history of Data from all the stores and billing counters.
- (iv) Improve the quality of data by enhancing its consistency across all stores irrespective of language, currency etc.
- (v) Restructures the data in the form of tables and views so that it makes sense to the business users.
- (vi) It facilitates in extracting meaningful patterns of Buyer Behaviour, Purchase decisions etc.
- (vii) It assists in designing marketing, pricing and operational strategies.
- (viii) It also helps in understanding various other factors such as consumer behaviour, product performance, market predictions, performance of advertising campaigns, shelf space allocations etc.
- (ix) This will help in Data Mining, analytical processing and market research.

Answer 3A(iv)

The human resources function is responsible for attracting, developing, and maintaining the firm's workforce. Human resources information systems support activities such as identifying potential employees, maintaining complete records on existing employees, and creating programs to develop employees' talents and skills, managing remuneration and benefits, and processing payroll.

Strategic-level human resources systems identify the manpower requirements (skills, educational level, types of positions, number of positions, and cost) for meeting the firm's long-term business plans. At the management level, human resources systems help managers monitor and analyse the recruitment, allocation, and compensation of employees. Human resources operational systems track the recruitment and placement of the firm's employees.

Consider a typical human resources Transaction Processing System (TPS) for employee record keeping. It maintains basic employee data, such as the employee's name, age, sex, marital status, address, educational background, salary, job title, date of hire, and date of termination. The system can produce a variety of reports, such as list of newly hired employees, employees who are terminated or on leaves of absence, employees classified by job type or educational level, or employee job performance evaluations.

Question 4

- (a) *What measures should be taken to minimize security threats for E-commerce ?*
(4 marks)
- (b) *As an IS auditor, which documents should you verify for Systems Development Methodology ? State briefly.*
(4 marks)
- (c) *What do you understand by State Data Centre and National Service Delivery Gateway in the e-Governance System ?*
(4 marks)

- (d) *What are the functions of National e-Governance Division ? Discuss briefly.*
(4 marks)

Answer 4(a)

Following measures should be taken to minimize security threats to e-commerce:

1. *Perform a risk assessment* : A list of information assets and their value to the firm.
2. *Develop a security policy* : A written statement on:
 - What assets to protect from whom?
 - Why these assets are being protected?
 - Who is responsible for what protection?
 - Which behaviors are acceptable and unacceptable?
3. *Develop an implementation plan* : It is a set of action steps to achieve security goals.
4. *Create a security organization* : An organization or a unit to administer the security policy
5. *Perform a security audit* : A routine review of access logs and evaluation of security procedures.

Answer 4(b)

In most companies Systems Development is badly handled and proper documentation is not maintained. The code is developed in great hurry and control aspects are given the go by. The accuracy of the processing and the legal compliance are left as open questions.

The IS auditor should verify whether following documents exist or not:

1. System Scope Document.
2. Functional Requirement Specifications.
3. Software Requirement Specifications or Request for Proposal.
4. Design Description or Functional Specification Document.
5. Customization Register.
6. Software code.
7. Test Plan.
8. Unit test results.
9. Integration test results.
10. Acceptance test results.

The documentation should be properly cross-indexed. The effect of a change made in the system should be well understood. It should not happen that, due to ignorance of the entirety of the business process and its ramifications, a change made in one area affects other areas, that too after a lapse of time.

Every time a change is made, a thorough testing should be done and documented.

The IS Auditor should get necessary evidence and comment on the lack of proper adherence to procedure.

Answer 4(c)

State Data Centre

State Data Centre (SDC) has been identified as one of the important element of the core infrastructure for supporting e-Governance initiatives of National eGovernance Plan (NeGP).

Under NeGP, it is proposed to create State Data Centres for the States to consolidate services, applications and infrastructure to provide efficient electronic delivery of G2G, G2C and G2B services. These services can be rendered by the States through common delivery platform seamlessly supported by core Connectivity Infrastructure such as State Wide Area Network (SWAN) and Common Service Centre (CSC) connectivity extended up to village level.

National Service Delivery Gateway (NSDG)

The National e-Governance Plan (NeGP) of the Govt. of India aims to make all Government services accessible to the common man in his locality, through common service delivery outlets and ensure efficiency, transparency & reliability of such services at affordable costs to realize the basic needs of the common man.

Answer 4(d)

1. Programme Management of NeGP, inter-alia including facilitating and supporting DIT in undertaking the following tasks and responsibilities assigned to DIT under NeGP:
 - a. Facilitating implementation of NeGP by various Ministries and State Governments.
 - b. Providing technical assistance to Central Ministries and State Line Departments.
 - c. Serving as a secretariat to the Apex Committee.
 - d. Undertaking technical appraisal of all NeGP projects to examine issues such as overall technology architecture, framework, standards, security policy, service delivery mechanism, sharing of common infrastructure etc.
 - e. Human Resource Development, Training and Awareness Building.
 - f. Framing core policies, technical assistance, R&D, awareness and assessment and creation of organization structure.
 - g. Acting as a Central Agency for an effective implementation of Capacity Building Scheme inter-alia involving provisioning of manpower at various SeMTs across States/ UTs.
2. Positioning of a Capacity Building Management Cell for effective management

of manpower at SeMTs together with management of other Scheme activities including training, setting up HR policies, etc.

Question 5

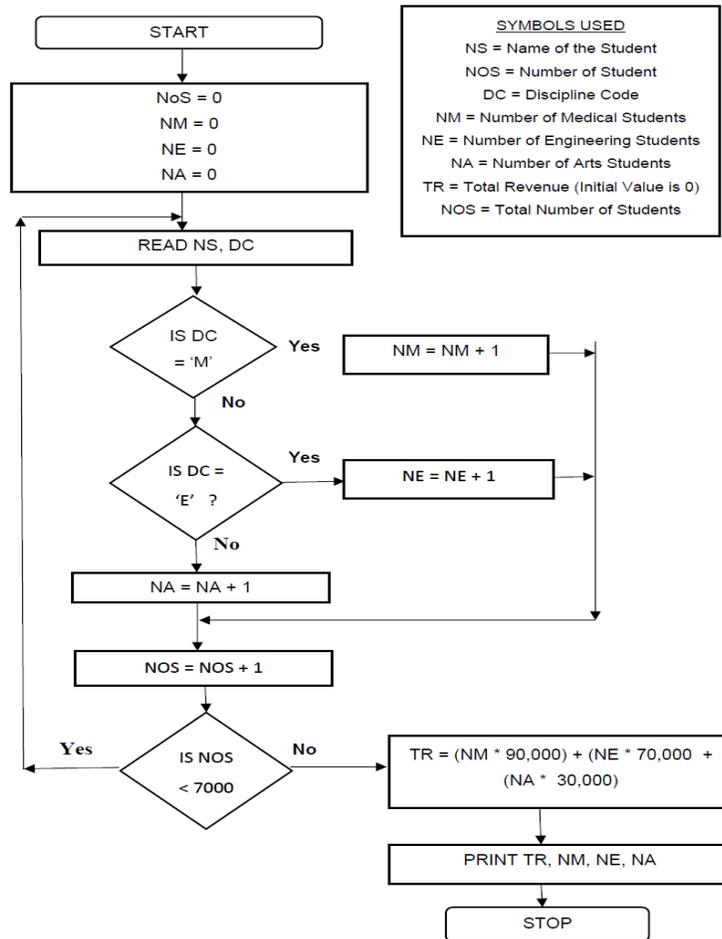
(a) There are total 7,000 students in a university having three different disciplines. Their discipline code and yearly tuition fee per student are as follows :

Discipline of Student	Code	Yearly tuition fee (in Rupees)
Medical	M	90,000
Engineering	E	70,000
Arts	A	30,000

Draw a flowchart to read the name, discipline code of the student from the file and print the total yearly revenue earned by the university and the number of students discipline-wise. (8 marks)

(b) Explain key steps involved in conducting Information System Audit. (8 marks)

Answer 5(a)



Answer 5(b)

The following are the steps in information systems audit:

1. The preliminary review phase

The first step in an IS audit is the preliminary review of the computer installation. The main objective of this step is to obtain the information necessary for the auditor to make a decision on how to proceed with the audit. This stage includes a review of the management and application controls existing in the company. During the review, the auditor tries to understand the management practices used at different levels of the computer hierarchy.

2. The detailed review phase

The objective of this phase is to obtain the information necessary for the auditor to have an in-depth understanding of the controls used in a computer installation. Upon review, the auditor reviews both the management and application controls. The management controls are reviewed first, as major weaknesses in these controls enables the auditor to abandon the review of application controls. In this phase, the auditor must also identify the causes of loss existing within the installation and the controls established to reduce the effects of these causes of loss.

3. The compliance testing phase

The objective of this phase is to determine whether or not the system of internal controls operates as it is supposed to operate. The auditor checks whether all internal controls exist and are working reliably. The auditor makes use of both manual sources of information mentioned above and computer assisted evidence collection techniques to gather inputs for evaluation.

At the conclusion of this phase, the auditor must evaluate the internal control system in the light of the evidence collected on the reliability of individual controls.

4. The substantive testing phase

The objective of this phase is to obtain sufficient evidence to enable the auditor make a final judgement on whether or not material losses have occurred during computer data processing.

The following are the five types of substantive tests that can be used within a data processing installation:

- (i) Tests to identify erroneous processing.
- (ii) Tests to assess the quality of data.
- (iii) Tests to identify inconsistent data.
- (iv) Tests to compare data with physical counts.
- (v) Confirmation of data with outside sources.

5. Overall evaluation

Upon substantive testing, the auditor once again has an overall view of the control systems existing within the company.

6. Documentation

On completing the audit process, the auditor prepares a comprehensive audit report giving details of all the phases of review and testing conducted. The audit report also consists of the recommendations of the auditor for improvement in control systems.

Question 6

Write short notes on the following :

- (a) *Cloud computing and its benefits*
- (b) *Semiconductor storage technology*
- (c) *GOVERNMENT TO CITIZEN (G2C) Model*
- (d) *Characteristics of a system.* (4 marks each)

Answer 6(a)

One of the most talked about concept in information system is the cloud computing. Cloud computing is defined as utilization of computing services, i.e. software as well as hardware as a service over a network. Cloud computing simply means the use of computing resources (hardware and software) as a service through networks, typically the Internet

Typically, this network is the internet. Some of the benefit of cloud computing is as follows:

1. Cloud computing reduces IT infrastructure cost of the company. Putting businesses on cloud gives easy access to company's data and saves time and money in project start-ups.
2. Cloud computing promotes the concept of virtualization, which enables server and storage device to be utilized across organization.
3. Cloud computing makes maintenance of software and hardware easier as installation is not required on each end user's computer.
4. *Security* : One of the major concerns of every business, regardless of size and industry, is the security of its data. Data breaches and other cybercrimes can devastate a company's revenue, customer loyalty and brand positioning.

Cloud offers many advanced security features that guarantee that data is securely stored and handled.

5. *Scalability* : Different companies have different IT needs — a large enterprise of 1000+ employees won't have the same IT requirements as a start-up. Using cloud is a great solution because it enables enterprise to efficiently and quickly scale up / down their IT departments, according to business demands.

Cloud based solutions are ideal for businesses with growing or fluctuating bandwidth demands. If your business demands increase, you can easily increase your cloud capacity without having to invest in physical infrastructure.

6. *Mobility* : Cloud computing allows mobile access to corporate data via

smartphones and devices, which is a great way to ensure that no one is ever left out of the loop. Staff with busy schedules, or who live a long way away from the corporate office, can use this feature to keep instantly up-to-date with clients and coworkers.

7. *Disaster Recovery*: Cloud services makes it easier for the customers to recover their lost data in case of Server/ Meory failure or in case of emergency scenarios— from natural disasters to power outages

Some issues concerning cloud computing are privacy, compliance, security, legal, abuse, IT governance, etc.

Answer 6(b)

Semiconductor Storage Technology

Semiconductor memory is an electronic data storage device, often used as computer memory, implemented on a semiconductor-based integrated circuit. Examples of semiconductor memory include non-volatile memory such as read-only memory (ROM), magneto resistive random-access memory (MRAM), and flash memory. It also includes volatile memory such as static random-access memory (SRAM), which relies on several transistors forming a digital flip-flop to store each bit, and dynamic random-access memory (DRAM), which uses one capacitor and one transistor to store each bit. Shift registers, processor registers, data buffers and other small digital registers that have no memory address decoding mechanism are not considered as memory.

Answer 6(c)

Government to Citizen (G2C) model of e-governance refers to those activities in which the government provides one- step, on-line access of information and services to citizens. G2C applications enable citizens to ask questions of government agencies and receive answers such as file income taxes (federal, state and local), pay taxes (income, real estate), renew driver licenses etc. It gives citizens the choice of when to interact with the government (e.g. 24/7 in a week), from where to interact with the government (e.g. service centre or from one's home/workplace) and how to interact with the government (e.g. through internet, fax, telephone, e-mail etc.)

Type of services which are provided by this model includes:-

- Payment of online bills such as electricity, water, telephone bills etc.
- Online registration of applications.
- Copies of land-record.
- Online filling of complaints.
- Availability of any kind of online information.

Answer 6(d)

Characteristics of a System

1. Organization of interrelated elements

Organization implies structure and order. It is the arrangement of components that help to achieve objectives. For example, a computer system is designed

around an input device, a central processing unit, an output device, and one or more storage units. When linked together they work as a whole system for producing information.

2. Interrelated components interaction

Interaction refers to the manner in which each component functions with other component of the system. In a computer system, for example, the central processing unit must interact with the input device to solve a problem.

3. Interdependencies among system's parts

Interdependence means that parts of the system depend on one another. They are coordinated and linked together according to a plan. One subsystem depends on the input of another subsystem for proper functioning; i.e. the output of one subsystem is the required input for another subsystem.

4. Common objectives

All sub parts of a system must operate cohesively to achieve one common objective. This is important and therefore while designing an application, the designer must know the central objective of a computer application early in the analysis for a successful design and conversion.

FINANCIAL, TREASURY AND FOREX MANAGEMENT

Time allowed : 3 hours

Maximum marks : 100

NOTE : 1. Answer ALL Questions.

2. Tables showing the present value of ` 1 and the present value of an annuity of ` 1 for 15 years are annexed.
3. Suitable assumptions, if considered necessary, may be made while answering a question. However, such assumptions must be stated clearly.
4. Working notes form the part of answer.

Question 1

Comment on the following :

- (a) Application of computer has made it possible to handle large number of operations particularly of repetitive nature.
- (b) Despite of several objections, cost of capital is used as the basis to evaluate investments.
- (c) Treasury management function is important at macro level too.
- (d) The Basel Committee for Bank Supervision (BCBS) has prescribed a set of norms for capital requirement for the Banks for all countries. (5 marks each)

Answer 1(a)

Application of computers has made it possible to handle a large number of operations particularly of repetitive nature. In the area of financial management, computers have helped in activities ranging from routine and repetitive record-keeping activities like accounting, inventory management, budgeting, capital investment decisions, evaluating uncertainties in decision making, cost estimation, information analysis, security analysis, etc. Processing of accounting data including general ledger information and trial balance and preparing income statement and balance sheet has been rendered easy through the use of computers in financial planning and control. Analysis of funds flow, cash flow and income statement and balance sheet is done through the use of computers. Variety of computer analysis are available for forecasting financial needs of the business organisation and making the best choice from amongst the various sources of finance. Thus, the nature of financial decisions and the process therefore has undergone a considerable change with the introduction of computer technology.

Answer 1(b)

Despite several objections, cost of capital is used as the basis to evaluate investments whose cash flows are perfectly correlated with the cash flows from the company's present assets. With perfect co-relation between the two sets of cash flows, risk is the same. But, if the timing of the cash flows is not same, the same discount rate cannot be used for both investments. But weighted average cost of capital represents averaging of all the risks of the company and can be used to evaluate investments in as

much as the same manner as that of the pay-back method. It gives some insights and guidance and to that extent it is good to be used. Present value of an investment can be computed using a weighted average cost of capital and this can be compared with present values calculated using the other discount rates. It may be that an investment with a positive present value should be rejected because of its risk characteristics or that an investment with a negative present value using the weighted average cost of capital should be accepted. All this will differ from situation to situation and case to case. Nevertheless, evaluation of projects involving capital investments requires some basis which could serve as the minimum rate of return which a project should generate. In such cases, weighted cost of capital could serve as an accepted discounting rate for evaluating investment decisions as no project will be acceptable which does not generate funds equal or greater to the cut-off rate represented by weighted cost.

Answer 1(c)

The function of treasury management is concerned with both macro and micro facets of the economy. At the macro level, the pumping in and out of cash, credit and other financial instruments are the functions of the government and business sectors, which borrow from the public. These two sectors spend more than their means and have to borrow in order to finance their ever-growing operations. They accordingly issue securities in the form of equity or debt instruments. The latter are securities including promissory notes and treasury bills which are redeemable after a stipulated time period. Such borrowings for financing the needs of the government and the business sector are met by surplus funds and savings of the household sector and the external sector. These two sectors have a surplus of incomes over expenditure. The micro units utilize these surpluses and build up their capacities for production of output and this leads to the productive system and distribution and consumption systems.

Answer 1(d)

The Basel Committee for Bank Supervision (BCBS) has prescribed a set of norms for the capital requirement for the banks for all countries to follow. These norms ensure that capital should be adequate to absorb unexpected losses. In addition, all countries, including India, establish their own guidelines for risk based capital framework known as Capital Adequacy Norms. These norms have to be at least as stringent as the norms set by the Basel committee. A key norm of the Basel committee is the Capital Adequacy Ratio (CAR), also known as Capital Risk Weighted Assets Ratio, which is a simple measure of the soundness of a bank. The ratio is the capital with the bank as a percentage of its risk-weighted assets. Given the level of capital available with an individual bank, this ratio determines the maximum extent to which the bank can lend. The Basel committee specifies a CAR of at least 8% for banks. This means that the capital funds of a bank must be at least 8% of the bank's risk weighted assets.

The RBI has specified a minimum of 9%, which is more stringent than the international norm. The RBI also provides guidelines about how much risk weights banks should assign to different classes of assets (such as loans). The riskier the asset class, the higher would be the risk weight. Thus, the real estate assets, for example, are given very high risk weights. This regulatory requirement that each individual bank has to maintain a minimum level of capital, which is commensurate with the risk profile of the bank's assets, plays a critical role in the safety and soundness of individual banks and the banking system.

Attempt all parts of either Q. No. 2 or Q. No. 2A**Question 2**

Distinguish between the following :

- (a) *Corporate Financial Services and Personal Financial Services.*
- (b) *Sensitivity Analysis and Risk Analysis.*
- (c) *Forfaiting and Export Factoring.*
- (d) *Telegraphic Transfer and Mail Transfer.* (4 marks each)

OR (Alternate question to Q. No. 2)**Question 2A**

- (i) *What is the United Nation Industrial Development Organisation (UNIDO) approach to Social Cost Benefit Analysis of a project ? Stages need not be discussed.*
- (ii) *Cost of capital is affected by controllable as well as uncontrollable factors. Explain.*
- (iii) *According to Securities and Exchange Board of India (SEBI) how many categories of Merchant Banking Organisation exist in India ? Explain the categories.*
- (iv) *Explain the four main systems of International Finance Market which ensure availability of foreign currency.* (4 marks each)

Answer 2(a)**Corporate Financial Services**

The financial needs of the Corporate/Commercial sectors are varied, complex and large. Therefore it puts a great demand on financial industry's expertise in effectively meeting them. Their needs may include:

- (a) The need for money in short term, medium term and long term;
- (b) The need to earn a return on money held in short term, medium term and long term;
- (c) The need to move money domestically as well as internationally;
- (d) The need to manage trading as well as non-trading risks;
- (e) The need for information;
- (f) The need for advice or expertise.

Personal Financial Services

The personal financial services industry offers three basic, generic products and service benefits to individual savers, borrowers and investors. These are:

1. Transactional products and services.
2. Wealth accumulation products and services.
3. Products and services generating financial security.

Transactional products and services range from bank cheque-book accounts through standing orders, direct debits and automatic teller machine (ATM) facilities to the provision of branded credit cards offering the facility of payment of housing and consumer loan. Wealth accumulation products and services revolve around savings which are represented by a diverse range of savings and deposit accounts, units, investment in corporate securities etc. Generation of financial security centre around pension/provident funds, insurance etc.

Answer 2(b)

Both sensitivity analysis and risk analysis are the methods of evaluating risks in a capital budgeting decision. The two approaches have their own advantages and limitations and are used along with each other for risk analysis.

Sensitivity Analysis

Projects are sensitive to fluctuation in values of critical variables like costs of inputs, cost of funds and prices of outputs. It is important to examine how sensitive is the project to fluctuations in the values of these variables because the basic assumptions taken for projections of balance sheet, cash flow statements for future years have an element of uncertainty. Different projects may, however, get affected differently from changes in the assumption of cost and return items. Sensitivity analysis helps in finding out that how sensitive is the project to these fluctuations. Sensitivity analysis involves identification of crucial variable relating to costs and returns, specification of alternative values of the crucial variables and re-computation of the NPV and IRR by using the alternative values. A project, which is highly sensitive to even small fluctuations in cost and price, is considered to be a risky project for financing.

Risk Analysis

Even though through sensitivity analysis and scenario analysis techniques, some of the uncertainties in the project are taken care, both these types of analysis have limitation that they have deterministic values for the variables. In a significant improvement over these methods, under objective risk analysis, probabilistic analysis is done by identification of key risk variables, finding out values of each risk variable, assigning probabilities to each of the risk variables, using these values for risk analysis and finding out the probability of negative outcome of the project, i.e. what is the probability that the NPV of the project will be negative. The risk analysis adds valuable information to the project analysis and it is an important tool in this respect but to take up investment or not depends on the risk taking capacity of the entrepreneur which varies from person to person. Therefore, it is judgmental in nature.

Answer 2(c)

Forfaiting and Export Factoring

Forfaiting is similar to Export Factoring or cross border factoring to the extent both have common features of non recourse and advance payment. But they differ in several important respects:

- (a) A forfeiter discounts the entire value of the note/bill but the factor finances between 75-85% and retains a factor reserve which is paid after maturity.

- (b) The availing bank which provides an unconditional and irrevocable guarantee is a critical element in the forfaiting arrangement where as in a factoring deal, particularly non-recourse type, the export factor bases his credit decision on the credit standards of the exporter.
- (c) Forfaiting is a pure financing arrangement while factoring also includes ledger administration, collection and so on.
- (d) Factoring is essentially a short term financing deal. In forfaiting finances notes/bills arising out of deferred credit transaction spread over three to five years.
- (e) A factor does not guard against exchange rate fluctuations; a forfeiter charges a premium for such risk.

Answer 2(d)

Telegraphic Transfer (TT)

A TT is a transfer of money by telegram or cable or telex or fax from one center to another in a foreign currency. It is a method used by banks with their own codes and correspondent relations with banks and abroad for transmission of funds. It involves payment of funds on the same day, it is the quickest means of transmission of funds. As there is no loss of interest or capital risk in this mode, it enjoys the best rate for the value of receipts.

Mail Transfer (MT)

It is an order to pay cash to a third party sent by mail by a bank to its correspondent or branch abroad. It is issued in duplicate, one to the party buying it and the other to the correspondent bank. The amount is paid by the correspondent bank to the third party mentioned therein in the transferee country by its own cheque or by crediting the party's account. As the payment is made after the mail advice is received at the other end, which will take a few days, the rate charged to the purchaser is cheaper to the extent of the interest gain to the seller bank.

Answer 2A(i)

UNIDO Approach of Social Cost benefit Analysis

The UNIDO guidelines provide a comprehensive framework for appraisal of projects and examine their desirability and merit by using different yardsticks in a step-wise manner. The desirability is examined from various angles, such as the impact on:

- (a) Financial profitability of utilization of domestic resources,
- (b) Savings and consumption pattern,
- (c) Income distribution, and
- (d) Production of merit and demerit goods

These different aspects are examined in five stages, each stage leading towards a social benefit-cost of the project.

Answer 2A(ii)

Cost of capital is affected by both controllable and uncontrollable factors. The same are discussed below:

Controllable Factors Affecting Cost of Capital

These are the factors that affect the cost of capital and the company has control over them. These factors are as follows:

(1) *Capital Structure Policy*

A firm has control over its capital structure, and it targets an optimal capital structure. As more debt is issued, the cost of debt increases, and as more equity is issued, the cost of equity increases.

(2) *Dividend Policy*

Given that the firm has control over its payout ratio, the breakpoint of the marginal cost of capital schedule can be changed. The internally generated equity has a lower cost as compared to newly issued equity. As the payout ratio of the company increases, the breakpoint between lower-cost internally generated equity and newly issued equity is lowered.

(3) *Investment Policy*

It is assumed that, when making investment decisions, the company is making investments with similar degrees of risk. If a company changes its investment policy relative to its risk, both the cost of debt and cost of equity changes.

Uncontrollable Factors Affecting the Cost of Capital

These are the factors affecting the cost of capital on which the company has no control :

(1) *Level of Interest Rates*

The level of interest rates in the economy affects the cost of debt and, potentially, the cost of equity. For example, when interest rates increase the cost of debt increases, which in turn increases the cost of capital.

(2) *Tax Rates*

Tax rates affect thereby after-tax cost of debt. As tax rates increase, the cost of debt decreases, thereby decreasing the cost of capital.

Answer 2A(iii)

The following four categories of the merchant banking organizations exist in India :

1. Institutional based merchant banking organizations that operate as subsidiaries of private financial institutions or those recognized by the state or central governments.

2. Banker based organizations are those that operate as divisions or subsidiaries of the nationalized commercial banks or the foreign banks functioning in the country.
3. The third category consists of qualified brokers who provide skilled merchant banking services like portfolio management.
4. The private merchant banking organizations work as sole proprietorships, private limited, public limited or partnership companies.

Alternate Answer 2A(iii)

According to the Securities and Exchange Board of India, merchant bankers are classified under four categories for the purpose of registration.

- (a) Category I, that is— (i) to carry on any activity of the issue management, which will, inter alia, consist of preparation of prospectus and other information relating to the issue, determining financial structure, tie up of financiers and final allotment and refund of the subscriptions; and (ii) to act as adviser, consultant, manager, underwriter, portfolio manager;
- (b) Category II, that is to act as adviser, consultant, co-manager, underwriter, portfolio manager;
- (c) Category III, that is to act as underwriter, adviser, consultant to an issue;
- (d) Category IV, that is to act only as adviser or consultant to an issue.

Answer 2A(iv)

In international financial market, the availability of foreign currency is assured under four main systems:

1. **Euro currency market** : Here funds are made available in the form of loans through syndicated Euro credits/instruments known as Floating Rate Notes (FRNS). Interest rates vary every 3 to 6 months based on London Interbank Offered Rate (LIBOR). Syndicated Euro Currency bank loan has developed into one of the most important instruments for international lending. Syndicated Euro credit is available through instruments viz. Term loan and Revolving Line facility.
2. **Export Credit Facilities** : These are made available by several countries through an institutional frame work in which EXIM Banks play a prominent role. EXIM Bank of India is playing a significant role in financing exports and other off shore deals.
3. **International Bond Market** : They provide international facilities to raise long term funds by using different types of instruments. The bond market is generally known as Euro bond market.
4. **UN Agency financial institutions** viz. World Bank and its allied agencies like International Development Association (IDA), International Finance Corporation (IFC), International Bank for Reconstruction and Development (IBRD), etc., Asian Development Bank (ADB) provide finance in foreign currency.

Attempt all parts of either Q. No. 3 or Q. No. 3A**Question 3**

(a) The Balance Sheet of MP Ltd. as on 31st March, 2018 is given as under :

Liabilities	Amount (₹)	Assets	Amount (₹)
Equity Share Capital (₹ 10 each)	1,60,000	Fixed Assets	3,00,000
Reserves	80,000	Current Assets	1,00,000
10% Debt	1,20,000		
Current Liabilities	40,000		
Total	4,00,000	Total	4,00,000

Tax rate is 50%

You are required to :

(i) Likely level of EBIT if the EPS is (a) ₹ 1, (b) EPS is ₹ 3.

(ii) Financial break-even level. (4 marks)

(b) The following data pertains to Yagya Ltd. :

Existing Capital Structure :

20 lakh equity shares of ₹ 10 each

Tax Rate 50%

Yagya Ltd. plans to raise additional capital of ₹ 200 lakh for financing an expansion project. It is evaluating two alternative financing plans :

(i) Issue of 20,00,000 equity shares of ₹ 10 each and

(ii) Issue of ₹ 200 lakh debentures carrying 14% interest.

You are required to compute indifference point. (4 marks)

(c) The following is capital structure of a firm :

Source of Finance	Amount (₹)	After Tax Cost (%)
Equity (paid-up) share capital	20,00,000	20
Retained earnings (Reserves)	40,00,000	20
Preference share capital	15,00,000	10
Debt	25,00,000	8
Total	1,00,00,000	

Compute the weighted average cost of capital of the firm, based on the existing capital structure. (4 marks)

(d) ABC Ltd. had the following Balance Sheet as on 31st March, 2018 :

Liabilities	₹ in crore	Assets	₹ in crore
Equity share capital (100 lakh shares @ ₹ 10 each)	10	Fixed Assets (Net)	25
Reserves & Surplus	2	Current Assets	15
15% Debentures	20		
Current Liabilities	8		
Total	40	Total	40

The additional information are as under :

Fixed cost per annum (excluding interest)	₹ 8 crore
Variable Operating Cost Ratio	65%
Total Assets Turnover Ratio	2.5
Income Tax Rate	30%

You are required to calculate the following :

- Earnings per Share
- Operating Leverage
- Financial Leverage
- Combined Leverage. (4 marks)

OR (Alternate question to Q. No. 3)

Question 3A

- (i) Kopl Ltd. manufactures a product X. To produce one unit of finished product, 4 kg of raw material is required. The sales department has estimated an annual demand of 5,00,000 units. Stock position at the beginning of the year is as below :

Product X	20,000 units
Raw material	40,000 kgs

To place an order the company has to spent ₹ 1,500. The company is financing its working capital using a bank cash credit @ 12%.

Product X is sold at ₹ 1,040 per unit, material is purchased at ₹ 150 per kgs. Compute :

- Economic Order Quantity
- Number of orders placed in a year. (4 marks)

(ii) As an investment manager you are given the following information :

Investment in equity share of	Initial price (₹)	Dividends (₹)	Market price at the end of the year (₹)	Beta
Coil Ltd.	50	4	100	0.8
Sail Ltd.	70	4	120	0.7
Lip Ltd.	90	4	270	0.5
Govt. Bonds	2,000	280	2,010	0.99

Risk Free return may be taken at 14%.

You are required to calculate expected rate of return of each security in the portfolio using Capital Asset Pricing Model (CAPM). (4 marks)

(iii) Naman Ltd. currently makes all sales on credit and offers no cash discount. It is considering a 2% cash discount for payment within 10 days. The firm's current average collection period is 60 days, sales are 2,00,000 units, selling price is ₹30 per unit, variable cost per unit is ₹20 and average cost per unit is ₹25 at current sales volume.

It is expected that the change in credit terms will result in increase in sales to 2,25,000 units and the average collection period will fall to 45 days. However, due to increased sales, increased working capital required will be ₹1,00,000 (it does not take into account the effect on debtors). Assuming that 50% of the total sales will be on cash discount and 20% is the required return on investment, should the proposed discount be offered? Assume 360 days in a year. Give your assessment. (4 marks)

(iv) Raj has recently created his portfolio and he has provided the information given below :

Security	Amount Invested (₹)	Expected Return (%)	Beta
Stock A	10,000	8	0.80
Stock B	20,000	12	0.95
Stock C	30,000	15	1.10
Stock D	40,000	18	1.40

Calculate his expected return from this portfolio. What is the beta of this portfolio? Comment on this portfolio also. (4 marks)

Answer 3(a)

(i) Level of EBIT when EPS is Re. 1

Let X be the level of EBIT, then

$$\text{EPS} = [(X - \text{Interest})(1 - \text{tax rate})] / \text{No. of equity shares}$$

$$1 = [(X - 12,000) (1 - 0.50)] / 16,000$$

$$1 = (0.5X - 6000) / 16000$$

$$X = 44,000$$

$$\text{EBIT} = \text{Rs. } 44,000$$

(b) Level of EBIT when EPS is Rs. 3

Let X be the level of EBIT, then

$$\text{EPS} = [(X - \text{Interest})(1 - \text{tax rate})] / \text{No. of equity shares}$$

$$3 = [(X - 12,000) (1 - 0.50)] / 16,000$$

$$3 = (0.5X - 6000) / 16,000$$

$$X = 1,08,000$$

$$\text{EBIT} = \text{Rs. } 1,08,000$$

(ii) Financial Break-even level

Financial Break even level is the level of earnings before interest and taxes that will result in zero net income or zero earnings per share.

Let X be the level of EBIT, then

$$\text{EPS} = [(X - \text{Interest})(1 - \text{tax rate})] / \text{No. of equity shares}$$

$$0 = [(X - 12,000) (1 - 0.50)] / 16,000$$

$$X = 12,000$$

Financial break even will be at EBIT of Rs. 12,000

Answer 3(b)

Let X be the level of EBIT at which EPS under both the plans is equal

Interest in plan (i) = 0

Interest in plan (ii) = Rs. 28,00,000

No. of shares in plan (i) = 40,00,000

No. of shares in plan (ii) = 20,00,000

Indifference point at which EPS under plan (i) and plan (ii) are equal

$$\frac{(X - \text{Interest})(1 - \text{tax rate})}{\text{no. of shares}} = \frac{(X - \text{Interest})(1 - \text{tax rate})}{\text{no. of shares}}$$

$$\frac{(X - 0)(1 - 0.50)}{40,00,000} = \frac{(X - 28,00,000)(1 - 0.50)}{20,00,000}$$

$$X = 2X - 56,00,000$$

$$X = 56,00,000$$

The indifference level or the level of EBIT at which EPS under both the plan is equal is Rs. 56,00,000.

Answer 3(c)

Weighted average cost of capital based on existing capital structure

Source	Amount (Rs.)	Proportion	After tax cost	Weighted cost
Equity capital	20,00,000	0.20	0.20	0.04
Retained earnings	40,00,000	0.40	0.20	0.08
Preference share	15,00,000	0.15	0.10	0.015
Debt	25,00,000	0.25	0.08	0.02
Total	1,00,00,000	1.00		0.155

Weighted average cost of capital = 0.155 or 15.5%

Answer 3(d)

Asset turnover ratio = Sales/ Total Assets

$$2.5 = \text{sales} / \text{Rs. 40 crore}$$

Sales = Rs. 100 crore

Profitability statement

Particulars	Rs. in crore
Sales	100
Less : variable cost @ 65%	(65)
Contribution	35
Less: fixed cost	(8)
EBIT	27
Less: interest (15% debenture)	(3)
EBT	24
Less: tax @ 30%	(7.2)
EAT	16.8

(a) Earnings per share

$$\begin{aligned} \text{EPS} &= \text{EAT/ No. of shares} \\ &= \text{Rs. 16.8 crore/ 1,00,00,000} \\ &= \text{Rs. 16.8 per share} \end{aligned}$$

(b) Operating leverage

$$\begin{aligned} \text{Operating leverage} &= \text{Contribution / EBIT} \\ &= \text{Rs. 35 crore / Rs. 27 crore} \\ &= 1.30 \end{aligned}$$

(c) Financial Leverage

$$\begin{aligned} \text{Financial leverage} &= \text{EBIT/ EBT} \\ &= \text{Rs. 27 crore/ Rs. 24 crore} \\ &= 1.125 \end{aligned}$$

(d) Combined leverage

$$\begin{aligned} \text{Combined leverage} &= \text{Contribution/ EBT} \\ &= \text{Rs. 35 crore/ Rs. 24 crore} \\ &= 1.46 \end{aligned}$$

$$\begin{aligned} \text{or Combined Leverage} &= \text{Degree of Operating Leverage} \times \text{Degree of Financial Leverage} \\ &= 1.30 \times 1.125 \\ &= 1.46 \end{aligned}$$

Answer 3A(i)

$$\begin{aligned} \text{(a) Annual production of product X} &= \text{Annual demand} - \text{opening stock} \\ &= 5,00,000 - 20,000 \\ &= 4,80,000 \text{ units} \end{aligned}$$

$$\begin{aligned} \text{Annual requirement of raw materials} &= (\text{annual production} \times \text{material required per unit}) - \text{opening stock of material} \\ &= (4,80,000 \times 4) - 40,000 \\ &= 18,80,000 \text{ kg} \end{aligned}$$

$$\text{EOQ} = \sqrt{\frac{2AO}{C}}$$

$$A = \text{Annual usage} = 18,80,000 \text{ kg}$$

$$O = \text{Ordering cost per order} = \text{Rs. 1500}$$

$$C = \text{Carrying cost} = \text{Rs. 150} \times 0.12 = \text{Rs. 18}$$

$$\text{EOQ} = \sqrt{\frac{2 \times 18,80,000 \times 1500}{18}} = 17,701 \text{ kg}$$

$$\begin{aligned} \text{(b) No. of orders placed in a year} &= \text{Annual requirement / EOQ} \\ &= 18,80,000 / 17,701 = 106 \text{ orders per year} \end{aligned}$$

Answer 3A(ii)**Calculation of expected return on market portfolio***(Amount in Rs.)*

<i>Equity share of:</i>	<i>Initial Price (P₀)</i>	<i>Dividends</i>	<i>Market price at the end of the year (P₁)</i>	<i>Capital gains (P₁ - P₀)</i>
Coil Ltd.	50	4	100	50
Sail Ltd.	70	4	120	50
Lip Ltd.	90	4	270	180
Govt. bond	2000	280	2010	10
Total	2210	292	2500	290

$$\text{Market return} = \frac{\text{Dividends} + \text{capital gains}}{\text{Share price at the beginning}} * 100$$

$$R_m = \frac{292 + 290}{2210} * 100 = 26.33\%$$

Calculation of rate of return of each security

$$R = R_f + \beta (R_m - R_f)$$

<i>Equity share of:</i>	<i>Return</i>
Coil Ltd.	$0.14 + 0.8(0.2633 - 0.14) = 0.2386$ or 23.86%
Sail Ltd.	$0.14 + 0.7(0.2633 - 0.14) = 0.2263$ or 22.63%
Lip Ltd.	$0.14 + 0.5(0.2633 - 0.14) = 0.2017$ or 20.17%
Govt. bond	$0.14 + 0.99(0.2633 - 0.14) = 0.2621$ or 26.21%

Answer 3A(iii)**Effect of extending cash discount to customer**

<i>Particulars</i>	<i>Amount (Rs.)</i>
Increased sales revenue (25,000 * Rs. 30)	7,50,000
Less : variable cost (25,000 * Rs. 20)	<u>(5,00,000)</u>
Incremental contribution	2,50,000
<i>Add</i> : savings in cost due to decrease in investment in debtors (W.N 1)	29,167
<i>Less</i> : cost of additional working capital requirement (Rs. 1,00,000 * 0.20)	(20,000)
<i>Less</i> : cost involved in cash discount (0.02 * 2,25,000 * Rs.30 * 0.5)	(67,500)
Profit	<u>1,91,667</u>

Decision : it is advised that the firm should offer cash discount to its customer

Working notes (W.N 1)

Saving due to decrease in average collection period:

$$\begin{aligned} \text{Present investment in debtors (without cash discount)} &= \frac{(2,00,000 \times 25 \times 60)}{360} \\ &= \text{Rs. } 8,33,333 \end{aligned}$$

Decrease in investment in debtors (with cash discount)

$$= \frac{(2,00,000 \times 25 + 25,000 \times 20) \times 45}{360} = \text{Rs. } 6,87,500$$

Decrease in investment in debtors = Rs. 8,33,333 – Rs. 6,87,500 = Rs. 1,45,833

Savings in cost = Rs. 1,45,833 * 0.20 = Rs. 29,167

Answer 3A(iv)**Calculation of expected returns E(R) from the portfolio**

<i>Security</i>	<i>Expected return (%)</i>	<i>Amount invested (Rs.)</i>	<i>Weights (W)</i>	<i>Expected return * W</i>
Stock A	8	10,000	0.10	0.8
Stock B	12	20,000	0.20	2.4
Stock C	15	30,000	0.30	4.5
Stock D	18	40,000	0.40	7.2
		1,00,000		E(R) = 14.9%

Calculation of Portfolio Beta

<i>Security</i>	<i>Beta (β)</i>	<i>Weights (W)</i>	<i>β * W</i>
Stock A	0.80	0.10	0.08
Stock B	0.95	0.20	0.19
Stock C	1.10	0.30	0.33
Stock D	1.40	0.40	0.56
Total			1.16

Portfolio Beta = 1.16

Comment : The portfolio has expected return of 14.9% and beta of 1.16. As the beta is greater than 1, this portfolio has greater systematic risk than an average asset

Question 4

(a) A Thai company is expecting to receive US \$ 3 million from its customer in the US after three months. The current spot exchange rate is Baht 33.75/\$ and 90 days forward rate is Baht 35.35/\$. What will be the consequences if the Thai firm :

- (a) Does not cover its exposure.
- (b) Covers 60% and keeps 40% uncovered.
- (c) Cover 100% exposure by entering into a forward contract.

The spot rate at the time Thai company receives payment is Baht 34.10/\$, what is the cost of the forward contract (partial or full) ? (4 marks)

(b) Paper Corporation Ltd., have imported 10,000 Nos. cartridges at landed cost in Mumbai, of US \$ 30 each. They have the choice for paying for the goods immediately or in 3 months' time. They have a clean overdraft limit where 18% p.a. rate of interest is charged. Calculate which of the following methods would be cheaper to Paper Corporation Ltd. :

- (a) Pay in 3 months' time with interest @ 15% p.a. and cover risk forward for 3 months.
- (b) Settle now at a current spot rate and pay interest of the overdraft for 3 months.

The rates are as follows :

INR/\$ Spot 71.25-71.55

3 month swap : 25/35. (4 marks)

(c) Determine the intrinsic value for the buyer of an option contract, action to be taken and type of option in the following situations :

- (i) A put option, when the current value of the underlying asset is ` 1,400 and the strike price is ` 1,482.
- (ii) A put option when the current value of the underlying asset is ` 950 and the strike price is ` 950.
- (iii) A call option when the current value of asset is ` 1,200 and the strike price is ` 980.
- (iv) A call option when the current value of underlying asset is ` 1,650 and the strike price is ` 1,700. (4 marks)

(d) Abhay bought 1000 shares of Panther Ltd. Panther has a beta 1.1 with the Sensex. Each Sensex contract is equal to 50 units. Panther now quotes at ` 100 and the Sensex futures is available at 4500 Index points. Required :

- (i) How many futures contracts Abhay will take ?
- (ii) If the price in the spot market drops by 12%, how he will be protected ? (4 marks)

Answer 4(a)

(a) If the Thai company does not cover its exposure

$$\text{Cost} = \$ 3 \text{ million} * \text{Baht } 34.10 = \text{Baht } 102.3 \text{ million}$$

(b) If the Thai company covers 60% :

$$\$ 3 \text{ million} * 60\% = \$ 1.8 \text{ million @ Baht } 35.35 = \text{Baht } 63.63 \text{ million}$$

$$\text{Balance } \$ 1.2 \text{ million @ Baht } 34.10 = \text{Baht } 40.92 \text{ million}$$

$$\text{Total cost} = \text{Baht } 104.55 \text{ million}$$

(c) If the Thai company covers 100% exposure

$$\text{Cost} = \$ 3 \text{ million} * \text{Baht } 35.35 = \text{Baht } 106.05$$

Answer 4(b)

$$\text{Total exposure} = 10,000 * \$30 = \$ 3,00,000$$

Option I: pay in 3 months time

$$\text{INR}/\$ \text{ Spot} = 71.25/71.55$$

$$3 \text{ month swap} = 25/35$$

$$3 \text{ month forward} = 71.25 + 0.25/71.55 + 0.35$$

$$3 \text{ month forward} = 71.50/71.90$$

$$3 \text{ month interest @ } 15\% = \$ 3,00,000 * 15\% * 3/12 = \$ 11,250$$

$$\text{Total exposure to be covered forward} = \$ 3,00,000 + \$ 11,250 = \$ 3,11,250$$

$$\text{Cost of exposure} = \text{Rs. } 71.90 * \$ 3,11,250 = \text{Rs. } 2,23,78,875$$

Option II: Settle now

$$\text{i.e. pay } \$ 3,00,000 \text{ now at spot rate of Rs. } 71.55/\$ = \text{Rs. } 2,14,65,000$$

$$\text{Overdraft interest @ } 18\% \text{ on Rs. } 2,14,65,000 \text{ for 3 months} = \text{Rs. } 9,65,925$$

$$\text{Total cost} = \text{Rs. } 2,24,30,925$$

Conclusion: Option I is cheaper

Answer 4(c)

S. No.	Nature	Exercise price (in Rs.)	Market price (in Rs.)	Result	Action	Intrinsic value (in Rs.)
(i)	Put	1482	1400	In the money	Exercise	82
(ii)	Put	950	950	At the money	Lapse	0
(iii)	Call	980	1200	In the money	Exercise	220
(iv)	Call	1700	1650	Out of money	Lapse	0

Answer 4(d)

- (i) Since Abhay is long on the spot market, therefore he has to go short in the futures market. Hence, Abhay has to sell Future of sensex to hedge shares of Panther Ltd.

$$\begin{aligned} \text{Futures to be sold} &= \frac{\text{Hedge ratio} \times \text{units of spot position requiring hedging}}{\text{No. of units underlying contract}} \\ &= \frac{1.1 \times 1000}{50} \\ &= 22 \text{ contracts} \end{aligned}$$

- (ii) Price drops by 12%

$$\text{Price} = \text{Rs. } 100 - \text{Rs. } 12 = \text{Rs. } 88$$

$$\text{Fall in index} = 12/1.1 = 10.91$$

Position in spot market: value of the investment comes down

$$\text{Loss} = \text{Rs. } 12 * 1000 = \text{Rs. } 12,000$$

Position in futures: Abhay has sold 22 contracts and gained 10.91 points per contract

$$\text{Gain} = 10.91 * 22 * 50 = \text{Rs. } 12,000$$

Gain of Rs. 12,000 is the same as the amount of loss.

Question 5

- (a) *Boat Ltd. has a proposal for manufacturing Mechanised Boats. The project would involve cost of plant at ₹750 lakh, installation cost of ₹150 lakh and working capital of ₹175 lakh. The annual capacity of the plant is to manufacture 30,000 Boats. Price per Boat is ₹30,000, with a variable cost ratio of 70%. Cash-fixed cost in the first year, including promotion expenditure of ₹180 lakh, is ₹630 lakh and is thereafter ₹450 lakh each year. The company expects that the plant's capacity utilization over its estimated useful life of five years is as under :*

Year	1	2	3	4	5
Capacity utilization %	25	40	50	75	100

Terminal value of the project is ₹95 lakh. If the hurdle rate is 12%, and tax rate is 30%, can the project be accepted ? While evaluating, you have to keep in mind that the company has other sources of income against which the losses, if any, from this project can be set off. Project implementation cost to be considered on year 0, and cash flow to start from year 1. Consider PVF rate upto three decimal points.

(8 marks)

(b) An initial outlay of ₹ 24 lakh is contemplated in a project, for which the following cash flow estimates have been prepared :

Year	Net CFAT (₹)	Probability
Year 1	8,00,000	0.30
	7,00,000	0.40
	5,00,000	0.30
Year 2	7,00,000	0.25
	9,00,000	0.35
	10,00,000	0.40
Year 3 to 5	5,20,000	0.45
	6,40,000	0.25
	8,20,000	0.30

Advise whether the project is worthwhile, if the Discount Rate is 17% ? What should be the maximum project cost, if it were to be taken up ? (8 marks)

Answer 5(a)

Initial outflow

Capital expenditure	Rs. in lakh	Rs. in lakh
Cost of plant	750	
Installation cost	<u>150</u>	
	900	
Working capital	<u>175</u>	1075

$$\text{Annual depreciation} = \frac{\text{Rs. 900 lakh} - \text{Rs. 95 lakh}}{5 \text{ years}} = \text{Rs. 161 lakh}$$

Calculation of Cash flow after tax (CFAT)

Particulars	Year 1	Year 2	Year 3	Year 4	Year 5
Capacity utilization %	25	40	50	75	100
Volume units	<u>7,500</u>	<u>12,000</u>	<u>15,000</u>	<u>22,500</u>	<u>30,000</u>
Sales (Rs. in lakh)	<u>2,250</u>	<u>3,600</u>	<u>4,500</u>	<u>6,750</u>	<u>9,000</u>
Contribution @ 30% (Rs. in lakh)	675	1080	1350	2025	2700
Fixed cost (Rs. in lakh)	(630)	(450)	(450)	(450)	(450)
Depreciation (Rs. in lakh)	(161)	(161)	(161)	(161)	(161)

PP–FTFM–December 2018		44			
PBT (Rs. in lakh)	(116)	469	739	1414	2089
Tax @ 30% (Rs. in lakh)	Nil	(106)*	(222)	(424)	(627)
Profit after Tax (PAT) (Rs. in lakh)	(116)	363	517	990	1462
CFAT (PAT + Dep) (Rs. in lakh)	45	524	678	1151	1623

* Calculation of PAT for 2nd year

	Rs. in lakh
PBT of 2nd year	469
Less : loss c/f	116
Taxable profit	353
Tax @ 30% = Rs. 106 lakh	
PAT of 2nd year= Rs. 469 lakh – Rs. 106 lakh = Rs. 363 lakh	

Calculation of Net present value (NPV)

Year	CFAT in Rs. Lakh	PVF @12%	PV in Rs. Lakh
0	(1075)	1	(1075)
1	45	0.893	40.185
2	524	0.797	417.628
3	678	0.712	482.736
4	1151	0.636	732.036
5	1623	0.567	920.241
5	(175 +95)	0.567	153.09
		NPV	1670.916

Decision : Since, NPV of the project is positive it should be accepted.

Answer 5(b)

(i) Computation of Expected cash flow

	Net Cash flow after tax (CFAT)	Probability	Amount	Total
Year 1	8,00,000	0.30	2,40,000	
	7,00,000	0.40	2,80,000	
	5,00,000	0.30	1,50,000	6,70,000

	<i>Net Cash flow after tax (CFAT)</i>	<i>Probability</i>	<i>Amount</i>	<i>Total</i>
Year 2	7,00,000	0.25	1,75,000	
	9,00,000	0.35	3,15,000	
	10,00,000	0.40	<u>4,00,000</u>	8,90,000
Year 3 to 5	5,20,000	0.45	<u>2,34,000</u>	
	6,40,000	0.25	1,60,000	
	8,20,000	0.30	<u>2,46,000</u>	6,40,000

Calculation of Net Present value (NPV) using Risk Adjusted discount rate (RADR) of 17%

<i>Year</i>	<i>Cash flow (Rs.)</i>	<i>PVF @ 17%</i>	<i>PV of cash flow</i>
0	(24,00,000)	1	(24,00,000)
1	6,70,000	0.8547	5,72,649
2	8,90,000	0.7305	6,50,145
3	6,40,000	0.6244	3,99,616
4	6,40,000	0.5337	3,41,568
5	6,40,000	0.4561	2,91,904
		NPV	(1,44,118)

Decision : Since the NPV of the project at 17% is negative. Hence the project should be rejected.

- (ii) Maximum project cost for acceptance should be curtailed and revised downward to Rs. 22,55,882 (Rs. 24,00,000 – Rs. 1,44,118)

Question 6

From the following information provided, you are required to calculate the working capital requirement for the company. Present your calculation in a Tabular Form.

(a) Cost per unit	(`)
Raw Material	208
Direct Labour	78
Overheads	156
Total Cost	<u>442</u>
Profit	78
Selling Price per unit	<u>520</u>

- (b) (i) Raw material will be in stock on an average for one month holding.
(ii) Work in Process will comprise of 100% of material, 50% of wages and overheads for average of half a month.
(iii) Finished goods will be in stock on average of one month.
(iv) Credit allowed by suppliers of Raw Material is one month.
(v) Time lag in payment of wages is 1½ weeks.
(vi) Time lag in payment of overheads is 1 month.
(vii) Time lag in payment from Debtors is 2 months.
(viii) Cash Balance is to be maintained at a minimum of ` 4,80,000.
- (c) Level of Activity : Production of 70,000 units per annum. It is to be assumed that production is carried on evenly throughout the year and wages and overheads accrue similarly.
- (d) Calculation to be based on 30 days a month and 52 weeks in a year.
- (e) Finished goods will be valued at Total Cost. (16 marks)

Answer 6**Statement showing Working capital requirement**

<i>CURRENT ASSETS</i>	<i>Amount (Rs.)</i>	<i>Amount (Rs.)</i>
Raw material (70,000 units * 208 * 30/360)		12,13,333
Work in progress		
Raw material (70,000 units * 208 * 15/360)	6,06,667	
Direct labour (70,000 units * 78 * 15/360)*50%	1,13,750	
Overheads (70,000 units * 156 * 15/360)*50%	<u>2,27,500</u>	9,47,917
Finished goods (70,000 units * 442 * 30/360)		25,78,333
Debtors (70,000 units * 520 * 60/360)		60,66,667
Cash balance		4,80,000
Total Current Assets (A)		<u>1,12,86,250</u>
CURRENT LIABILITY		
Creditors (70,000 units * 208 * 30/360)		12,13,333
Wages (70,000 units * 78 * 1.5/52)		1,57,500
Overheads (70,000 units * 156 * 30/360)		<u>9,10,000</u>
Total Current liabilities (B)		<u>22,80,833</u>
WORKING CAPITAL (A-B)		<u>90,05,417</u>

Note : In the above solution Debtors are calculated on selling price. Debtor can also be calculated on cost price.

TABLE - 1 : PRESENT VALUE OF RUPEE ONE

RATE	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10	YEAR 11	YEAR 12	YEAR 13	YEAR 14	YEAR 15
5%	0.9524	0.9070	0.8638	0.8227	0.7835	0.7462	0.7107	0.6768	0.6446	0.6139	0.5847	0.5568	0.5303	0.5051	0.4810
6%	0.9434	0.8900	0.8396	0.7921	0.7473	0.7050	0.6651	0.6274	0.5919	0.5584	0.5268	0.4970	0.4688	0.4423	0.4173
7%	0.9346	0.8734	0.8163	0.7629	0.7130	0.6663	0.6227	0.5820	0.5439	0.5083	0.4751	0.4440	0.4150	0.3878	0.3624
8%	0.9259	0.8573	0.7938	0.7350	0.6806	0.6302	0.5835	0.5403	0.5002	0.4632	0.4289	0.3971	0.3677	0.3405	0.3152
9%	0.9174	0.8417	0.7722	0.7084	0.6499	0.5963	0.5470	0.5019	0.4604	0.4224	0.3875	0.3555	0.3262	0.2992	0.2745
10%	0.9091	0.8264	0.7513	0.6830	0.6209	0.5645	0.5132	0.4665	0.4241	0.3855	0.3505	0.3186	0.2897	0.2633	0.2394
11%	0.9009	0.8116	0.7312	0.6587	0.5935	0.5346	0.4817	0.4339	0.3909	0.3522	0.3173	0.2858	0.2575	0.2320	0.2090
12%	0.8929	0.7972	0.7118	0.6355	0.5674	0.5066	0.4523	0.4039	0.3606	0.3220	0.2875	0.2567	0.2292	0.2046	0.1827
13%	0.8850	0.7831	0.6931	0.6133	0.5428	0.4803	0.4251	0.3762	0.3329	0.2946	0.2607	0.2307	0.2042	0.1807	0.1599
14%	0.8772	0.7695	0.6750	0.5921	0.5194	0.4556	0.3996	0.3506	0.3075	0.2697	0.2366	0.2076	0.1821	0.1597	0.1401
15%	0.8696	0.7561	0.6575	0.5718	0.4972	0.4323	0.3759	0.3269	0.2843	0.2472	0.2149	0.1869	0.1625	0.1413	0.1229
16%	0.8621	0.7432	0.6407	0.5523	0.4761	0.4104	0.3538	0.3050	0.2630	0.2267	0.1954	0.1685	0.1452	0.1252	0.1079
17%	0.8547	0.7305	0.6244	0.5337	0.4561	0.3898	0.3332	0.2848	0.2434	0.2080	0.1778	0.1520	0.1299	0.1110	0.0949
18%	0.8475	0.7182	0.6086	0.5158	0.4371	0.3704	0.3139	0.2660	0.2255	0.1911	0.1619	0.1372	0.1163	0.0985	0.0835
19%	0.8403	0.7062	0.5934	0.4987	0.4190	0.3521	0.2959	0.2487	0.2090	0.1756	0.1476	0.1240	0.1042	0.0876	0.0736
20%	0.8333	0.6944	0.5787	0.4823	0.4019	0.3349	0.2791	0.2326	0.1938	0.1615	0.1346	0.1122	0.0935	0.0779	0.0649
21%	0.8264	0.6830	0.5645	0.4665	0.3855	0.3186	0.2633	0.2176	0.1799	0.1486	0.1228	0.1015	0.0839	0.0693	0.0573
22%	0.8197	0.6719	0.5507	0.4514	0.3700	0.3033	0.2486	0.2038	0.1670	0.1369	0.1122	0.0920	0.0754	0.0618	0.0507
23%	0.8130	0.6610	0.5374	0.4369	0.3552	0.2888	0.2348	0.1909	0.1552	0.1262	0.1026	0.0834	0.0678	0.0551	0.0448
24%	0.8065	0.6504	0.5245	0.4230	0.3411	0.2751	0.2218	0.1789	0.1443	0.1164	0.0938	0.0757	0.0610	0.0492	0.0397
25%	0.8000	0.6400	0.5120	0.4096	0.3277	0.2621	0.2097	0.1678	0.1342	0.1074	0.0859	0.0687	0.0550	0.0440	0.0352

ETHICS, GOVERNANCE AND SUSTAINABILITY

Time allowed : 3 hours

Maximum marks : 100

NOTE: Answer **ALL** Questions.

PART A

Question 1

- (a) *In a branch of ABC Bank, Branch Manager throughout the year has been under acute pressure to achieve the business targets. At the year-end, he finds that despite his best efforts, he has not been able to achieve the targets given by his team leader. Simultaneously, he found that there are various cash credit limits sanctioned which are not being utilized. On 31st March, he makes debit entries as withdrawals in such unutilized cash credit limits and transfers to current accounts of the borrowers and again reverses these entries on 1st April. In addition, to avoid the mounting pressure of reduction in NPAs, he makes credit transfer entries in cash credit limits not transacted since last six months and reverses these entries on next day after year-end, i.e. 1st April.*

In this way, he has been able to manage the achievement of his deposits and advances targets. Also, he has temporarily engaged a boy as attendant. As to employ a casual staff, he was required compliance of laid down policy of the bank, he shown payments made to him as water and cleaning charges under different names. He argues that as no loss has been caused to any one, hence he is right.

In the light of above answer the following questions :

- (i) *Evaluate his actions in the light of ethical practices and mention which types of ethical issues are there at his branch. (5 marks)*
- (ii) *What do understand by 'Ethics in Compliance' ? Describe by citing an example and a case study involving issues of ethics in compliance. (5 marks)*
- (b) *Write short notes on the following :*
- (i) *Key Managerial Personnel (KMP)*
 - (ii) *ICSI Motto, Vision Statement and Mission Statement*
 - (iii) *With Profits Committee*
 - (iv) *Theory of Relativism*
 - (v) *Training of Independent Directors. (2 marks each)*
- (c) *"The Board of Directors is ultimately responsible for its firm's success or failure,*

as well as for the ethical climate and practices of its company.” In the light of this statement, mention the areas of oversight by Board as suggested by Conference Board Commission on Public Trusts and Private Enterprises.

(5 marks)

Answer 1(a)(i)

In the given case, the Branch Manager, in order to achieve the targets assigned to him adopted the following unethical practices:

- (i) Making debit entries in unutilised cash credit limits and transfer to current account of the borrowers.
- (ii) Making credit transfer entries in cash credit limits not transacted since last 6 months and reversing the said entries on 1st April i.e. after the year end.
- (iii) Temporarily engaging an attendant and showing payments made to him as water and cleaning charges.

In light of the above the ethical issues may be summarised as under:

- (i) Window dressing of the financials by inflating deposits and to suppress non-performing assets (NPAs), he makes ever-greening of NPAs in violation of RBI directives by manipulating books of accounts. This amounts to cooking of the balance sheet of the branch without real business. Hence these are issues of Ethics in Accounts and Finance.
- (ii) To avoid compliance of laid down procedure to employ a casual worker, he shows the payments as water and cleaning charges in miscellaneous expenses. Hence this is an issue of Ethics in compliance.

Answer 1(a)(ii)

Compliance is about obeying and adhering to rules and authority with letter and spirit. The motivation for being compliant could be to do the right thing out of the fear of being caught rather than a desire to abide by the law. An ethical climate in an organisation ensures that compliance with law is fuelled by a desire to abide by the laws. Organisations that value high ethical values comply with the laws not only in letter but go beyond what is stipulated or expected of them.

Ethical compliance helps companies to develop a work culture that abides by the workplace laws and reduces the costs associated with fines and lawsuits. One of the disadvantages of an ethical compliance program is that it requires the comprehensive support of management in order to ensure its effectiveness. If members of the management team decide to apply their own version of corporate ethics to the way they manage their departments, then this clash of principles can cause confusion in the workplace. For example, a manager who tends to compromise when his fellow employees are involved in taking bribe, it may set a precedence of undermining the entire corporate culture.

Answer 1(b)(i)

Key Managerial Personnel

According to section 2 (51) of the Companies Act, 2013, key managerial personnel in relation to a company means—

- (i) the Chief Executive Officer or the managing director or the manager;

- (ii) the company secretary;
- (iii) the whole-time director;
- (iv) the Chief Financial Officer;
- (v) such other officer, not more than one level below the directors who is in whole-time employment, designated as key managerial personnel by the Board; and
- (vi) such other officer as may be prescribed

Answer 1(b)(ii)

Motto of ICSI

सत्यं वद । धर्मं चर । – Speak the Truth, Abide by the Law

Vision statement of ICSI

To be a global leader in promoting Good Corporate Governance

Mission statement of ICSI

To develop high calibre professionals facilitating good Corporate Governance

Answer 1(b)(iii)

With Profits Committee

In terms of IRDA (Non-Linked Insurance Products) Regulations 2013, every Insurer transacting life insurance business shall constitute a With Profits Committee comprising of an Independent Director, the CEO, the Appointed Actuary and an Independent Actuary. The Committee shall meet as often as is required to transact the business and carry out the functions of determining the following:

- The share of assets attributable to the policyholders.
- The investment income attributable to the participating fund of policyholders.
- The expenses allocated to the policyholders.

The report of the With Profits Committee in respect of the above matters should be attached to the Actuarial Report and Abstract furnished by the insurers to the Authority.

Answer 1(b)(iv)

Theory of Relativism

Theory of Relativism promotes the idea that some elements or aspects of experience or culture are relative to i.e. dependent on, other elements or aspects. It holds that there are no absolute truths in ethics and that what is morally right or wrong varies from person to person or from society to society.

The term often refers to truth relativism, which is the doctrine that there is no absolute truth, i.e. that truth is always relative to some particular frame of reference, such as a society or a culture. For example, killing animals for sport (like bull fighting) could be right in one culture and wrong in another.

Answer 1(b)(v)**Training of Independent Directors**

As per Regulation 25 of SEBI (LODR) Regulations:

- (i) The company shall provide suitable training to independent directors to familiarize them with the company, their roles, rights, responsibilities in the company, nature of the industry in which the company operates, business model of the company, etc.
- (ii) The details of such training imparted shall be disclosed in the Annual Report.

Answer 1(c)

The actions and attitudes of the board greatly influence the ethical climate of an organization. The directors on a company's board assume legal responsibility for the firm's resources and decisions. Board members have a fiduciary duty, i.e., a position of trust and confidence. Due to globalization and enhanced role of media and technology, the demand for accountability and transparency has increased greatly. This calls for ethical decision-making as well as an ethical decision making framework.

An independent perspective and the independent judgment of directors can be helpful in determining a company's approach towards ethical issues and stakeholders interests. Independent directors are in a position to challenge current practices and also contribute knowledge and experience of good practices.

A report by the Conference Board Commission on Public Trust and Private Enterprise suggested the following areas of oversight by a Board:

- Designation of a Board Committee to oversee ethical issues;
- Designation of an officer to oversee ethical practices and employees' compliance with the code of ethics;
- Inclusion of ethics-related criteria in employees' annual performance reviews and in the evaluation and compensation of management;
- Representation by senior management that all known ethical breaches have been reported, investigated, and resolved; and
- Disclosure of practices and processes the company has adopted to promote ethical behavior.

Schedule IV of the Companies Act, 2013 prescribed Code for Independent Directors which cast duty on Independent Directors to report concerns about unethical behaviour, actual or suspected fraud or violation of the company's code of conduct or ethics policy.

Attempt all parts of either Q. No. 2 or Q. No. 2A

Question 2

- (a) *"The code of conduct of a company summarizes its philosophy of doing business. The exact details of this code are a matter of discretion." Enumerate the principles of drafting the code of conduct as followed in most of the companies. (5 marks)*

- (b) *“Investor relations (IR) is a strategic management responsibility that integrates finance, communication, marketing & securities law compliance to enable the most effective two-way communication between a company, financial community and other constituencies”. Elucidate the role and responsibilities of Investor Relations Officer (IRO) in the light of the above statement. (5 marks)*
- (c) *Your Company is planning to get listed in the stock exchange of India. As a Company Secretary, provide constitution of Audit Committee under the Section 177(2) of the Companies Act, 2013 and the changes as per Regulation 18 of SEBI Listing Obligations and Disclosure Requirements (LODR) Regulations, 2015, for the consideration of Chairman of your company. (5 marks)*

OR (Alternate question to Q. No. 2)

Question 2A

- (i) *You have been appointed as a Company Secretary of a Company. What would you ensure to comply with the provisions of Companies Act, 2013 regarding Quorum for Board Meeting ? Narrate the Decision Making Process at Board as enunciated in the Act.*
- (ii) *Describe the key role of Chief Executive Officer (CEO) and the benefits of separation of roles of Chairman and the CEO.*
- (iii) *What are CRT Principles of Responsible Business ? Discuss. (5 marks each)*

Answer 2(a)

Code of conduct, which is popularly known as Code of Business Conduct contains standards of business conduct that must guide actions of the Board and senior management of the company.

The Code of Conduct for each company summarises its philosophy of doing business. Although the exact details of this code are a matter of discretion, the following principles have been found to occur in most of the companies:

- (i) Use of company's assets;
- (ii) Avoidance of actions involving conflict of interests;
- (iii) Avoidance of compromising on commercial relationship;
- (iv) Avoidance of unlawful agreements;
- (v) Avoidance of offering or receiving monetary or other inducements;
- (vi) Maintaining confidentiality;
- (vii) Collection of information from legitimate sources only;
- (viii) Safety at workplace;
- (ix) Maintaining and Managing Records;
- (x) Free and Fair competition;
- (xi) Disciplinary actions against the erring person.

Answer 2(b)

Investor Relations (IR) is a strategic management responsibility that integrates finance, communication, marketing and securities law compliance to enable the most effective two-way communication between a company, the financial community, and other constituencies, which ultimately contributes to a company's securities achieving fair valuation.

Typically, investor relation is a department or person reporting to the Chief Financial Officer. In some companies, investor relation is managed by the public relations or corporate communications departments, and can also be referred to as "financial public relations" or "financial communications".

Many large publicly-traded companies now have dedicated IR officers (IROs) who oversee most aspects of shareholder meetings, press conferences, private meetings with investors, (known as "one-on-one" briefings), investor relations sections of company websites, and company annual reports. They have the following roles and responsibilities:

- To oversee most aspects of shareholder meetings, press conferences, private meetings with investors, (known as "one-on-one" briefings), investor relations sections of company websites, and company annual reports.
- Responsible for transmission of information relating to intangible values such as the company's policy on corporate governance or corporate social responsibility.
- Managing the interactive data and the management of company filings through streaming-data solutions such as XBRL or other forms of electronic disclosure
- To be aware of current and upcoming issues that an organization may face, particularly those that relate to fiduciary duty and have an organizational impact.
- Must be able to assess the various patterns of stock-trading that a public company may experience as the result of a public disclosure (or any research reports issued by financial analysts).
- Must work closely with the Company Secretary on legal and regulatory matters that affect shareholders.
- IRO's have access to the Chief Executive Officer (CEO) and Chairman or President of the corporation. This means that being able to understand and communicate the company's financial strategy, they are also able to communicate the broader strategic direction of the corporation and ensure that the image of the corporation is maintained in a cohesive fashion.
- Due to the potential impact of legal liability claims awarded by courts, and the consequential impact on the company's share price, IRO often has a role in crisis management, for example, corporate downsizing, changes in management or internal structure, product liability issues and industrial disasters.

Answer 2(c)

Section 177(1) of the Companies Act, 2013 read with rule 6 of the Companies

(Meetings of the Board and its Powers) Rules, 2014 provides that the Board of directors of following companies are required to constitute a Audit Committee of the Board-

- (i) All listed companies;
- (ii) All public companies with a paid up capital of 10 crore rupees or more;
- (iii) All public companies having turnover of 100 crore rupees or more;
- (iv) All public companies, having in aggregate, outstanding loans or borrowings or debentures or deposits exceeding 50 crore rupees or more.

Section 177(2) of the Companies Act, 2013 provides that the Audit Committee shall consist of a minimum of three directors with independent directors forming a majority. The majority of members of Audit Committee including its Chairperson shall be persons with ability to read and understand, the financial statement.

The paid up share capital or turnover or outstanding loans or borrowings or debentures or deposits, as the case may be, as existing on the date of last audited financial statements shall be taken into account for the purposes of this rule.

Regulation 18(1) of SEBI Listing Regulations, 2015 provides that every listed entity shall constitute a qualified and independent audit committee in accordance with its terms of reference, subject to the following:

- Audit Committee shall consist of a Minimum three directors as members.
- Two-thirds (2/3rd) of the members shall be independent directors.
- All members of audit committee shall be financially literate and at least 1 (one) member shall have accounting or related financial management expertise.
- The chairperson of the audit committee shall be an independent director and he shall be present at AGM to answer shareholder queries.
- The Company Secretary shall act as the secretary to the audit committee.
- The audit committee at its discretion shall invite the finance director or head of the finance function, head of internal audit and a representative of the statutory auditor and any other such executives to be present at the meetings of the committee. However, occasionally the audit committee may meet without the presence of any executives of the listed entity.

Answer 2A(i)

Quorum for a Board Meeting

As per section 174 of the Companies Act, 2013 and as per Secretarial Standard on Meetings of the Board of Directors (SS-1) provides that one third of total strength or two directors, whichever is higher, shall be the quorum for a meeting. If due to resignations or removal of director(s), the number of directors of the company is reduced below the quorum as fixed by the Articles of Association of the company, then, the continuing Directors may act for the purpose of increasing the number of Directors to that required for the quorum or for summoning a general meeting of the Company. It shall not act for any other purpose.

For the purpose of determining the quorum, the participation by a director through Video Conferencing or other audio visual means shall also be counted. If at any time the number of interested directors exceeds or is equal to two-thirds of the total strength of the Board of directors, the number of directors who are not interested and present at the meeting, being not less than two shall be the quorum during such time.

The meeting shall be adjourned due to want of quorum, unless the articles provide shall be held to the same day at the same time and place in the next week or if the day is National Holiday, the next working day at the same time and place.

Decision making process at the Board Meeting

- The Chairman and/or Managing Director should explain the proposal put up before the Board, the background and the expectation of the proposal in the short as well as the long- term to contribute to the growth of the company. If needed, a presentation may be made by the executive concerned for easing the considerations and discussions of the Board as they tend to highlight the key elements within the written data.
- The criticality and viability of the proposal should be explained and their views should be elicited from all angles.
- The Board could then deliberate all these issues and come to a decision.

Answer 2A(ii)

Chief Executive Officer

As per Section 2(18) of the Companies act, 2013, “Chief Executive Officer” means an officer of a company, who has been designated as such by it.

The Board appoints the CEO based on the criterion of his capability and competence to manage the company effectively. His main responsibilities include developing and implementing high-level strategies, making major corporate decisions, managing the overall operations and resources of a company, and acting as the main point of communication between the board of directors and the corporate operations. He is involved with every aspect of the company’s performance. The CEO is supported and advised by a skilled board and CEO is ultimately accountable to the board for his actions.

The most important skill of a CEO is to think strategically. His key role is leading the long term strategy and its implementation, it further includes:

- Developing the implementation plan of the actions, planned to meet the competition and keeping in mind the long term existence of the company.
- Adequate control systems.
- Monitoring the operating and financial outcomes against the set plan.
- Remedial action.
- Keeping the Board informed.

CEO should be able to, by the virtue of his ability, expertise, resources and authority keep the company prepared to avail the benefit of any change whether external or internal.

Separation of role of Chairman and Chief Executive Officer

The first proviso of section 203(1) of Companies Act, 2013 states that an individual shall not be appointed or reappointed as the chairperson of the company, in pursuance of the articles of the company, as well as the managing director or Chief Executive Officer of the company at the same time after the date of commencement of this Act unless, (a) the articles of such a company provide otherwise; or (b) the company does not carry multiple businesses.

It is perceived that separating the roles of chairman and chief executive officer (CEO) increases the effectiveness of a company's board. It is the board's and chairman's job to monitor and evaluate a company's performance. A CEO, on the other hand, represents the management team. If the two roles are performed by the same person, then it's an individual evaluating himself. When the roles are separate, a CEO is far more accountable.

A clear demarcation of the roles and responsibilities of the Chairman of the Board and that of the Managing Director/CEO promotes balance of power. The benefits of separation of roles of Chairman and CEO can be:

- *Direct Communication* : A separate chairman provides a more effective channel for the board to express its views on management.
- *Guidance* : A separate chairman can provide the CEO with guidance and feedback on his/her performance.
- *Shareholders' interest* : The chairman can focus on shareholder interests, while the CEO manages the company.
- *Governance* : A separate chairman allows the board to function more effectively and fulfill its regulatory requirements.
- *Long-Term Outlook* : Separating the position allows the chairman to focus on the long-term strategy while the CEO focuses on short-term profitability.
- *Succession Planning* : A separate chairman can more effectively concentrate on corporate succession plans.

Answer 2A(iii)

The 2009 CRT Principles for Responsible Business comprise of seven principles and more detailed Stakeholder Management Guidelines covering each of the key stakeholder dimensions of ethical business practices i.e., customers, employees, shareholders, suppliers, competitors, and communities.

The CRT Principles for Business are a worldwide vision for ethical and responsible corporate behavior and serve as a foundation for action for business leaders worldwide. As a statement of aspirations, the CRT Principles aim to express a world standard against which business behavior can be measured. The Caux Round Table has sought to begin a process that identifies shared values, reconciles differing values, and thereby develops a shared perspective on business behavior acceptable to and honoured by all.

CRT Principles for Responsible Business set forth ethical norms for acceptable businesses behaviour. The principles also have a risk management foundation because

good ethics is good risk management. And they balance the interests of business with the aspirations of society to ensure sustainable and mutual prosperity for all.

Seven CRT Principles are:

Principle 1 - Respect stakeholders beyond shareholders.

Principle 2 – Contribute to economic, social and environmental development.

Principle 3 – Build trust by going beyond the letter of the law.

Principle 4 – Respect rules and conventions.

Principle 5 – Support responsible globalisation.

Principle 6 – Respect the environment.

Principle 7 – Avoid illicit activities.

Question 3

- (a) *Describe the role of International Corporate Governance Network (ICGN) governed by the ICGN Memorandum and Article of Associations. (5 marks)*
- (b) *“The committees are formed as means of improving Board’s effectiveness and efficiency in the areas where more focused, specialized and technical discussions are required”. Evaluate the statement by bringing out the needs and significance of committees. (5 marks)*
- (c) *What are qualifications of an Independent Director (ID) ? Describe provisions under Companies Act, 2013 about separate meetings of Independent Directors (IDs). (5 marks)*

Answer 3(a)

The International Corporate Governance Network (“ICGN”) is a not-for-profit company limited by guarantee and not having share capital under the laws of England and Wales founded in 1995. It has four primary purposes:

- (i) to provide an investor-led network for the exchange of views and information about corporate governance issues internationally;
- (ii) to examine corporate governance principles and practices;
- (iii) to develop and encourage adherence to corporate governance standards and guidelines; and
- (iv) to generally promote good corporate governance.

The Network's mission is to develop and encourage adherence to corporate governance standards and guidelines, and to promote good corporate governance worldwide.

Membership of ICGN is open to those who are committed to the development of good corporate governance. The Membership section explains the benefits of membership, the different types of membership and how to join the ICGN.

The ICGN is governed by the ICGN Memorandum and Articles of Association. The

management and control of ICGN affairs are the responsibility of the Board of Governors. The Board in turn appoints a number of committees to recommend policy positions, to implement approved projects and to perform such functions that the Board may specify.

The Institute of Company Secretaries of India is a member of ICGN and also the country correspondent from India.

The ICGN Global Governance principles describe the responsibilities of board of directors and investors respectively and aim to enhance dialogue between the two parties. They embody ICGN's mission to inspire effective standards of governance and to advance efficient markets worldwide. The combination of responsibilities of boards of directors and investors in a single set of Principles emphasizes a mutual interest in protecting and generating sustainable corporate value. These principles were first initiated in 1995. The fourth edition of Principles was released in 2014.

Answer 3(b)

Committees are usually formed as a means of improving board effectiveness and efficiency, in areas where more focused, specialized and technical discussions are required. These committees prepare the groundwork for decision-making and report at the subsequent board meeting. Committees enable better management of full board's time and allow in-depth scrutiny and focused attention.

Board committees are pillars of corporate governance. Board committees with formally established terms of reference, criteria for appointment, life span, role and function constitute an important element of the governance process and should be established with clearly agreed reporting procedures and a written scope of authority. A Board can either delegate some of its powers to the committee, enabling it to act directly, or can require the recommendations of the committee to be approved by the Board. Committees thus enable better management of the board's time and allow in-depth scrutiny and focused attention.

Thus Committees have the following important roles :

- to strengthen the governance arrangements of the company and support the Board in the achievement of the strategic objectives of the company ;
- to strengthen the role of the Board in strategic decision making and supports the role of non-executive directors in challenging executive management actions;
- to maximise the value of the input from non-executive directors, given their limited time commitment;
- to support the Board in fulfilling its role, given the nature and magnitude of the agenda.

Committees should have clear goals, objectives, and terms of reference in order to function efficiently, and Boards should ensure that these are developed before establishing the committee. Many committees have been known to work outside their intended purpose due to a lack of precise objectives.

Significance of Board Committees

- (i) To improve Board effectiveness and efficiency.

- (ii) Minor details needs to be evaluated/ analysed to arrive at a logical conclusion- This requires body having expertise in subject matter, a Board Committee shall in such cases assist the Board and give well considered recommendations to the Board.
- (iii) Insulate Board from potential undue influence of controlling shareholders and managers.
- (iv) Committees prepare groundwork for decision making and submit their recommendations to the Board for decision making.
- (v) Enables better management of Board's time and allows in-depth scrutiny of proposals.
- (vi) Establishing committees is one way of managing the work of the Board and strengthening the Board's governance role.

Answer 3(c)

Qualification of an Independent Director

Section 149 (6) of the Companies Act, 2013 read with Rule 5 of Companies (Appointment and Qualification of Directors) Rules, 2014 provides that an independent director shall possess appropriate skills, experience and knowledge in one or more fields of finance, law, management, sales, marketing, administration, research, corporate governance, technical operations or other disciplines related to the company's business.

Separate meetings of the Independent Directors

Schedule IV of the Companies Act, 2013 provides the following regarding separate meeting of the Independent Directors:

- (i) The independent directors of the company shall hold at least one meeting in a year, in absence of non-independent directors and members of management.
- (ii) All the independent directors of the company shall strive to be present at such meeting.
- (iii) The meeting shall:
 - a. review the performance of non-independent directors and the Board as a whole;
 - b. review the performance of the Chairperson of the company, taking into account the views of executive directors and non-executive directors;
 - c. assess the quality, quantity and timeliness of flow of information between the company management and the Board that is necessary for the Board to effectively and reasonably perform their duties.

Question 4

- (a) *What are the applicable legal / regulatory provisions regarding Stakeholders Relationship Committee ? You, as practicing Company Secretary, advise the*

board mentioning the provisions relating to the Composition and Functions of the Committee.

- (b) *Describe various mandatory Board Committees for Insurance Companies in India with reference to the Insurance Regulatory and Development Authority of India (IRDAI) Corporate Governance Guidelines on Delegation of Function-Committees of the Board.*
- (c) *“Institutional Investors play an important role in promoting good governance, however, this notion has its own pros and cons”. What are these pros and cons? Explain. (5 marks each)*

Answer 4(a)

Provisions regarding Stakeholders Relationship Committee

Section 178(5) of the Companies Act 2013 provides that the Board of Directors of following companies shall constitute a Stakeholders Relationship Committee consisting of a chairperson who shall be a non-executive director and such other members as may be decided by the Board:

- Company which consists of more than one thousand shareholders, debenture-holders, deposit holders and any other security holders at any time during a financial year.
- The Stakeholders Relationship Committee shall consider and resolve the grievances of security holders of the company.

Regulation 20 of SEBI (LODR) Regulations, 2015 provides that every listed entity shall constitute a Stakeholders Relationship Committee to specifically look into the mechanism of redressal of grievances of shareholders, debenture holders and other security holders.

Composition of the Committee

Section 178(5) of the Companies Act 2013 and Regulation 20 of SEBI (LODR) Regulations, 2015 provides that-

- Stakeholders Relationship Committee shall consist of a chairperson who shall be a non-executive director
- Other members of the committee shall be decided by the Board.

The chairperson of the committees or, in his absence, any other member of the committee authorised by him in this behalf is required under the section to attend the general meetings of the company.

Functions of the Committee

The main function of the committee is to consider and resolve the grievances of security holders of the company.

The role of the Stakeholders Relationship Committee shall be to consider and resolve the grievances of the security holders of the listed entity including complaints related to transfer of shares, non-receipt of annual report and non-receipt of declared dividends.

Answer 4(b)

The Insurance Regulatory and Development Authority of India (IRDAI) has revised the existing Corporate Governance Guidelines for Insurance Companies in the light of changes brought in by the Companies Act, 2013 vide Circular Dated 18th May 2016.

As per the said Guidelines, with a view to provide adequate Board time for discharge of the significant corporate responsibilities, the Board can consider setting up of various Committees of Directors by delegating the overall monitoring responsibilities after laying down the roles and responsibilities of these Committees to the Board.

IRDAI advises all insurers that it is mandatory to establish the following committees:

- (i) Audit Committee.
- (ii) Investment Committee.
- (iii) Risk Management Committee.
- (iv) Policyholder Protection Committee.
- (v) Nomination and Remuneration Committee.
- (vi) Corporate Social Responsibility Committee (only for insurers earning profits).

In addition, Regulation 45d of the IRDA (Non-linked Insurance Products) Regulations, 2013 requires constitution of a 'With Profits' Committee by Life Insurance Companies comprising of one Independent Director of the Board, the Chief Executive Officer, the Appointed Actuary of the Company and an Independent Actuary.

Answer 4(c)

Institutional investors are financial institutions that accept funds from third parties for investment in their own name but on such parties' behalf. They include pension funds, mutual funds and insurance companies.

Institutional investors are organizations which pool large sums of money and invest those sums in companies. Their role in the economy is to act as highly specialized investors on behalf of others.

The Pros and Cons on the role of the institutional investors in promoting the good corporate governance may be listed as under:

<i>Pros</i>	<i>Cons</i>
The institutional investors have significant stakes in the companies and so of the voting power.	Mutual Fund Investors have the short term vision hence their performance measurement may not be a significant evaluation in assessing the corporate governance while making the investment decision.
They are in better position to have the access of the information about the company.	The investment objectives are also a deciding factor while making the investment decision.
The stock market performance can	Institutional investors may off load the

visualised with the adoption of the better corporate governance.	holding if there is mis-matching in their asset-liability / liquidity position.
They may influence in attracting the Foreign Direct Investment in India.	A common man's investment portfolio is affected with the decision of the investment by the institutional investors.

Based on the experience of countries where shareholders activism is vibrant, such as for example Australia, France, the UK, or the United States, it is reasonable to expect that Indian institutional investor should use their ownership rights more actively.

PART B

Question 5

- (a) *You have been recently appointed as a Company Secretary of a large company which has incurred expenditures on various CSR activities during the year. Advise the Board about the particulars to be ensured in Annual Report for disclosures on Corporate Social Responsibility (CSR) under Companies Act, 2013 by the Board.*
- (b) *What do you know about UN Global Compact ? Give brief introduction and mention Principles as pronounced by the Compact.*
- (c) *“Social, environmental and economical issues are fundamental to corporate to sustain in long run”. In view of this statement, define Corporate Sustainability and describe key aspects, companies as a corporate citizen, should focus.*
(5 marks each)

Answer 5(a)

The companies which are required to constitute a CSR Committee as per section 135 of the Companies Act, 2013 shall disclose the composition of CSR Committee in its Board Report. It is mandatory for such companies to disclose in Board's Report, an annual report on CSR. The report of the Board of Directors attached to the financial statements of the Company would also need to include an annual report on the CSR activities of the company. The Company Secretary will advise the Board about the format prescribed for annual report on the CSR containing following particulars:

- A brief outline of the company's CSR policy, including overview of projects or programs proposed to be undertaken and a reference to the web-link to the CSR policy and projects or programs.
- The composition of the CSR Committee.
- Average net profit of the company for last three financial years.
- Prescribed CSR Expenditure.
- Details of expenditure incurred on CSR activities during the financial year.
- In case the company has failed to spend the two per cent of the average net profit of the last three financial years or any part thereof, the company shall provide the reasons for not spending the amount in its Board report.

- A responsibility statement of the CSR Committee that the implementation and monitoring of CSR Policy, is in compliance with CSR objectives and Policy of the company.

Answer 5(b)

The UN Global Compact is a strategic policy initiative for businesses that are committed to aligning their operations and strategies with ten universally accepted principles in the areas of human rights, labour, environment and anti-corruption. By incorporating the Global Compact principles into strategies, policies and procedures, and establishing a culture of integrity, companies are not only upholding their basic responsibilities to people and planet, but also setting the stage for long-term success.

The UN Global Compact's Ten Principles are derived from the Universal Declaration of Human Rights, the International Labour Organization's Declaration on Fundamental Principles and Rights at Work, the Rio Declaration on Environment and Development, and the United Nations Convention Against Corruption. These Principles are:

Human Rights

Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights; and

Principle 2: make sure that they are not complicit in human rights abuses.

Labour

Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;

Principle 4: the elimination of all forms of forced and compulsory labour;

Principle 5: the effective abolition of child labour; and

Principle 6: the elimination of discrimination in respect of employment and occupation.

Environment

Principle 7: Businesses should support a precautionary approach to environmental challenges;

Principle 8: undertake initiatives to promote greater environmental responsibility; and

Principle 9: encourage the development and diffusion of environmentally friendly technologies.

Anti-corruption

Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery.

Principles to be clubbed under the following headings

Answer 5(c)

The contribution of sustainable development to corporate sustainability is twofold:

- First, it helps in setting out the areas that companies should focus on i.e., environmental, social, and economic performance.

- Secondly, it provides a common societal goal for corporations, governments, and civil society to work towards ecological, social, and economic sustainability.

However, sustainable development by itself does not provide the necessary arguments for why companies should care about these issues. Those arguments come from corporate social responsibility and stakeholder theory.

Corporate sustainability is a business approach that creates long-term shareholder value by embracing opportunities and managing risks deriving from economic, environmental and social developments. Corporate sustainability describes business practices built around social and environmental considerations.

Corporate sustainability encompasses strategies and practices that aim to meet the needs of the stakeholders today while seeking to protect, support and enhance the human and natural resources that will be the need of the future.

As a good corporate citizen, the companies are required to focus on the following key aspects:

- Absolute Value Creation for the Society.
- Ethical Corporate Practices.
- Worth of the Earth through Environmental Protection.
- Equitable Business Practices.
- Corporate Social Responsibility.
- Innovate new technology/process/system to achieve eco-efficiency.
- Creating Market for All.
- Switching over from the Stakeholders Dialogue to holistic Partnership.
- Compliance of Statutes.

Attempt all parts of either Q. No. 6 or Q. No. 6A

Question 6

Write short notes on the following :

- (a) Social Accountability International Standard.*
- (b) Ethical Consumerism.*
- (c) Brundtland Commission.*
- (d) Sustainability Reporting is an intrinsic element of Integrated Report. Elaborate.*
- (e) Montreal Protocol on Substances that deplete the Ozone Layer.*

(3 marks each)

OR (Alternate question to Q. No. 6)

Question 6A

- (i) What is Paris Agreement ? Discuss.*
- (ii) "Businesses should support inclusive growth and equitable development." Mention*

core elements of this principle of National Voluntary Guidelines on Social, Environment and Economic Responsibilities of Business 2011.

- (iii) *What is the measure of liability of an enterprise which is engaged in a hazardous or inherently dangerous industry, where by any chance an accident occurs, persons die or get injured ? Answer with reference to the Oleum Gas leak case by narrating in brief the issues raised by the petitioner and important Judgements pronounced by the Apex court.* (5 marks each)

Answer 6(a)

Social Accountability International Standard

The SA8000 Standard is the leading social certification standard for factories and organizations across the globe. It was established by Social Accountability International in 1997 as a multi-stakeholder initiative. Over the years, the Standard has evolved into an overall framework that helps certified organizations demonstrate their dedication to the fair treatment of workers across industries and in any country.

This is one of the world's first auditable social certification standard. It is based on ILO, UN and national law conventions, and adopts a management system approach in order to ensure that companies that adopt this approach also comply with it. This standard ensures the protection of basic human rights of workers.

The nine basic elements of this standard include (i) child labour (ii) forced and compulsory labour (iii) health and safety (iv) freedom of association and the right to collective bargaining (v) discrimination (vi) disciplinary practices (vii) working hours (viii) remuneration (ix) management systems. According to SAAS, there are 695 facilities in India that have been accredited with this standard. Out of these, Aditya Birla Chemicals (India) Limited, Bhilai Steel Plant Steel Authority of India Limited, Birla tyres, Dr Reddy's Laboratories Limited and Reliance Infrastructure Limited figure prominently in the list of certified facilities within India.

Answer 6(b)

Ethical consumerism

Ethical consumerism is the purchasing of products that do not harm or exploit the workers who help in producing a product, and to minimise their impact on the environment.

Supporting local industries that hire local artisans as designers, using cruelty-free cosmetics, shopping with reusable bags, drinking with a metal straw, or carrying a tumbler to reduce plastic waste—consumers now think about the ethical supply chain. Ethical consumer practices aim at the fulfilment of the objectives of socially responsible trade. Thus, in the global context ethical consumerism deals with the ethical and moral aspects of product value chain from production, i.e. sourcing of materials, down to retailing of the products. The ethical consumer ideal implies that individual consumers can have a significant role, through their daily purchasing decisions, in promoting ethical corporate practices.

Ethical consumerism is the trend fast gaining popularity among new-age customers. It simply means that more and more customers are choosing to purchase goods that are ethically sourced, ethically made and ethically distributed; in short, make their purchase

decisions based on perceptions created by following their product from inception, manufacturing practices, its motivations, and business model.

As consumers express their desire for greener products, brands respond with the launch of more non-chemical, health-friendly and eco-friendly products. Eco friendly paints, pest control products, lighting, furniture and consumer electronics, among several other things, are the result of consumer preferences.

Answer 6(c)

The Brundtland Commission, formally the World Commission on Environment and Development (WCED), known by the name of its Chairman Gro Harlem Brundtland, was convened by the United Nations in 1983. The Commission was created to address growing concern "about the accelerating deterioration of the human environment and natural resources and the consequences of that deterioration for economic and social development." In establishing the Commission, the UN General Assembly recognized that environmental problems were global in nature and determined that it was in the common interest of all nations to establish policies for sustainable development. In establishing the Commission, the UN General Assembly recognized that environmental problems were global in nature and determined that it was in the common interest of all nations to establish policies for sustainable development.

The Report of the Brundtland Commission, *Our Common Future*, published in 1987, deals with sustainable development and the change of policies needed for achieving that. The definition of this term in the report is quite well known and often cited:

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

Answer 6(d)

Sustainability reporting is a process that assists organizations in setting goals, measuring performance and managing change towards a sustainable global economy. Sustainability reporting is a process for publicly disclosing an organization's economic, environmental, and social performance. Many companies find that financial reporting alone no longer satisfies the needs of shareholders, customers, communities and other stakeholders for information about overall organizational performance. Through sustainability reporting, organizations report on progress against performance goals not only for economic achievements, but for environmental protection and social well-being.

Integrated reporting is an emerging and evolving trend in corporate reporting, which in general aims primarily to offer an organization's providers of financial capital with an integrated representation of the key factors that are material to its present and future value creation. Integrated reporters build on sustainability reporting foundations and disclosures in preparing their integrated report.

Although the objectives of sustainability reporting and integrated reporting may be different, sustainability reporting is an intrinsic element of integrated reporting. Sustainability reporting considers the relevance of sustainability to an organization and also addresses sustainability priorities and key topics, focusing on the impact of sustainability trends, risks and opportunities on the long term prospects and financial

performance of the organization. Sustainability reporting is fundamental to an organization's integrated thinking and reporting process in providing input into the organization's identification of its material issues, its strategic objectives, and the assessment of its ability to achieve those objectives and create value over time.

Answer 6(e)

Montreal Protocol on Substances that Deplete the Ozone Layer

The Montreal Protocol on Substances that Deplete the Ozone Layer (the Montreal Protocol) is an international agreement made in 1987. It was designed to stop the production and import of ozone depleting substances and reduce their concentration in the atmosphere to help protect the earth's ozone layer.

It is a protocol of the Vienna Convention for the Protection of the Ozone Layer, an international treaty designed to protect the ozone layer by phasing out the production of numerous substances believed to be responsible for ozone depletion. The treaty was opened for signature on 16th September 1987, and entered into force on 1 January 1989, followed by a first meeting in Helsinki, May 1989. Since then, it has undergone seven revisions, in 1990 (London), 1991 (Nairobi), 1992 (Copenhagen), 1993 (Bangkok), 1995 (Vienna), 1997 (Montreal), and 1999 (Beijing). Due to its widespread adoption and implementation it has been hailed as an example of exceptional international cooperation. Since the Montreal Protocol came into effect, the atmospheric concentrations of the most important chlorofluorocarbons and related chlorinated hydrocarbons have either levelled off or decreased. It is believed that if the international agreement is adhered to the ozone layer is expected to be recovered by 2050.

Answer 6A(i)

The Paris Agreement builds upon the Convention and for the first time brings all nations into a common cause to undertake ambitious efforts to combat climate change and adapt to its effects, with enhanced support to assist developing countries to do so. As such, it charts a new course in the global climate effort.

The Paris Agreement's central aim is to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius. Additionally, the agreement aims to strengthen the ability of countries to deal with the impacts of climate change.

To reach these ambitious goals, appropriate financial flows, a new technology framework and an enhanced capacity building framework will be put in place, thus supporting action by developing countries and the most vulnerable countries, in line with their own national objectives. The Agreement also provides for enhanced transparency of action and support through a more robust transparency framework.

At the 21st Conference of the Parties in Paris, Parties to the United Nations Framework Convention on Climate Change (UNFCCC) reached a landmark agreement to combat climate change and to accelerate and intensify the actions and investments needed for a sustainable low carbon future.

On Earth Day, 22nd April 2016, 175 world leaders signed the Paris Agreement at

United Nations Headquarters in New York. This was by far the largest number of countries ever to sign an international agreement on a single day.

Answer 6A(ii)

The Principle “Businesses should support inclusive growth and equitable development” is recommended by the National Voluntary Guidelines on Social, Environmental and Economic Responsibilities of Business Guidelines. The principle recognizes the value of the energy and enterprise of businesses and encourages them to innovate and contribute to the overall development of the country, especially to that of the disadvantaged, vulnerable and marginalised sections of society.

The principle also emphasizes the need for collaboration amongst businesses, government agencies and civil society in furthering this development agenda.

The principle reiterates that business prosperity and inclusive growth and equitable development are interdependent.

The core elements of this Principle are:

- Businesses should understand their impact on social and economic development, and respond through appropriate action to minimise the negative impacts.
- Businesses should innovate and invest in products, technologies and processes that promote the well being of society.
- Businesses should make efforts to complement and support the development priorities at local and national levels, and assure appropriate resettlement and rehabilitation of communities who have been displaced owing to their business operations.
- Businesses operating in regions that are underdeveloped should be specially sensitive to local concerns.

Answer 6A(iii)

The Oleum Gas Leak case came into limelight after it got originated in a writ petition filed in the Supreme Court by the environmentalist and lawyer M.C. Mehta, as a public interest litigation.

The petition raised some seminal questions concerning the Articles 21 and 32 of the Constitution, the principles and norms for determining the liability of large enterprises engaged in manufacture and sale of hazardous products, the basis on which damage in case of such liability should be quantified, and whether such large enterprises should be allowed to continue to function in thickly populated areas and if they are permitted so to function.

The pressing issue which the Supreme Court had to decide immediately in the petition, was whether to allow the caustic chlorine plant of Shriram Foods & Fertiliser Industries to be restarted.

On December 4, 1985 a major leakage of oleum gas took place from one of the units of Shriram, and this leakage affected a large number of people, both amongst the workmen and the public in general. This gas leak followed by another disaster i.e., within two

days, another leakage took place as a result of escape of oleum gas from the joints of a pipe. The Delhi Administration issued two orders, on the behest of Public Health and Policy, to cease carrying on any further operation in the unit, and to remove such chemical and gases from there.

The Inspector of Factories and the Assistant Commissioner (Factories) issued separate orders on December 7th and 24th, 1985 to shut down both the plants. Aggrieved, Shriram filed a writ petition challenging the two prohibitory orders issued under the Factories Act of 1948, and sought interim permission to reopen the caustic chlorine plant.

The Supreme Court, after examining the reports of the various committees that were constituted from time to time to examine the areas of concern and potential problems relating to the plant, as well as the existence of safety and pollution control measures, etc., held that pending consideration of the issue whether the caustic chlorine plant should be directed to be shifted and relocated at some other place, arrived at the conclusion that the caustic chlorine plant should be allowed to be restarted by the management subject to certain specified stringent conditions.

The Apex Court said that it is not possible to adopt a policy of not having any chemical or other hazardous industries merely because they pose hazard or risk to the community. If such a policy was adopted, it would mean the end of all progress and development. Such industries, even if hazardous, have to be set up since they are essential for the economic development and advancement of well-being of the people. We can only hope to reduce the element of hazard or risk to the community by taking all necessary steps for locating such industries in a manner which would pose least risk or danger to the community by maximizing safety requirements.
