

GUIDELINE ANSWERS

PROFESSIONAL PROGRAMME

DECEMBER 2021

MODULE 2



**THE INSTITUTE OF
Company Secretaries of India**

भारतीय कम्पनी सचिव संस्थान

IN PURSUIT OF PROFESSIONAL EXCELLENCE

Statutory body under an Act of Parliament

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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 2021

INFORMATION TECHNOLOGY AND SYSTEMS AUDIT

Time allowed : 3 hours

Maximum marks : 100

NOTE: Answer **ALL** Questions.

Question 1

The RTL India Ltd. is an Online retailing company selling electronic mercantile, grocery, food and other items. The company is doing well across metro cities and wishes to expand its coverage into urban areas with IT networking infrastructures. For online selling of these products, a consumer gets registered thru an online App or use his (her) credit/debit card to make online payment. In the recent past, the company is facing issues regarding cyber frauds and customers are complaining about the fraudulent transactions occurring thru their accounts, hence RTL India's reputation is at stake due to such issues. The company has decided to upgrade information systems software with IT enabled infrastructures by improving security on their network and providing cloud based services. You have been appointed as an advisor (consultant) to suggest ways to improve security strategies, good usage of supply chain management and uplifting the image of company with different stakeholders.

Based upon the above description, answer the following questions :

- (a) What is meant by 'secure system' ? Define public key and private key.
(3+1+1=5 marks)*
- (b) What does digital signature ensure ? How you can as an IT professional becomes a certifying authority ?
(3+2=5 marks)*
- (c) Under section 49 of IT Act, 2000 what is the composition of Cyber Appellate Tribunal (CAT) ? Enumerate the functions of CAT.
(2+3=5 marks)*
- (d) For a secured system, a good and cryptic password is required. How to create 'good' password ?
(5 marks)*

Answer 1(a)

Computer system are usually protected through the use of special hardware and software, policies, and practices against data corruption, destruction, interception, loss, or unauthorized access.

Five essential services provided by a secure system are

- (1) Authentication;
- (2) Authorization;
- (3) Integrity;
- (4) Privacy; and
- (5) Non-repudiation.

So, in general terms, a secured system provides:

1. A reasonable security from unauthorised access and misuse;
2. A reasonable level of reliability and operation;
3. Reasonably performing as per the intended functions;
4. A general adherence to accepted security norms.

Public Key:

In Public key encryption, two keys are used: one for encryption and another for decryption. This key is used for the encryption of the plain text to convert it into cipher text and another key (private key) is used by receiver to decrypt the cipher text to read the message.

Private Key:

In Private Key encryption, the same key - meaning the secret key, is used for encryption and decryption. This key is symmetric because the only key is copy or share by another party to decrypt the cipher text.

Answer 1(b)

A digital signature is like an 'electronic' fingerprint of a traditional paper based signature. This coded message is unique to the person who sign it and the document on which it is impacted. It ensures the authenticity of the signatory and thus any changes made thereafter is invalid -thus protecting the forgery and tempering.

Thus, it reduces the risk of duplication or alteration of the document ensuring that signatures are verified, authentic and legitimate. Signatories are provided with PINs, password and codes that can authenticate and verify their identity and approve their signatures.

How an IT Professional becomes a certifying authority

As per Section 2(1)(g) of Information Technology Act, 2000, "Certifying Authority" means a person who has been granted a license to issue a Digital Signature Certificate under section 24;

Anyone can make an application to the controller of certifying authorities for issuance of electronic signature.

Any person having a license to issue Electronic Signature certificates is a Certifying authority. To become a Certifying authority, one can make an application to the controller of certifying authorities for a license, provided he fulfils basic eligibility requirements as laid down by Central Government – which includes qualifications, experience (expertise) financial resources and manpower plus other infrastructural facilities as necessary. The license granted is valid for 5 years and not transferable according to the terms and conditions of Information Technology Act, 2000.

Answer 1(c)

The composition of the Cyber Appellate Tribunal (CAT) is provided for under section

49 of the Information Technology Act, 2000. Initially the Tribunal consisted of only one person who was referred to as the Presiding Officer but in year 2008, the composition of Cyber Appellate Tribunal was changed. As per the amended sections, the Tribunal shall consist of a Chairperson and such number of other Members as the Central Government may by notification in the Official Gazette appoint. The selection of the Chairperson and Members of the Tribunal is made by the Central Government in consultation with the Chief Justice of India. The Presiding Officer of the Tribunal is now known as the Chairperson.

Functions of Cyber Appellate Tribunal (CAT)

For the purposes of discharging its functions under this Act, The CAT shall have the same powers as are vested in a civil court under the Code of Civil Procedure, 1908, while trying a suit, in respect of the following matters:

1. Summoning and enforcing the attendance of any person and examining him on oath;
2. Producing electronic records or documents;
3. Receiving evidence on affidavit;
4. Issuing commissions for examination of witnesses or documents;
5. Dismissing application for default or deciding it ex parte;
6. Reviewing its decisions and any other related matter.

Answer 1(d)

The features or characteristics of a good password are as under:

1. Must be minimum 8-character long. A longer password would be even better;
2. Should not contain dictionary or common words;
3. Should not contain personal information like name, date of birth etc., which may be predicted easily;
4. Must include 3 to 4 of such characters as: UPPER CASE letter, lower case letter, special symbols like \$%^&. Using a mix of different types of characters to make the password harder to crack;
5. Keep changing it periodically (preferably 6 months to a year).

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

Question 2

- (a) *What are the major modules of the ERP package and their functions ?*
- (b) *Information is indeed valuable to a decision making process. Discuss four distinguishing features of information.*
- (c) *In recent times, Agile software development process has become very important. What are the merits using agile process ?*

- (d) *Being 'Online' is a recent trend in IT, discuss social computing as the need of the time.* (4 marks each)

OR (Alternate question to Q. No. 2)

Question 2A

Distinguish between the following :

- (i) *Assembly Language and High Level Language*
- (ii) *UDP and ICMP*
- (iii) *Hierarchical and network DBMS*
- (iv) *G2C and G2G* (4 marks each)

Answer 2(a)

The major modules of ERP package and their functions are:

S. No.	Major Modules	Functions
1	Business	Forecasting, Planning, Goals, Objectives, Targets, Strategy Control, Fixed Assets
2	Sales	Forecasting, Planning, Sales Budget, Order Processing, Order Execution, Delivery Invoicing, Maintenance.
3	Production	Planning, Order Control, WIP, Quality, Scheduling, Dispatch, Quality Control.
4	Materials	Purchase, Inventory, Stores, Valuation, Analysis, Control, Cost.
5	Finance	Accounting, Funds Management, Balance Sheet Processing, Schedules Analysis, Control, Management Accounting, Budgeting, Asset Management, General Ledger, Accounts Payable, Cash Reconciliation, Account Receivables, Governance and Risk Management, Travel and Expense Management.
6	Personnel	HR, Payroll, Skill Attendance inventory, Analysis, control, Consolidation of Business Operations, Performance, Student Management, Student Lifecycle, Academic Advisement.
7	Analytics	Reporting, Business intelligence, creating dashboards, analysing downstream data.

Answer 2(b)

Following are the four criteria used to distinguish valuable information from lesser ones:

1. **Accurate** : Information should be reliable and be a representative of a reality else the cost of inaccurate or distorted will be potentially high.

2. **Timely Available** : Whenever needed it should be available at that moment. Like air travel, online ticket availability etc.
3. **Complete** : Information should be comprehensive in covering the topic of question or liking or interest. In absence of this, the decision may get a partial view or a distorted view of reality. This incompleteness of information, sometimes may lead business retardation.
4. **Relevance** : When it can be applied to a specific situation, problem or issue. For instance, HR manager may need information for hiring, as significant. Marketing personal may require information about the market, and so on.

Answer 2(c)

Agile methodology is a type of project management process, mainly used for software development, where demands and solutions evolve through the collaborative effort of self-organizing and cross-functional teams and their customer. It's a mutual cooperative process.

It breaks the tasks into smaller increments with minimum planning and with short iterations of 1 to 4 weeks. In each iteration a full cycle of Software Development Life Cycle (SDLC) is repeated and demonstrated to the customer - meaning customer satisfaction is prime motto. If bugs are found, they are reported at the end so that it can be taken back in next iteration.

The agile teams have a nice property that the team is cross-functional, so that each individual is heard and can contribute significantly. People prefer a Face-To-Face (F2F) communication over written and hard documentation. A small team of size 5-9 members are given freedom to fully come out with their ideas on communicated with peers.

In team meeting they discuss about everyday process and set milestones for next days, so that priorities can be set and accordingly can be changed and managed. In summary, merits are:

- High product quality.
- Higher customer satisfaction.
- Increased project control.
- Reduced risks.
- Faster ROI.
- Customer, Developer, and Product Owner interact regularly to emphasize rather than processes and tools.
- Product is developed fast and frequently delivered (weeks rather than months.).
- It continuously gave attention to technical excellence and good design.
- Daily and close cooperation between business people and developers.
- Regular adaptation to changing circumstances.

Answer 2(d)

In recent times, everyone is using online platform most of the time for procuring daily need commodities, social networking, entertainment and for many other purposes. It is an area concerned with the intersection of social behaviour and computational systems. It is based on creating or recreating social conventions and social contexts through the use of software and technology. Thus, blogs, email, instant messaging, social network services, wikis, social bookmarking and other instances of what is often called social software illustrate ideas from social computing.

With the advent of data analytics, the data generated by these medias can be used by market position, consumer sentimental analysis, and alike. With this, businesses are able to result oriented and focused decisions on communities, specific issues with collaboration and transactional support.

Answer 2A(i)

Assembly code is converted to machine code (binary code) via an assembler whereas high level languages are either compiled or interpreted, where the compiler/interpreter converts the code to assembly and the code is then assembled and finally executed

Features of HLL:

- High level languages are easily understandable (like C/C++/Java, etc.).
- The programs that are developed in high level language are portable.
- In case of high level languages debugging of the code is easy and the program written is not machine dependent.

Features of AL

- AL are not easy to understand, however, they are relatively easier as compared to machine level languages.
- The programs written in this language are not portable and the debugging process is also not very easy.
- The programs developed in assembly language are thoroughly machine dependent.

Answer 2A(ii)**User Datagram Protocol (UDP)**

The User Datagram Protocol (UDP) is a member of TCP/IP protocol suit. Unlike TCP, UDP is a connectionless communication protocol- meaning that UDP datagrams can be sent without establishing a connection between two devices, allowing them to be sent without consideration for rate or sequence. The UDP with IP sent small amounts of information and if course lacks flow control and error recovery functions.

Internet Control Message Protocol (ICMP)

The Internet Control Message Protocol (ICMP) is a supporting protocol in the TCP/IP suits and used by network devices, including routers, to send error messages and

operational information indicating success or failure when communicating with another IP address. For instance, an error is indicated when a requested service is not available or that a host or router could not be reached. ICMP differs from TCP and UDP in that it is not typically used to exchange data between systems, nor is it regularly employed by end-user network applications - with the exception of some diagnostic tools ping and trace route commands.

Answer 2A(iii)

Hierarchical and network Database Management System (DBMS)

In Hierarchical data model, relationship between table and data is defined in parent child structure. In this structure data are arranged in the form of a tree structure. This model supports one-to-one and one-to-many relationships.

On the other hand, network model arrange data in graph structure. In this model each parents can have multiple children and children can also have multiple parents. This model supports many to many relationships also.

Key	Hierarchical DBMS	Network DBMS
Basic	Relationship between records is of the parent child type.	Relationship between records is expressed in the form of pointers or links.
Data Inconsistency	It can have data inconsistency during the updation and deletion of the data.	No Data inconsistency.
Traversing	Traversing of data is complex.	Data traversing is easy because node can be accessed from parent to child or child to parent.
Relationship	It does not support many to many relationships.	It support many to many relationships.
Structure	Its create tree like structure.	It support graph like structure.

Answer 2A(iv)

Government to Citizen (G2C)

Model of e-governance provide one-step, online access of information and services to citizens. It enables for queries on filing of taxes (income and real estate), renewal of driving licence, etc. as local and state wise. It also provides 24/7 access through telephone, email and other means. In summary, this model includes:

- Online bills payment for electricity, water, telephone, etc.
- Online registration of records and filling of complaints, etc.

Government to Government (G2G)

Refers to services shared between Governments in order to improve efficiency and effectiveness. Example of this model includes:

- Sharing of information between police department of various states,

- Preparation and sharing of documents between states,
- Finance and budgeting information between states.

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

Question 3

- (a) Briefly explain the objectives of making Information Technology Act, 2000 of India.
- (b) What is the role of E-commerce in supply chain management ? Briefly explain.
- (c) Name the important reasons in conducting Information System Audit.
- (d) What are the documents to be verified by IS auditor in System Development Methodology ? State briefly. (4 marks each)

OR (Alternate question to Q. No. 3)

Question 3A

- (i) Discuss briefly suspension of Digital Signature Certificate. (4 marks)
- (ii) Discuss about RDBMS and Object oriented DBMS with examples. (2+2=4 marks)
- (iii) How performance of a computer system is improved using a cache memory ? What are their advantages and disadvantages ? (1+2+1=4 marks)
- (iv) Draw a block diagram of a computer system. Explain its functional components. (1+3=4 marks)

Answer 3(a)

The Information Technology Act, 2000 was made applicable in India with following objectives:

- i) To give legal recognition to any transaction which is done electronically or use of internet.
- ii) To give legal recognition to digital signature for accepting any agreement via computer.
- iii) To provide facility of filling document online relating to school admission or registration in employment exchange.
- iv) To provide legal recognition for storage in electronic format.
- v) To stop computer crime and protect privacy of internet users.
- vi) To give legal recognition for keeping books of accounts by bankers and other companies in electronic form.
- vii) To make more power of IPO, RBI and Indian Evidence Act, 1872 for restricting electronic crime.
- viii) To amend the Indian Penal Code, 1860, Indian Evidence Act, 1872, The Bankers' Books Evidence Act, 1891 and the Reserve Bank of India, 1934.

Answer 3(b)**E-commerce in Supply Chain Management (SCM)**

E-Commerce in SCM is a collaborative use of technology to enhance B2B processes to improve speed, agility, real-time control and ultimately customer satisfaction. It provides e-procurement, planning, coordination of supply chain activities. In addition to these, it also involves changes in management policies, organisational culture, performance metrics, business processes and organization structures across the whole of SCM.

Hence, Speed, Cost, Quality and Customer Services will be improved and targets can be achieved easily. This blending will benefit both within a company and across an extended enterprises made up of suppliers, trading partners, logistic providers and distribution channel.

Answer 3(c)

The factors driving the growth of System Audit or making it significant are as under:

- i) Ensuring the security of information.
- ii) Achieving Standardization in processes.
- iii) Improvement in business efficiency.
- iv) Improved system and process controls.
- v) Plan for contingencies and disaster recovery.
- vi) Evaluating the effectiveness and efficiency related to the use of resources.
- vii) Prevention and detection of errors and fraud.
- viii) Building Confidence and Public Reputation.

Answer 3(d)

The documents to be verified by IS auditor in System Development Methodology are enumerated below:

- i) Functional requirement Specifications;
- ii) Software requirement Specification;
- iii) Design Description;
- iv) Software Code;
- v) Test Plan;
- vi) Unit test results;
- vii) Integration test results;
- viii) Acceptance test results.

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

Answer 3A(i)**Suspension of Digital Signature Certificate**

Provisions relating to Suspensions of Digital Signature are contained in Section 37 of Information Technology Act, 2000 as amended. It provides that:

The Certifying Authority which has issued a Digital Signature Certificate may suspend such Digital Signature Certificate:

- a) On receipt of a request to that effect from
 - The Subscriber listed in the Digital Signature Certificate; or
 - Any person duly authorized to act on behalf of that subscriber.
- b) If it is of opinion that the Digital Signature Certificate should be suspended in public interest.

It shall not be suspended for a period exceeding fifteen days unless the subscriber has been given an opportunity of being heard in the matter. On suspension of a digital Signature Certificate under this section, the Certifying Authority Shall communicate the same to the subscriber.

Answer 3A(ii)**Relational DBMS**

A database management system (DBMS) that incorporates the relational-data model, normally including a Structured Query Language (SQL) application programming interface. It is a DBMS in which the database is organized and accessed according to the relationships between data items.

In a relational database, relationships between data items are expressed by means of tables. Interdependencies among these tables are expressed by data values rather than by pointers. This allows a high degree of data independence.

There are 3 important keys terms:

- a. Relationship,
- b. Domain and
- c. Attributes.

These are applied to the created tables - which contains sets of records with one to-many or any other type of relationships. A record is a row-column set of usually 2 dimensions and stored in the memory. At present, a number of RDBMS packages are available in market and some popular are: Oracle Microsoft SQL/Access, Sybase, Informix and Ingress.

Object Oriented DBMS

These are able to handle varied data types, typically including graphics, text, audio, video etc. These uses network or hierarchical approach to handle structured and semi or unstructured data as well. Hence, these kind of DBMS are extensively used in web and multimedia applications and text and photograph sharing through social media – like flicker or Instagram and other.

Answer 3A(iii)

Cache memory is a block of high speed memory where data is copied when it is retrieved from the RAM. This storage of key instructions enables a performance improvement in the processor. It stores the program that can be executed within a short period of time.

Advantages

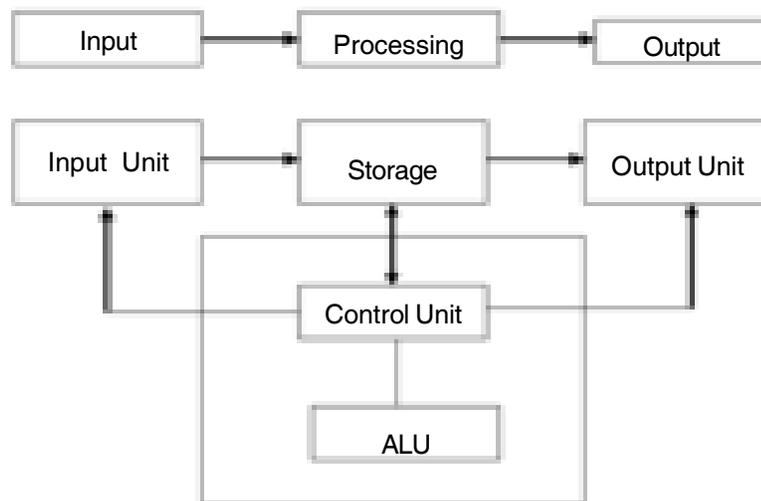
The advantages of cache memory are as follows -

- Cache memory is faster than main memory.
- It consumes less access time as compared to main memory.
- It stores the program that can be executed within a short period of time. It stores data for temporary use.

Disadvantages

The disadvantages of cache memory are as follows –

- Cache memory has limited capacity.
- It is very expensive.

Answer 3A(iv)**Functional Components of Computer System**i) *Input Devices*

The set of instruction or information is provided to the computer with the help of input devices such as (keyboard, mouse, scanners etc.). The Instruction or

data presented to computer system is converted into binary form then it is supplied to computer system for further processing.

ii) *Output devices*

Produce outputs on - such as printer, monitor etc. With the help of output devices, the system is connected with outside world.

iii) *Storage*

The process of saving data and instructions permanently is known as storage. Data has to be fed into the system before the actual processing starts. It is because the processing speed of Central Processing Unit (CPU) is so fast that the data has to be provided to CPU with the same speed. Therefore, the data is first stored in the storage unit for faster access and processing. This storage unit or the primary storage of the computer system is designed to do the above functionality. It provides space for storing data and instructions.

iv) *Central Processing Unit (CPU)*

The CPU is an electronic hardware device which performs all the operation such as arithmetic and logic operation. The CPU is another term for "PROCESSOR". Every instruction given through the input devices such as keyboard or mouse is carried further for processing and we user get our desired results through are output devices such as printers and monitors.

v) *Control Unit (CU)*

CU coordinates all activities performed in a computer system. It receives information or instruction or directions from the main computer. It tells the logic unit, memory as well as the input and output devices how to handle the program or instruction in proper order.

vi) *Arithmetic and Logic Unit*

There are some processors now that has more than single AU (Arithmetic Unit). ALU performs arithmetic and logical operation. When a set of instruction or program is conveyed out. Control unit generally characterized which sort of operation to Execute. Arithmetic operation comprises of (Addition, subtraction, division, multiplication) and the logical unit carries out the operation such (AND, OR, Equal, less than, greater then), and later the control is changed to ALU and the result generated in ALU later stored or puts away in transitory memory.

Question 4

- (a) *Explain in brief the business values of ERP.* (4 marks)
- (b) *What are the core capabilities of Decision Support System ?* (4 marks)
- (c) *The Government of India has approved the National Policy on Software Products (NPSP) - 2019. In order to achieve the vision of NPSP - 2019, discuss the five missions of the policy.* (4 marks)
- (d) *What are the limitations of using MIS ? State any four limitations.* (4 marks)

Answer 4(a)

The Business Value of Enterprise Resource Planning (ERP)

- Gives a global, real-time view of data that can enable companies to address concerns proactively and drive improvements.
- Improves financial compliance with regulatory standards and reduces risk.
- Automates core business operations such as lead-to-cash, order-to fulfilment, and procure-to-pay processes.
- Enhances customer service by providing one source for billing and relationship tracking.

Answer 4(b)

The core capabilities of Decision Support System are:

1. **Representations** : It includes the presentation of the information in the form of graphs, charts, lists, reports, formatted reports, symbols, etc. These results are being used for control mechanism.
2. **Operations** : In include logical & mathematical manipulation of data.
These operations are confined to gathering information, generating statistics, preparing reports, assigning risk and values, generating alternatives using simulation etc.
3. **Memory aids** : It also provides updating of databases and memory, viewing of data, work spaces, libraries and linkages among libraries and work places.
4. **Control aids** : It provide the facility to user to control the activity of DSS. It includes a language permitting user control of operations, representations and memory. It also include features such as tutorials, help commands, functions keys, conventions etc.

Answer 4(c)

The National Policy on Software Products (NPSP)-2019 envisages for initiatives, projects and their measures for software development. In order to achieve the vision, the policy has enumerated 5 missions:

- I. To promote the creation of a sustainable Indian software product industry, driven by Intellectual Property (IP) leading to a ten-fold increase in India's shares of the global software product market by 2025.
- II. To nurture 10,000 technology start-up in software product industry, including 1000 such technology start-up in Tier-II and Tier-III towns and cities and generating direct and in-direct employment for 3.5 million people by 2015.
- III. To create a talent pool for SW product through up skilling of 1,000,000 IT professional and motivating 100,000 school and college students and generating 10,000 specialized professionals who can provide leadership.
- IV. To build a cluster-based innovation driven ecosystem by developing 20 sectorial

and strategically located software product development clusters having integrated ICT infrastructure, marketing, incubation R&D / test beds and mentoring support.

- V. Evolve and monitor scheme & program for implementation of this policy. NSP mission will be set up with participants from Government, academia and Industry.

Answer 4(d)

The main limitations of Management Information System (MIS) are as follows:

1. The quality of the outputs of MIS is basically governed by the quality of inputs and processes.
2. MIS is merely a tool and not a substitute for effective management i.e., MIS cannot replace managerial judgment in decision making and problem solving MIS may not have requisite flexibility to quickly adapt itself with the changing needs of time, especially in the dynamic and complex environment.
3. MIS cannot provide tailor made information packages suitable for the purpose of every type of decisions made by executives at different levels.
4. MIS takes into account mainly quantitative factors; thus it ignores significant qualitative factors like morale, attitudes of members of the organization, which have an important bearing on decision-making process of executives.
5. MIS is less useful in non-programmed decision-making. Such type of decisions is not of routine type and thus require information, which may not be available from existing MIS to executives.
6. The effectiveness of MIS is reduced in the organization, where the culture is to hold information and not share with others.
7. MIS effectiveness decreases due to frequent changes in top management organizational structure and operational team.

Question 5

- (a) A housing society having 400 members pay the electricity bill at the following rates :

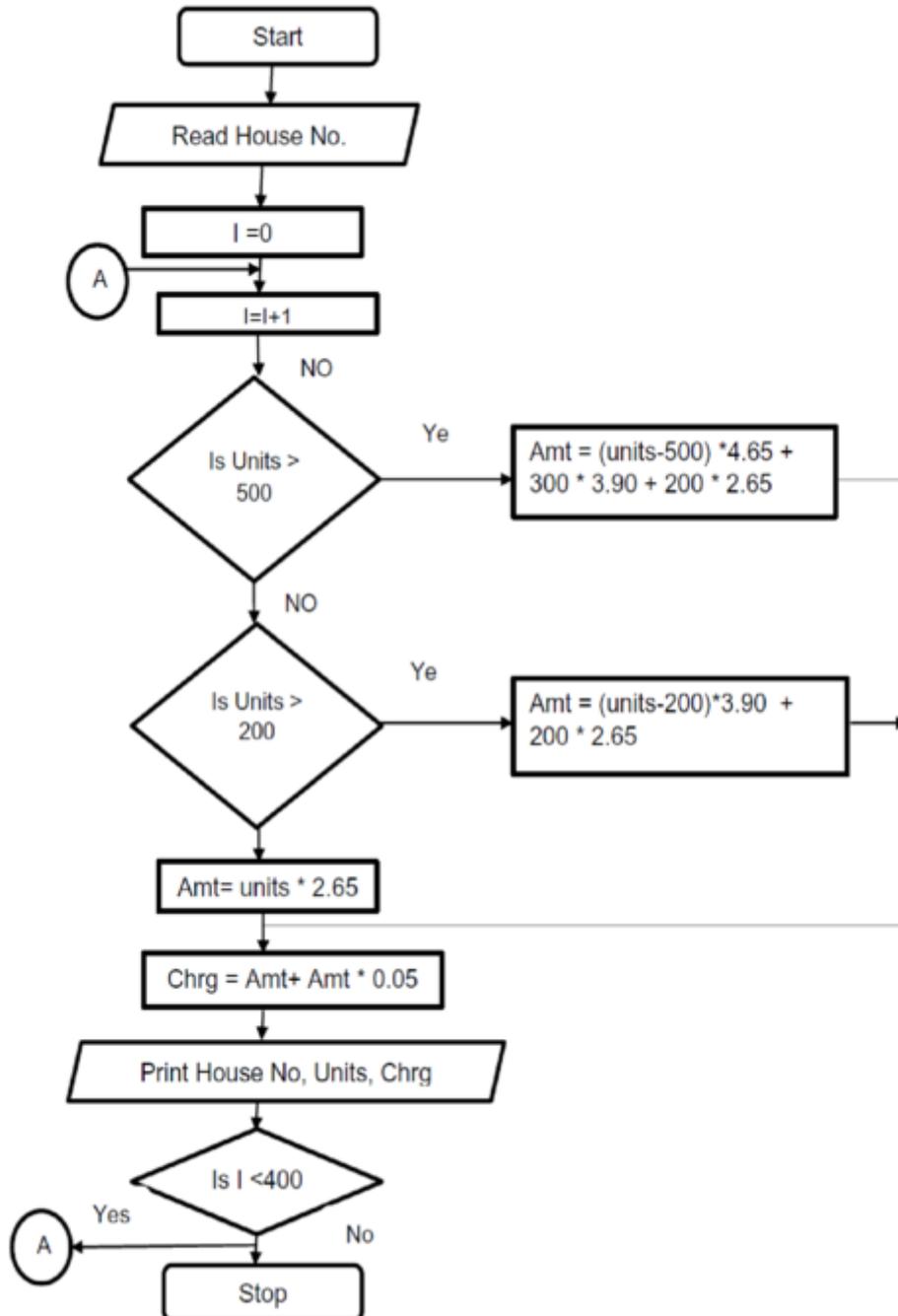
<i>No. of Units consumed</i>	<i>Charges/Unit (₹)</i>
<i>For the First 200 units</i>	<i>2.65</i>
<i>For the next 300 units</i>	<i>3.90</i>
<i>Over 500 units</i>	<i>4.65</i>

Surcharge @ 5% of the bill is to be added to the charges.

Draw a flow chart for the above, which will read the house number and the number of units consumed and print out the total charges with the house number and the unit consumed. (8 marks)

- (b) *What an application software does ? List out the examples of some application software and discuss them briefly.* (2+6=8 marks)

Answer 5(a)



Answer 5(b)

Application software is a term which is used for software created for a specific purpose. It is generally a program or collection of programs used by end users. They direct the processing required for a particular use.

Examples of an application include a word processor, a spreadsheet, an accounting application, a web browser, an email client, a media player, a file viewer, an aeronautical flight simulator, a console game or a photo editor.

List of examples of Application software

1. Word Processing - the most common to edit and change text. MS Word and Notepad.
2. Spreadsheet – lets user enter data in row and column form with Mathematical capabilities of calculations and graphic presentation. MS EXCEL, Lotus 123.
3. DBMS – Able to create tables, manipulation and conditional queries. MS SQL, ACCESS, Oracle DBMS 11g and others
4. Presentation Graphics - for visual presentation. MS Power point.
5. Multimedia – for images, streaming videos. Real time Player, Media Player.
6. Accounting – for transaction accounting. Tally, busy etc.
7. Mobile – allows user to carry out application through mobile. Opera Mini, eBuddy etc.

Question 6

Write short notes on the following :

- (a) *Use of Big data business analytics*
- (b) *Common Service Centre*
- (c) *Types of cloud computing services*
- (d) *Features of Wi-Fi*

(4 marks each)

Answer 6(a)**Use of Big data Business analytics**

Big data analytics is often complex process of examining large and varied data sets, or big data, to uncover information - such as hidden patterns, unknown correlations, market trends and customer preferences - that can help organizations make informed business decisions.

Big data analytics is a form of advanced analytics, which involves complex applications with elements such as predictive models, statistical algorithms and what-if analysis powered by high-performance analytics systems.

The importance of big data analytics

Big data analytics offers various business benefits, including:

- New revenue opportunities

- More effective marketing
- Better customer service
- Improved operational efficiency
- Competitive advantages over rivals

Big data analytics applications enable big data analysts, data scientists, predictive modellers, statisticians and other analytic professionals to analyse growing volumes of structured transaction data, plus other forms of data that are often left untapped by conventional BI (Business intelligence) and analytics programs. This encompasses a mix of semi-structured and unstructured data. For example- internet clickstream data, web server logs, social media content, text from customer emails and survey responses, mobile phone records, and machine data captured by sensors connected to the Internet of Things (IoT).

Answer 6(b)

Common Service Centre

In the year 2006, The Government of India launched Common Service Centre (CSC) Scheme for setting up of more than one lakhs internet enabled centres in rural areas under the National e-Governance plan in a Public Private Partnership (PPP) mode. They are proposed to be the delivery points for Government Private and Social Sector services to rural citizens of India at their doorsteps.

The CSC Scheme is envisaged to be a bottom-up model for delivery of content, services, information and knowledge, that can allow like-minded public and private enterprises through a collaborative framework – to integrate their goals of profit as well as social objectives, into a sustainable business model for achieving rapid socio economic change in rural India.

The various G2C services offered by CSC are: Agricultural services, RTI services, Land records, Issue of Birth and Death certificate, Utility services, e district services etc.

Answer 6(c)

Types of cloud computing services

Cloud computing technology enables the reusability of IT resources for storing large databases, developing and hosting complex applications, and expanding computational power and other services on demand. Eliminating or reducing investments on large-scale infrastructure and software, coupled with the pay per-use model, significantly reduces IT costs. Cloud computing services fall into 3 categories:

1. *Infrastructure-as-a-service (IaaS):*

IaaS is the most basic category of cloud computing services that allows you rent IT infrastructure (servers or VM's) from a cloud provider on a pay-as you-go basis.

2. *Platform as a service (PaaS)*

Refers to the supply an on-demand environment for developing, testing, delivering and managing software applications. It is designed to quickly create web or

mobile apps, without worrying about setting up or managing the underlying infrastructure of servers, storage, network and databases needed for development.

3. *Software as a service (SaaS)*

SaaS a method for delivering software applications over the Internet as per the demand and on a subscription basis. SaaS helps you host and manage the software application and underlying infrastructure and handle any maintenance (software upgrades and security patching).

Answer 6(d)

Features of Wi-Fi

Wi-Fi (Wireless Fidelity) is a trademark term meaning IEEE 802.11x and is defined as any “wireless local area network” (WLAN) products that are based on the Institute of Electrical and Electronics Engineers (IEEE) 802.11 standards. Its features are as under:

- It is wireless networking technology that uses radio waves to provide wireless high-speed internet and network connections.
- It enables a user to get access to internet anywhere in the given location.
- The broadcast of data is completed via radio waves.
- Wi-Fi enables a user to get access to internet anywhere in the given location. Wi-Fi makes waves for business with their highly effective cable less media.

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 should form the part of answer.

Question 1

Comment on the following:

- (a) The interest rate given by a bank for deposits and the repo rate are the decisive factors in the calculation of Marginal Cost of Fund based Lending Rate (MCLR).
- (b) Movements of the business cycle influence working capital changes at significant level.
- (c) Sensitivity analysis does not make any decision of itself.
- (d) "To the borrowers, securitization does not matter for what they get is loan and to them it makes no difference as to hold the claim." Comment with suitable example. (5 marks each)

Answer 1(a)

The interest rate given by a bank for deposits and the repo rate are the decisive factors in the calculation of Marginal Cost of Funds based Lending Rate (MCLR).

The Reserve Bank of India has brought a new methodology of setting lending rate by commercial banks under the name Marginal Cost of Funds based Lending Rate (MCLR). It has modified the existing base rate system from April 2016 onwards. As per the new guidelines issued by the RBI, banks have to determine MCLR which is the internal benchmark lending rates. Based upon this MCLR, interest rate for different types of customers should be fixed in accordance with their risk profile. The base rate will now be determined on the basis of the MCLR calculation.

The MCLR should be revised monthly by considering some new factors including the repo rate and other borrowing rates. Specifically, the repo rate and other borrowing rates were not explicitly considered under the base rate system. As per the new guidelines, banks have to set the benchmark rates for different tenure or time periods ranging from overnight (one day) rates to one year. The new methodology uses the marginal cost or latest cost conditions reflected in the interest rate given by the banks for obtaining funds (from deposits and while borrowing from RBI) while settling their lending rate. This means that the interest rate given by a bank for deposits and the repo rate (for obtaining funds from the RBI) are the decisive factors in the calculation of MCLR.

Answer 1(b)**Movements of the business cycle influence Working Capital changes at significant level**

The recurring movements of the business cycle influence working capital changes. As business recedes, companies tend to defer capital replacement programmes and deflect depreciations to liquid balances rather than fixed assets. Similarly, curtailed sales reduce amounts receivable and modify inventory purchases, thereby contributing further to the accumulation of cash balances. Conversely, the sales, capital, and inventory expansions that accompany a boom produce a greater concentration of credit items in the balance sheet. The pressure on company finances during boom years is reflected in the business drive for loans and the high interest rate of these years as compared with a reversal of such conditions during the periods of economic decline

Answer 1(c)**Sensitivity Analysis**

Samuel and Wilkes in "Management of Company Finance" opine that sensitivity analysis does not make any decisions of itself. It is a practicable procedure that presents derived information in particularly revealing way. The method is usually applied to each possible project as it arises. It could be used for the total company activities-existing investments plus new proposals, but such a grand exercise would detract from the essential simplicity of the method and not be warranted for all the largest projects. When all the sensitivity data have been assembled a judgement has then to be made as to whether the picture presented is acceptable or not. In this decision the management may subjectively estimate the likelihood of each scenario, or they may play safe and consider only the worst possibilities. It is unlikely that the market as a whole would have access to the same volume and quality of information as that given by the sensitivity analysis – and this would have to be done by intelligent guess too. A sensitivity analysis is particularly helpful in large projects that would have a substantial impact on the company's operations.

Answer 1(d)**Securitization of Debt**

It is a technique by which identified receivables and other financial assets can be packaged into transferable securities and sold to investors. The instruments issued under securitization deal derive their value from cash flows (current or future) or collateral value of a specified financial asset or pool of financial assets, general debt obligations or other financial receivables. Normally, these instruments do not have any recourse to the originator other than aforementioned assets and specified third party support mechanisms that are clearly defined and are not unlimited (i.e., credit enhancements).

The simplest way to understand the concept of securitisation is to take an example. Let us say, I want to own a car to run it for hire. I could take a loan with which I could buy the car. The loan is my obligation and the car my asset, and both are affected by my other assets and other obligations. This is the case of simple financing.

On the other hand, if I were to analytically envisage the car, my asset in the instant

case, as claim to value over a period of time, that is, ability to generate a series of hire rentals over a period of time, I might sell a part of the cash flow by way of hire rentals for a stipulated time and thereby raise enough money to buy the car. The investor is happier now because he has a claim for a cash flow which is not affected by my other obligation; I am happier because I have the cake and eat it also and also because the obligation to repay the financier is taken care of by the cash flows from the car itself.

In this way, in securitization the loan itself is not sold to another lender but rather a security instrument is created backed by the principal and interest payments on the loan. Through this means the beneficial ownership of the loan is effectively transferred. The purchaser of the loan assumes the risk in the event of loan default, and the lender removes the risk from the balance sheet. Once securitisation has taken place, then the securities themselves can be treated in a secondary market. To the borrowers, securitisation does not matter for what they get is loan and to them it makes no difference as to who holds the claim.

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

Question 2

Distinguish between the following:

- (a) Average Accounting Rate of Return and Internal Rate of Return.
 - (b) Spot contract and Forward contract.
 - (c) Leasing and Hire purchase.
 - (d) Assets Backed Securitization (ABS) and Future Flow Securitization (FFS).
- (4 marks each)

OR (Alternative question to Q. No. 2)

Question 2A

- (i) Explain the categories of Private Equity Investment.
 - (ii) Explain the conditions to be fulfilled to start the trading of derivatives on stock exchange platform.
 - (iii) What are the skills that forex manager must have for effective management of forex transactions?
 - (iv) The capital structure is significant for the overall ranking of the firm in the industry group. Discuss.
- (4 marks each)

Answer 2(a)

'Average accounting rate of return' and 'internal rate of return'

The accounting rate of return or average rate of return (ARR) method is a non discounted technique of evaluating capital budgeting decisions. It is based on accounting information rather than cash flows. For the computation of accounting rate of return, the following formula is used:

$$\text{Average Accounting rate of return} = \frac{\text{Average annual profits after taxes}}{\text{Average capital invested}} \times 100$$

The internal rate of return (IRR) is a discounted cash flow technique used to evaluate capital budgeting decision. Unlike ARR method, the IRR method considers time value of money by discounting the cash streams. IRR is the discount rate which equates the aggregate present value of net cash inflows with aggregate present value of cash outflows of a project. In other words, it is the rate which gives the project Net Present Value (NPV) of zero. The distinction between the two can be on the following grounds:

- (i) Cash flows v/s Net Profit : IRR takes into account the cash flows whereas the ARR takes into account the average net profit over the years.
- (ii) Time value of money : IRR takes into account the time value of money whereas the ARR does not.
- (iii) Decision making under IRR is a scientific method and a good measure of the rate of return, whereas ARR is not.
- (iv) Denominator : Under IRR, cash flows are matched with original investment, whereas under ARR, average investment is taken into account.

Answer 2(b)

Spot Contract' and 'Forward Contract

- In a spot contract, at least one component, i.e. either the price or the goods/services is tendered at the time of the contract. In a forward contract, both the components are exchanged at a specified future date.
- In a spot contract, both the parties transact on the basis of their present capability. The buyer purchases according to his ability to pay for the goods or services and the seller sells according to his present ability to deliver the goods or services. In a forward contract, a leveraging of capabilities is involved. Since no down payment is involved, the buyer might contract to buy a larger number of goods or services, expecting to derive some benefits from the perceived price differential between the spot price and the likely price at the time of maturity of the forward contract. Also the seller, feeling that a larger number of goods shall be available at the contracted price at the time of maturity, agrees to sell a far larger number of goods.
- In a spot contract, execution of the contract is more or less certain because both the components, i.e. money and goods are available. Even through the transaction does not pass through a regulated delivery and payment mechanism yet the chances of default are very less. The problems of payment and delivery get magnified in the case of a forward contract.

Answer 2(c)

Difference between Leasing and Hire Purchase

<i>Basis</i>	<i>Leasing</i>	<i>Hire Purchase</i>
Meaning	Leasing is an agreement where one party buys the asset and allows the other party to use it by paying	The deal in which one party can use the assets of the other party for the payment of equal monthly

	consideration over a specified period is known as leasing.	instalments is known as hire purchase.
Claim of Depreciation	The lessee cannot claim depreciation.	The hirer is entitled to claim depreciation
Tax Benefit	The entire lease rental is a tax-deductible expense for the lessee.	Only the interest component of the hire purchase instalment is a tax-deductible expense for the hirer.
Salvage Value	The lessee, not being the owner of the asset, does not enjoy the salvage value of the asset.	The hirer, being the owner of the asset, enjoys the salvage value of the asset.

Answer 2(d)

Assets backed securitization (ABS) and Future Flow securitization (FFS)

Asset backed securitisation (ABS)- Securitisation of receivables which are "existing" i.e., the obligation of the Obligor to make payments is not dependent on further action or performance by the Originator.

E.g., Mortgage-backed receivables, auto receivables securitisation and hire purchase rental receivables.

Future Flow securitisation (FFS) - Securitisation of receivables which are to be generated in the "future" i.e. the obligation of the Obligor to make payments depends on further substantial performance by the Originator. E.g. typical FFS receivables are trade receivable (long term), electricity receivables and toll road receivables.

Answer 2A(i)

Categories of Private Equity Investment

Leveraged Buyout (LBO) : This refers to a strategy of making equity investments as part of a transaction in which a company, business unit or business assets is acquired from the current shareholders typically with the use of financial leverage. The companies involved in these transactions are typically more mature and generate operating cash flows.

Venture Capital : It is a broad sub-category of private equity that refers to equity investments made, typically in less mature companies, for the launch, early development, or expansion of a business.

Growth Capital : This refers to equity investments, most often minority investments, in companies that are looking for capital to expand or restructure operations, enter new markets or finance a major acquisition without a change of control of the business.

Answer 2A(ii)

Pre-requisites to start the trading of derivatives on stock exchange platform

1. *Strong and healthy capital market* : An efficient, transparent and fair capital market with strong settlement cycles helps in building an efficient derivatives market.

2. *Clearing Corporation and Settlement Guarantee* : Existence of a common clearing corporation providing settlement guarantee as well as cross margining is essential for speedy settlement as well as for risk minimization. This is particularly important in the case of derivatives where there are often no securities to be delivered and the settlement is arranged in the form of cash difference.
3. *Reliable wide area telecommunication network* : Since derivative trading must be introduced on nation-wide basis so as to provide equal opportunities for hedging to the investor population throughout the country, existing and reliable telecommunications network along with existence of proven automated trading systems is extremely important.
4. *Risk containment mechanism* : There should exist a strong and disciplined margining system in the form of daily and mark to market margins, which provide a cover for exposure along with price risk and notional loss in case of default in settling outstanding positions, thereby minimizing market risk.

Answer 2A(iii)

Skills a forex manager should possess

- (a) *Awareness of historical development of world trade* : The forex manager must have a fair idea of as to how the world trade has reached its present status. The shifting power alliances, emergence and decline of economic superpowers, present political situations, trade patterns etc. should be known to him. This knowledge base enables the manager to view the current situation in proper perspective.
- (b) *Ability to forecast future trends* : The forex manager must be in a position to derive an accurate forecast of the future trends in international trade flows and exchange rate patterns. This forecast helps the manager to prepare his forex budget.
- (c) *Comparative Analysis skills* : The forex manager should be able to carry out a comparative analysis of costs of domestic and imported raw materials, price of local sales and export sales, shipping rates, insurance costs etc. in order to determine whether it is expedient to produce locally or to outsource.
- (d) *In-depth knowledge of forex market* : The forex manager is expected to have in-depth knowledge of functioning of foreign exchange markets, their rules and regulations, the size of their operation, the profile of active currencies, strength and weakness of the domestic currency etc. in order to achieve better pricing of deals.
- (e) *Knowledge of interest rates*: Since interest rates have a direct bearing upon exchange values, awareness about domestic and international interest rates enables the forex manager to form an accurate opinion about the forward premia.
- (f) *Willingness to undertake risk* : Armed with the knowledge and awareness about international financial and trade patterns, currency positions and interest rates, the forex manager should have the ability to undertake reasonable level of risks with a view to profit from forex exposures.
- (g) *Hedging strategies* : The forex manager should be in a position to hedge his positions to the best extent possible. To achieve this, a sense of timing is essential in the background of ever-changing world of exchange values.

Answer 2A(iv)**Significance of capital structure for overall ranking of the firm**

1. *It reflects the firm's strategy* : The capital structure reflects the overall strategy of the firm. The strategy includes the pace of growth of the firm. In case the firm wants to grow at a faster pace, it would be required to incorporate debt in its capital structure to a greater extent. Further, in case of growth through acquisitions or the inorganic mode of growth as it is called, the firm would find that financial leverage is an important tool in funding the acquisitions.
2. *It is an indicator of the risk profile of the firm* : One can get a reasonably accurate broad idea about the risk profile of the firm from its capital structure. If the debt component in the capital structure is predominant, the fixed interest cost of the firm increases thereby increasing its risk. If the firm has no long term debt in its capital structure, it means that either it is risk averse or it has cost of equity capital or cost of retained earnings less than the cost of debt.
3. *It acts as a tax management tool* : The capital structure acts as a tax management tool also. Since the interest on borrowings is tax deductible, a firm having healthy growth in operating profits would find it worthwhile to incorporate debt in the capital structure in a greater measure.
4. *It helps to brighten the image of the firm* : A firm can build on the retained earnings component of the capital structure by issuing equity capital at a premium to a spread out base of small investors. Such an act has two benefits. On the one hand, it helps the firm to improve its image in the eyes of the investors and on the other hand, it reduces chances of hostile take-over of the firm.

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

Question 3

- (a) *Neel Ltd. has supplied the following data:*

Operating Leverage 2.5; Financial Leverage 3; EPS ₹30; market price per share ₹225; and capital 20,000 shares. It is proposed to raise a loan of ₹50,00,000 @ 18% p.a. for expansion. After expansion, sales will increase by 25% and fixed cost ₹3,00,000.

You are required to work out the market price per share (MPS) after expansion, assuming tax rate @ 50%. (4 marks)

- (b) *Sanman Mutual Fund has the following assets in scheme stargrowth at the close of business as on 31st March, 2020 :*

Company	No. of Shares	Market Price per share (₹)
A Ltd.	20,000	25
B Ltd.	30,000	350
C Ltd.	38,000	290
D Ltd.	50,000	400

The total number of units of the scheme stargrowth are 10 lakh. The scheme stargrowth has accrued expenses of ₹2,00,000 and other liabilities of ₹2,50,000.

Calculate the NAV per unit of the scheme stargrowth. (4 marks)

- (c) The quarterly production of a company's product which has a steady market of 20,000 units. Each unit of a product requires 0.5 kg of raw material at a cost of ₹20 per kg. The cost of placing an order for raw material is ₹100 and inventory carrying cost is 10%.

You are required to calculate :

- (i) Economic order quantity
(ii) Number of order placed in a year. (4 marks)

- (d) The following information is available of a concern. Calculate Economic Value Added (EVA) :

(i) 12% Debt capital	₹2,000 crores
(ii) Equity capital	₹500 crores
(iii) Reserve and Surplus	₹7,500 crores
(iv) Risk Free rate	9%
(v) Beta Factor	1.05
(vi) Market rate of return	19%
(vii) Net operating profit after tax	2,100 crores
(viii) Tax rate	30%

(4 marks)

OR (Alternative question to Q. No. 3)

Question 3A

- (i) A bank is analysing the receivables of Rolly Ltd. in order to identify acceptable collateral for a short term loan. The company's credit policy is 2/10 net 30. The bank lends 75% of accounts where customers are not currently overdue and where the average payment period does not exceed 10 days past the net period.

A schedule of Rolly Ltd. receivables has been prepared. How much will the bank lend on a pledge of receivables, if the bank uses a 10% allowance for cash discount and returns?

Account No.	Amount (₹)	Days of Outstanding	Average Payment Period (in days)
70	50,000	12	20
90	18,000	45	60
110	23,000	22	24
111	4,600	9	10
141	36,000	50	45
161	58,000	16	10
173	28,000	27	48
	2,17,600		

(4 marks)

- (ii) In the context of CAPM, what is the expected return of security 'j' if it has the following characteristics and if the following information holds for the market portfolio ?

Standard Deviation, Security j	0.20
Standard Deviation, market portfolio	0.15
Expected Return, market portfolio	0.13
Co-relation between possible returns for security j and the market portfolio	0.80
Risk free Rate of Return	0.07

You are required to comment :

- (a) What would happen to the required return if the standard deviation for the security were higher ?
- (b) What would happen if the correlation co-efficient were less ?
- (c) What is the functional relationship between the required return for a security and market risk ? (4 marks)
- (iii) A rice trader has planned to sell 22,000 kgs. of rice after 3 months from now. The spot price of the rice is ₹60 per kg and 3 months future on the same is trading at ₹59 per kg. Size of the contract is 1,000 kg. The price is expected to fall as low as ₹56 per kg. 3 months hence.
- (a) What the trader can do to mitigate its risk of reduced profit ?
- (b) If he decides to make use of future market, what would be the effective realised price for its sale when after 3 months spot price is ₹57 per kg and future contract price for 3 months is ₹58 per kg ? (4 marks)
- (iv) Calculate the level of earnings before interest and tax (EBIT) at which the EPS indifference point between the following financing alternative will occur.
- (a) Equity share capital of ₹ 12,00,000 and 12% debentures of ₹ 8,00,000.

Or

- (b) Equity share capital of ₹ 8,00,000, 14% preference share capital of ₹4,00,000 and 12% debentures of ₹ 8,00,000.

Assume corporate tax is 35% and par value of equity share, preference shares and debentures are ₹ 100 in each case. (4 marks)

Answer 3(a)

$$\begin{aligned} \text{Earnings after tax (EAT)} &= \text{EPS} \times \text{No. of shares} \\ &= 30 \times 20,000 = 6,00,000 \end{aligned}$$

$$\begin{aligned} \text{PE ratio} &= \text{Market value per share} / \text{EPS} \\ &= 225 / 30 = 7.5 \end{aligned}$$

$$\text{EAT} = \text{EBT} - \text{Tax}$$

As the rate of tax is 50%, the EBT will be Rs. 12,00,000.

$$DFL = EBIT/EBT$$

$$EBIT = DFL \times EBT$$

$$EBIT = 3 \times 12,00,000 = 36,00,000$$

$$EBT = EBIT - \text{Interest} = 36,00,000 - 24,00,000 = 12,00,000$$

$$DOL = \text{Contribution} / EBIT$$

$$\text{Contribution} = DOL \times EBIT = 2.5 \times 36,00,000 = 90,00,000$$

$$\text{Fixed Cost} = \text{Contribution} - EBIT$$

$$= 90,00,000 - 36,00,000 = 54,00,000$$

Income Statement:

<i>Rs. in Lakhs</i>	
Contribution	90
Less : Fixed cost	54
EBIT	36
Less : Interest	24
EBT	12
Less : Tax	6
EAT	6

After 25% increase in sales, Income Statement will be as follows:

<i>Rs. in Lakhs</i>	
Contribution	112.50
Less : Fixed cost	57
EBIT	55.50
Less : Interest (24 +9) Lakhs {Note 1}	33
EBT	22.50
Less : Tax	11.25
EAT	11.25

$$\text{EPS} = \text{Rs. } 11,25,000 / 20,000 \text{ shares} = \text{Rs. } 56.25$$

$$\text{Market price per share} = 56.25 \times 7.5 = \text{Rs. } 421.875$$

Note 1: Interest on borrowing will be $18\% \times \text{Rs. } 50,00,000 = \text{Rs. } 9,00,000$

Answer 3(b)

Company	No. of Shares	Market Price per Share (Rs.)	Amount (Rs. Lakhs)
A Ltd.	20,000	25	5.00
B Ltd.	30,000	350	105.00
C Ltd.	38,000	290	110.20
D Ltd.	50,000	400	200.00
		Total	420.20
		Less : Accrued Expenses	2.00
		Other Liabilities	2.50
		Total Value	415.70
		No. of Units	10,00,000
		NAV per Unit (415.70/10)	41.57

Answer 3(c)

$$(a) \text{ Economic order Quantity} = \sqrt{2 \times U \times O / C}$$

$$U = \text{Annual Usage} = 20,000 \times 0.5 \times 4 = 40,000 \text{ Kg.}$$

$$O = \text{Ordering Cost per Order} = 100$$

$$C = \text{Carrying Cost} = 20 \times 10\% = 2$$

$$\text{EOQ} = \sqrt{2 \times 40,000 \times 100 / 2}$$

$$= 2,000 \text{ Kg.}$$

$$(b) \text{ No. of order placed in a year} = \text{Annual usage} / \text{EOQ}$$

$$= 40,000 / 2000$$

$$= 20 \text{ Orders}$$

Answer 3(d)

$$\text{Post-tax cost of Debt} = 12\% (1 - 0.30) = 8.40\%$$

Cost of Equity (According to capital Asset Pricing Model (CAPM):

$$\text{Risk-free rate} + \text{Beta (Market Rate - Risk Free Rate)}$$

$$= 9\% + 1.05(19 - 9) = 19.5\%$$

$$\begin{aligned} \text{WACC} &= \frac{(\text{Equity} \times \text{Cost of Equity}) + (\text{Debt} \times \text{Cost of Debt})}{\text{Equity} + \text{Debt}} \\ &= \frac{(500 + 7,500) 19.5\% + (2,000) 8.40\%}{500 + 7,500 + 2,000} \\ &= 17.28\% \\ \text{EVA} &= \text{NOPAT} - (\text{WACC} \times \text{Average Capital Employed}) \\ &= 2,100 - (17.28\% \times 10,000) \\ &= \text{Rs. 372 crores} \end{aligned}$$

Answer 3A(i)**Statement showing loan amount on pledge of receivables**

Account No.	Amount	Allowance for cash Net amount discount and returns (10% x Col.2)	Net amount (Col. 2 - Col.3)	Loan Amount @ 75% of Col. 4
1	2	3	4	5
70	₹50,000	₹5,000	₹45,000	₹33,750
110	23,000	2,300	20,700	15,525
111	4,600	460	4,140	3,105
161	58,000	5,800	52,200	39,150
Total Loan Amount				91,530

Working Notes:

- Account number 90 and 141 are currently over due by 15 and 20 days respectively, credit policy being 2/10 net 30 days. Also these accounts have average payment period of more than 40 days i.e., 10 days more than credit period allowed. Loan is not available on these accounts as per short-term loan policy of bank.
- Account no. 173, though not currently overdue but has average payment period of more than 40 days. Hence, this account is not eligible for bank loan.

Answer 3A(ii)**Expected Return:**

$$R_j = R_f + \frac{R_m - R_f}{\sigma_m} (\rho_{jm} \sigma_j \sigma_m)$$

Given

Standard Deviation, Security $j = \sigma_j$	0.20
Standard Deviation, Market Portfolio = σ_m	0.15
Expected return, Market portfolio = R_m	0.13
Correlation between possible returns for security j and the market portfolio = ρ_{jm}	0.80
Risk Free Rate of Return = R_f	0.07

Substituting the above values

$$R_j = 0.07 + 0.06 / (0.15 \times 0.15) \times (0.8 \times 0.2 \times 0.15)$$

$$= 13.4\%$$

- (a) If σ_j were higher, the expected return would increase.
 (b) If ρ_{jm} were lower, the expected return would decrease.
 (c) If σ_m were higher, the expected return would increase and if σ_m were lower, the expected return would decrease. Therefore the required return for a security is directly proportional to market risk.

Answer 3A(iii)

In order to hedge its position, trader would go short on future at current future price of Rs. 59 per kg. This will help the trader to realize sure Rs. 59 per kg after 3 months.

a) Quantity of Rice to be hedged	22,000 kg.
b) Contract size	1,000 kg
c) No. of contracts to be sold (a/b)	22
d) Future price	Rs. 59 per kg.
e) Exposure in the future market	Rs. 12,98,000

After 3 months, trader would cancel its position in the future by buying a future contract of same quantity and will sell Rice in the spot market and position shall be as follows:

a) Price of future contract	Rs. 58 per kg.
b) Amount bought (22,000 x 58)	Rs. 12,76,000
c) Gain/(loss) on future position (12,98,000 – 12,76,000)	Rs. 22,000
d) Spot price	Rs. 57 per kg.
e) Amount realized by selling in the spot market (22,000 x 57)	Rs. 12,54,000
f) Effective selling amount (c + e)	Rs. 12,76,000
g) Effective selling price (12,76,000/ 22,000)	Rs. 58 per kg.

Answer 3A(iv)

$$= \frac{(\text{EBIT} - \text{Interest})(1-t)}{\text{No. of Equity Shares}} = \frac{(\text{EBIT} - \text{Interest})(1-t) - \text{Preference Dividend}}{\text{No. of Equity Shares}}$$

$$= \frac{(\text{EBIT} - 96,000)(1 - 0.35)}{12,000} = \frac{(\text{EBIT} - 96,000)(1 - 0.35) - 56,000}{8,000}$$

$$= \frac{2(0.65 \text{ EBIT} - 62,400)(1 - 0.35)}{3}$$

$$2(0.65 \text{ EBIT} - 62,400) = 3(0.65 \text{ EBIT} - 1,18,400)$$

$$1.3 \text{ EBIT} - 1,24,800 = 1.95 \text{ EBIT} - 3,55,200$$

$$1.95 \text{ EBIT} - 1.3 \text{ EBIT} = 3,55,200 - 1,24,800$$

$$0.65 \text{ EBIT} = 2,30,400$$

$$\text{EBIT} = 3,54,462$$

Question 4

- (a) A Company is considering two financial alternatives to Finance its expansion plan to 1.00 crore.

First alternative: by issue of equity shares @ 12.50.

Second alternative: by issue 14% debentures.

Tax to be considered at 40%.

Its present capital structure consists of equity shares of 20,00,000 (face value 10) and 8% debentures of 50,00,000.

Expected price earning ratio in case of:

First alternative is – 14

Second alternative is – 12.

You are required to calculate the indifference point at which market price of share under both alternatives will be same. (4 marks)

- (b) A group of customer wants to enter into a contract with you to buy goods worth ₹20 lakh, deliveries to be made in four equal quarterly instalments. Sales price ₹200, variable cost ₹100. Additional expenditure ₹10,000 p.a. 15% of amount of bills would be received after 30 days, 25% after 60 days, 40% after 90 days and 20% after 100 days.

Assuming an opportunity cost of 20% of funds locked up in account receivables, will it be desirable to accept the new proposals? Assume 360 days in a year.

(4 marks)

- (c) Companies U and L are identical in every respect, except that U is unlevered while L is levered. Company L has 20 lakh of 8% debentures outstanding.

Assume that:

- (i) All the MM assumptions are met.
- (ii) The tax rate is 50%.
- (iii) EBIT is ₹ 6.00 lakh.
- (iv) Equity capitalisation rate for company U is 10%.

What would be the value for each firm according to MM's approach? (4 marks)

- (d) Leading and Lagging technique is a general protection measure for Foreign Exchange Risk Exposure Management. Explain. (4 marks)

Answer 4(a)

Existing number of equity shares = 2,00,000 (Rs. 20,00,000/ Rs.10)

In case of plan I, no. of new equity shares to be issued = 1,00,00,000 / 12.50 = 8,00,000 shares

Therefore, total no. of equity shares now become = 2,00,000 + 8,00,000 = 10,00,000

Existing interest = 8% x 50,00,000 = 4,00,000

Additional interest if funds are raised by debt in Plan II = 1,00,00,000 x 14% = 14,00,000

Total interest in this case will be Rs. 14,00,000 + 4,00,000 = 18,00,000

Value of share = EPS X P/E Ratio

Let EBIT be Rs. X.

Value of share under Plan I = $(X - 4,00,000) \times (1 - 0.40) \times 14 / 10,00,000$ ----- (1)

Value of share under Plan II = $(X - 18,00,000) \times (1 - 0.40) \times 12 / 2,00,000$ ----- (2)

From equation (1) & (2),

$(X - 4,00,000) \times (1 - 0.40) \times 14 / 10,00,000 = (X - 18,00,000) \times (1 - 0.40) \times 12 / 2,00,000$

$8.4 X - 33,60,000 = 36 X - 6,48,00,000$

$X = 22,26,086.96$

Hence, Indifference level of EBIT = Rs. 22,26,086.96

Answer 4(b)

Calculation of Average collection period:

Days (X)	% of Bill Collected (W)	XW
30	0.15	4.5
60	0.25	15.0
90	0.40	36.0
100	0.20	20.0
Average collection period		75.5

Average Collection Period	=	75.5 days
Sales (in Rupees) (A)	=	20,00,000 Rs.
Sales in Units		10,000
Variable Cost@ Rs. 100	=	10,00,000 Rs.
Additional Expenses	=	10,000 Rs.
Opportunity Cost (20,00,000 x 20% x 75.5) / 360	=	83,889 Rs.
Total Cost (B)		10,93,889
Profit (A-B)		9,06,111 Rs.

Decision : Since after entering in to a contract in to a contract with a new group there is a profit. Hence the deal should be accepted.

Answer 4(c)

Value of Unlevered Firm

$$V_{uL} = \frac{EBIT (1 - \text{tax rate})}{K_e}$$

$$V_{uL} = \frac{6,00,000 (1 - 0.50)}{0.10}$$

$$V_{uL} = 30,00,000$$

Value of Levered Firm:

$$\begin{aligned} V_L &= V_{uL} + \text{Borrowed Funds} \times \text{Tax rate} \\ &= 30,00,000 + 20,00,000 (0.50) \\ &= 40,00,000 \end{aligned}$$

Answer 4(d)

Leading and Lagging technique

This technique is used by subsidiaries for optimizing cash flow movements by adjusting the timing of payments to determine expectations about future currency movements. MNCs accelerate (lead) or delay (lag) the timing of foreign currency payments through adjustment of the credit terms extended by one unit to another. The technique helps to reduce foreign exchange exposure or to increase available working capital. Firms accelerate payments of hard currency payables and delay payments of soft currency payables in order to reduce foreign exchange exposure. A MNC in the USA has subsidiaries all over the world. A subsidiary in India purchases its supplies from another subsidiary in Japan. If the Indian subsidiary expects the rupee to fall against the yen, then it shall be the objective of that firm to accelerate the timing of its payment before the rupee depreciates.

Such a strategy is called Leading. On the other hand, if the Indian subsidiary expects the rupee to rise against the yen, then it shall be the objective of that firm to delay the

timing of its payment before the rupee appreciates. Such a strategy is called Lagging. MNCs should be aware of the government restrictions in such countries before availing of such strategies. Leading and lagging involve the movement of cash inflows and outflows, forward and backward in time, so as to allow netting and achieve various goals.

Regulations governing Leading and Lagging are subject to frequent changes and vary from country to country. So, the global finance manager has to keep himself abreast of such changed regulations before he can successfully employ this technique.

Question 5

(a) The following results are expected by XYZ Ltd. by quarters next year :

Quarter	(Figures in '000)			
	1	2	3	4
Sales	7,500	10,500	18,000	10,500
Cash payments :				
Production costs	7,000	10,000	8,000	8,500
Selling, adm. and other costs	1,000	2,000	2,900	1,600
Purchases of plant and other fixed assets	100	1,000	2,100	2,100

Debtors at the end of a quarter are one-third of sales for the quarter. The opening balance of debtors is ₹30,00,000. Cash on hand at the beginning of the year is ₹6,50,000 and the desired minimum balance is ₹5,00,000. Borrowings are made at the beginning of quarters in which the need will occur in multiples of ₹10,000 and are repaid at the end of quarters. Interest charges may be ignored. You are required to prepare:

- (i) A cash budget by quarters for the year, and
(ii) State the amount of loan outstanding at the end of the year. (8 marks)

(b) Excel Operations Ltd. is proposing to replace its fully depreciated machine by a new one costing ₹1,50,000. The current market value of old machine is ₹20,000 and the salvage value after six years is zero. The post-tax salvage value of the new machine after six years is expected to be ₹16,000. With the use of the new machine, sales are expected to increase by ₹20,000 per annum and operating expenses to decrease by ₹12,000 per annum. If the company follows a 30% WDV depreciation policy, has a marginal cost of capital of 12% and attracts a marginal tax rate of 30%, should the old machine be replaced or not based on six years calculations?

P.V. factors @ 12% for six years are as follows:

Year	1	2	3	4	5	6
P.V. Factors	0.8929	0.7972	0.7118	0.6355	0.5674	0.5066

(8 marks)

Answer 5(a)**Quarterly Cash Budget**

(Fig. in 000')

	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Receipts:				
Op. Cash in hand	650	550	500	500
Cash Sales (2/3)	5,000	7,000	12,000	7,000
Credit Sales (1/3)	3,000	2,500	3,500	6,000
Total Receipts (A)	8.650	10.050	16.000	13,500
Payments:				
- Production cost	7,000	10.000	8,000	8,500
- Selling, adm. and other costs	1,000	2,000	2,900	1,600
- Purchases of plant and other fixed assets	100	1,000	2,100	2,100
Total Payments (B)	8,100	13,000	13,000	12,200
Balance (A -B)	550	(2,950)	3,000	1,300
Cash in hand	550	500	500	500
Borrowings	-----	3,450	-----	-----
Repayments	-----	-----	2,500	800

(b) Loan outstanding at the end of 4th quarter is $3,450 - 2,500 - 800$
 $= 150$

Answer 5(b)

Year	(0)	(1)	(2)	(3)	(4)	(5)	(6)
A. Initial Investment (1.50 L- 0.20 L)	1,30,000						
B. Increase in sales		20,000	20,000	20,000	20,000	20,000	20,000
C. Saving in operating costs		12,000	12,000	12,000	12,000	12,000	12,000
D. Increase in Depreciation		45,000	31,500	22,050	15,435	10,805	7,563
E. Increase in PBT (B+C-D)		-13,000	500	9,950	16,565	21,195	24,437
F. Increase in Tax (E*0.30)		-3,900	150	2,985	4,970	6,359	7,331
G. Increase in PAT(E-F)		-9,100	350	6,965	11,595	14,836	17,106
H. Salvage Value							
I. Cash Flow (-A+G+D+H)	-1,30,000	35,900	31,850	29,015	27,030	25,641	40,669
J. Discounting Factor @ 12%	1.0	0.8929	0.7972	0.7118	0.6355	0.5674	0.5066
K. PV of net cash flow	-1,30,000	32,055	25,391	20,653	17,178	14,492	20,603
NPV							372

AS NPV is positive, the machine should be replaced.

Question 6

Fortune Ltd. plans to manufacture and sell 400 units of electronic appliances per month at a price of ₹600 each. The ratios of cost to selling price are as follows:

Raw Material	30%
Packing Material	10%
Direct Labour	15%
Direct Expenses	5%

Fixed overhead are estimated at ₹4,32,000 per annum

The following norms are maintained for inventory management:

Raw Material	30 days
Packing Material	15 days
Finished goods	150 units
Work-in-progress	7 days

Other details are:

- Credit sales represent 80% of total sales and dealers enjoy 30 days credit. Debtors may be calculated on sales basis.
- Creditors allow 21 working days credit for payment.
- Lag in payment of overhead and expenses are 15 working days.
- Cash requirement to be 10% of total current assets (excluding cash balance).
- Working days in a year are taken as 300 days.
- Degree of completion is 100% for Raw Material and 50% of other expenses.

Calculate the net working capital required and the maximum permissible bank finance under second method of financing as per Tandon Committee norms. (16 marks)

Answer 6**Calculation of total cost of (400 x 12) 4800 units**

Particulars	Workings	Amount (Rs.)
Raw material	30% x Rs. 600 x 4800 units	8,64,000
Packing material	10% x Rs. 600 x 4800 units	2,88,000
Direct labour	15% x Rs. 600 x 4800 units	4,32,000
Direct expenses	5% x Rs. 600 x 4800 units	1,44,000
Fixed overhead		4,32,000
Total cost		21,60,000
Total sales	(4800 x Rs. 600)	28,80,000
Profit		7,20,000

Current Assets:

<i>Particulars</i>	<i>Amount (Rs.)</i>	<i>Amount (Rs.)</i>
Raw Material Rs. 8,64,000 x 30/300		86,400
Packing material Rs. 2,88,000 x 15/300		14,400
Work in progress:		
Raw material (100%)		
8,64,000 x 7/300	20,160	
Direct Labour (50%)		
4,32,000 x 7/300 x 50%	5,040	
Direct Expenses (50%)		
1,44,000 x 7/300 x 50%	1,680	
Fixed overhead (50%)		
4,32,000 x 7/300 x 50%	5,040	31,920
Finished goods:		
21,60,000 x 150/4800		67,500
Debtors		
4800 x 600 x 80% x 30/300		2,30,400
Total Current Assets (without cash)		4,30,620
Cash Balance		43,062
Total Current Assets (A)		4,73,682

Current Liabilities:

<i>Particulars</i>	<i>Workings</i>	<i>Amount (Rs.)</i>
Creditors for Raw Material	8,64,000 x 21/300	60,480
Creditors for packing material	2,88,000 x 21/300	20,160
Direct Expenses	1,44,000 x 15/300	7,200
Fixed overhead	4,32,000 x 15/300	21,600
Total Current liabilities (B)		1,09,440
Net working Capital (A) –(B)		3,64,242

Maximum permissible bank finance under second method of financing as per Tandon Committee norms.

	<i>Rs.</i>
Total Current Assets	4,73,682
Less : 25% of current assets	(1,18,421)
	3,55,261
Less : Current liabilities	(1,09,440)
Maximum permissible bank borrowings	2,45,821

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	0.4698	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	0.3188	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

TABLE - 2 : PRESENT VALUE OF AN ANNUITY 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	1.8594	2.7232	3.5480	4.3295	5.0737	5.7864	6.4632	7.1078	7.7217	8.3064	8.8633	9.3936	9.8986	10.3797
6%	0.9434	1.8334	2.6730	3.4651	4.2124	4.9173	5.5824	6.2088	6.8017	7.3601	7.8869	8.3836	8.8527	9.2950	9.7122
7%	0.9346	1.8080	2.6243	3.3872	4.1002	4.7665	5.3893	5.9713	6.5152	7.0236	7.4987	7.9427	8.3577	8.7455	9.1079
8%	0.9259	1.7833	2.5771	3.3121	3.9927	4.6229	5.2064	5.7466	6.2469	6.7101	7.1390	7.5361	7.9038	8.2442	8.5595
9%	0.9174	1.7591	2.5313	3.2397	3.8897	4.4859	5.0330	5.5348	5.9952	6.4177	6.8052	7.1607	7.4869	7.7862	8.0607
10%	0.9091	1.7355	2.4869	3.1699	3.7908	4.3553	4.8684	5.3349	5.7590	6.1446	6.4951	6.8137	7.1034	7.3687	7.6061
11%	0.9009	1.7125	2.4437	3.1024	3.6959	4.2305	4.7122	5.1461	5.5370	5.8892	6.2065	6.4924	6.7489	6.9819	7.1909
12%	0.8928	1.6901	2.4019	3.0374	3.6048	4.1114	4.5638	4.9676	5.3282	5.6502	5.9377	6.1944	6.4235	6.6282	6.8109
13%	0.8850	1.6681	2.3612	2.9745	3.5172	3.9975	4.4226	4.7988	5.1317	5.4262	5.6869	5.9176	6.1218	6.3025	6.4624
14%	0.8772	1.6467	2.3216	2.9137	3.4331	3.8887	4.2883	4.6389	4.9484	5.2161	5.4527	5.6603	5.8424	6.0021	6.1422
15%	0.8696	1.6257	2.2832	2.8550	3.3522	3.7845	4.1604	4.4873	4.7716	5.0188	5.2337	5.4206	5.5831	5.7245	5.8474
16%	0.8621	1.6052	2.2459	2.7982	3.2743	3.6947	4.0396	4.3436	4.6065	4.8332	5.0286	5.1971	5.3423	5.4675	5.5755
17%	0.8547	1.5852	2.2086	2.7432	3.1993	3.5992	3.9224	4.2072	4.4506	4.6586	4.8364	4.9884	5.1183	5.2293	5.3242
18%	0.8475	1.5656	2.1743	2.6901	3.1272	3.4976	3.8115	4.0776	4.3030	4.4941	4.6560	4.7932	4.9095	5.0081	5.0916
19%	0.8403	1.5465	2.1399	2.6386	3.0576	3.4098	3.7057	3.9544	4.1633	4.3389	4.4865	4.6105	4.7147	4.8023	4.8759
20%	0.8333	1.5278	2.1065	2.5887	2.9908	3.3255	3.6046	3.8372	4.0310	4.1925	4.3271	4.4392	4.5327	4.6106	4.6755
21%	0.8264	1.5085	2.0739	2.5404	2.9260	3.2446	3.5079	3.7256	3.9054	4.0541	4.1769	4.2784	4.3624	4.4317	4.4890
22%	0.8197	1.4915	2.0422	2.4936	2.8638	3.1689	3.4155	3.6193	3.7863	3.9232	4.0354	4.1274	4.2028	4.2646	4.3152
23%	0.8130	1.4740	2.0114	2.4483	2.8035	3.0923	3.3270	3.5179	3.6731	3.7993	3.9018	3.9852	4.0530	4.1082	4.1530
24%	0.8065	1.4568	1.9813	2.4043	2.7454	3.0205	3.2423	3.4212	3.5655	3.6819	3.7757	3.8514	3.9124	3.9616	4.0013
25%	0.8000	1.4400	1.9520	2.3616	2.6893	2.9514	3.1611	3.3289	3.4631	3.5705	3.6564	3.7251	3.7801	3.8241	3.8593

ETHICS, GOVERNANCE AND SUSTAINABILITY

Time allowed : 3 hours

Maximum marks : 100

NOTE: Answer **ALL** Questions.

PART A

Question 1

(a) *The Regional Hospital XYZ is a major trauma centre with a large emergency department and intensive care unit (ICU). During the outbreak of a pandemic COVID-19 crisis, the ICU is filled to capacity with patients suffering from Corona Virus. The emergency department calls the ICU seeking to admit Mr. X, who was brought to the emergency room with a severe condition but potentially reversible brain injury after a car accident. One alternative is to move one of the current ICU patients to a medical unit in order to make room for Mr. X. However, the ICU staff reports that all of their patients need ventilator support, and there are no other ventilated beds available in the hospital. Another alternative is to send Mr. X to another unit in the hospital. However, given Mr. X's injuries, it is clear that this would overtax the clinical capabilities of the health care staff, who are not trained in critical care and who are already struggling to care for other patients. The final alternative is to transfer Mr. X to another health care facility. However, the Corona pandemic has overwhelmed all hospitals in the region, and there are no available ICU beds anywhere else. There is one bed available in the ICU as one of the patient dies. Now an ICU nurse named Ms. Y is admitted with severe difficulty in breathing. It is determined that she has been infected with the Corona Virus, which she may have contracted while caring for patients in the hospital's ICU. She needs immediate ventilation support, which is only available in the ICU bed.*

(i) *What is the dilemma with the Hospital ?* (5 marks)

(ii) *How should this situation be resolved ?* (5 marks)

(b) *Explain in brief :*

(i) *Shadow Director.*

(ii) *Appointment of Woman Director under Company Act, 2013.*

(iii) *Board Meeting Agenda.*

(iv) *Constitution of Stakeholders Relationship Committee.*

(v) *Ethics in Finance.*

(2 marks each)

(c) *'Risk Management is the part of the corporate strategy'. In the light of the statement discuss in brief the types of risk management.*

(5 marks)

Answer 1(a)(i)

Dilemma is a situation that requires a choice between options that are or seem equally favourable or unfavorable or mutually exclusive. By definition, an ethical dilemma involves the need to choose from among two or more morally acceptable courses of action, when one choice prevents selecting the other; or, the need to choose between equally unacceptable alternatives.

In this case study, the hospital management and doctors are in dilemma because there is only one bed with ventilator available in the hospital and there are two patients, Mr. X and Ms. Y. Saving the life of both the patients is important for the hospital management and staff as both the patients are critical and need a bed with ventilator immediately. Mr. X suffers from a serious car accident injury and Ms. Y is a victim of corona. Mr. X's condition is severe but with a potentially reversible brain injury. Ms. Y, a trained nurse in the hospital was seriously engaged in serving corona positive patients and there are chances that she has acquired this disease while serving the patients in the hospital. Her life is important for hospital and patients of the hospital.

The hospital management and doctors both are in an ethical / moral dilemma as to whom to allocate the ICU bed. But the moral duty of doctors is to save the life of both of them.

Answer 1(a)(ii)**Steps to Resolving an Ethical Dilemma**

Step I: Identify the problem

Step II: Identify the possible course of action

Step III: Considering consequences positive and negative of each action

Step IV: Analyse the action

Step V: Select the best course of action

The following steps have to be adopted by the hospital management to resolve this dilemma:

Step I: Identify the problem

- a) Mr. X, suffered from a serious car accident.
- b) Ms. Y, who is working as a nurse in the hospital has become corona positive due to Corona patients in the hospital ward.
- c) There is only one bed with ventilator available in the hospital.
- d) Both patients need bed with ventilator.

Step II: Identify the possible course of action

- a) First option is that the hospital management assigns bed to Mr. X or
- b) Second option is that the hospital management assigns bed to Ms. Y

Step III: Considering probable positive and negative consequences of each action

- a) If the hospital management decides to admit Mr. X, then his life may be saved, but there are chances that Mr. X may also become corona positive and this might increase his problem. If Ms. Y is not admitted in the hospital, this will create a dissatisfaction among other staff and they may go against the hospital management.
- b) If the hospital management admits Ms. Y, the working staff of the hospital will be happy and show their gratitude towards the hospital management. But if Mr. X is not admitted, the hospital may be blamed of being partial and taking care of its staff only.

Step IV: Analyse the action

In this situation it seems that Mr. X even after getting admission may become corona positive which will further complicate his problems.

Ms. Y is a corona positive patient and the hospital is currently treating large no. of corona patients where Ms. Y is a nurse taking care of corona patients.

Step V: Select the best course of action

In this case the most appropriate solution seems that the hospital should hire an ambulance with ventilator facility and start the treatment of Mr. X in the ambulance and send him to a suitable hospital and Ms. Y should be admitted to the hospital.

Answer 1(b)

- (i) Shadow Director is a person who is not formally appointed as a director, but in accordance with whose directions or instructions the directors of a company are accustomed to act. This is a concept adopted from English law. However, a person is not a shadow director merely because the directors act on advice given by him in a professional capacity. Shadow Director is a holder of controlling or majority stock (share) of a private firm who is not (technically) a director and does not openly participate in the firm's governance, but whose directions or instructions are routinely complied with by the employees or other directors. In the eyes of law, he or she is a *de facto* director and is held equally liable for the obligations of the firm with the other *de facto* and *de jure* directors.
- (ii) Section 149(1) of the Companies Act, 2013 and Rule 3 of Companies (Appointment and Qualification of Directors) Rules, 2014 provides that the following class of company shall appoint at least one woman director:
 - (i) every listed company;
 - (ii) every other public company having :-
 - (a) paid-up share capital of one hundred crore rupees or more; or
 - (b) turnover of three hundred crore rupees or more.

A company shall comply with the provisions within a period of six months from the date of its incorporation.

However, any intermittent vacancy of a woman director shall be filled-up by the Board at the earliest but not later than immediate next Board meeting or three months from the date of such vacancy whichever is later.

- (iii) The purpose of a board meeting agenda is to improve the effectiveness of board meetings. It is the tool the chair uses to keep boardroom discussions focused. Although each board will have an agenda that reflects specific topics of relevance to a company at that time, a number of general items will be included on most agendas. A good agenda alerts directors about issues with the board and to develop related board papers. An agenda helps the chair ensure that all issues are dealt with in an appropriate order and depth during the meeting.

The agenda is usually prepared by the chair with assistance from either the CEO, the board secretary or both. Sometimes the chair will draft the agenda and the others will review it, sometimes it is done in a meeting with all contributing and sometimes it will be drafted by an executive with the chair providing comment or revising the draft.

(iv) **Constitution of Stakeholder Relationship Committee**

According to Section- 178(5) & (6) of the Companies Act, 2013, the Board of Directors of a 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 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. The Stakeholders Relationship Committee shall consider and resolve the grievances of security holders of the company. It shall meet atleast once in a year. The Committee should consist of least three directors, with at least one being an independent director.

According to Regulation 20 of SEBI (LODR) Regulations, 2015, a committee under the Chairmanship of a non-executive director and such other members as may be decided by the Board of the listed entity shall be formed to specifically look into the redressal of grievances of shareholders, debenture holders and other security holders. This Committee shall be designated as 'Stakeholders Relationship Committee' and shall consider and resolve the grievances of the security holders of the listed entity including complaints related to transfer of shares, non- receipt of balance sheet, non-receipt of declared dividends.

(v) **Ethics in Finance**

The ethical issues in finance that companies and employees are confronted with include:

- In accounting – window dressing, misleading financial analysis.
- Related party transactions not at arm's length
- Insider trading, securities fraud leading to manipulation of the financial markets.
- Executive compensation.
- Bribery, kickbacks, over billing of expenses and facilitation payments.
- Fake reimbursements.

Answer 1(c)

Risk Management is part of the corporate strategy. It is a key management tool to safeguard the business assets for its use for the productive purposes. Risk Management is a logical and systematic process of establishing the context, identifying, analysing, evaluating, treating, monitoring and communicating risks associated with any activity, function or process, in a way that enables an organisation to minimise losses and maximise opportunities.

Type of risk management strategies are:

- **Risk acceptance**

Risk acceptance does not reduce any effects however it is still considered a strategy. This strategy is a common option when the cost of other risk management options such as avoidance or limitation may outweigh the cost of the risk itself. A company that doesn't want to spend a lot of money on avoiding risks that do not have a high possibility of occurring will use the risk acceptance strategy.

- **Risk transference**

Risk transference is the involvement of handing risk off to a willing third party. For example, numerous companies outsource certain operations such as customer service, payroll services, etc. This can be beneficial for a company if a transferred risk is not a core competency of that company. It can also be used so a company can focus more on its core competencies.

- **Risk avoidance**

Risk avoidance is the opposite of risk acceptance. It is the action that avoids any exposure to the risk whatsoever. It's important to note that risk avoidance is usually the most expensive of all risk management options.

- **Risk Limitation**

Risk limitation is the most common risk management strategy used by businesses. This strategy limits a company's exposure by taking some action. It is a strategy employing a bit of risk acceptance along with a bit of risk avoidance or an average of both. An example of risk limitation would be a company accepting that a disk drive may fail and avoiding a long period of failure by having backups.

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

Question 2

- (a) *Mr. Ramesh, new CEO of an XYZ company wants to implement the norms of corporate governance in the organizations, but most of the members of the company don't want the implementation of corporate governance in the organization. Discuss how the CEO implements the norms of Corporate Governance in the organization and what would be the consequences of implementation of corporate governance ?* (5 marks)

- (b) Write a note on the “European Corporate Governance Institute” (ECGI).
(5 marks)
- (c) ‘Independent Director represent the conscience of the investing public and also take care of public interest’. Discuss it with performance evaluation of independent directors.
(5 marks)

OR (Alternate question to Q. No. 2)

Question 2A

- (i) Public sector undertakings have also to adhere to the norms of the Corporate Governance. What are the guidelines of corporate governance for public sector enterprises, 2010?
- (ii) Discuss the Clarkson Principles of Stakeholders Management.
- (iii) Discuss the functions of Nominations and Remuneration Committee.
(5 marks each)

Answer 2(a)

Corporate Governance is needed to create a corporate culture of transparency, accountability and disclosure. It refers to compliance with all the moral & ethical values, legal framework and voluntarily adopted practices.

- (a) *Corporate Performance*: Improved governance structures and processes ensure quality decision-making, encourage effective succession planning for senior management and enhance the long-term prosperity of companies, independent of the type of company and its sources of finance. This can be linked with improved corporate performance- either in terms of share price or profitability.
- (b) *Enhanced Investor Trust*: Investors consider corporate governance as important as financial performance when evaluating companies for investment. Investors who are provided with high levels of disclosure and transparency are likely to invest openly in those companies.
- (c) *Better Access to Global Market*: Good corporate governance systems attracts investment from global investors, which subsequently leads to greater efficiencies in the financial sector.
- (d) *Combating Corruption*: Companies that are transparent, and have sound system that provide full disclosure of accounting and auditing procedures, allow transparency in all business transactions, provide environment where corruption would certainly fade out. Corporate Governance enables a corporation to compete more efficiently and prevent fraud and malpractices within the organization.
- (e) *Easy Finance from Institutions*: Several structural changes like increased role of financial intermediaries and institutional investors, size of the enterprises, investment choices available to investors, increased competition, and increased risk exposure have made monitoring the use of capital more complex thereby increasing the need of Good Corporate Governance. Evidences indicate that well-governed companies receive higher market valuations. The credit worthiness of a company can be trusted on the basis of corporate governance practiced in the company.

- (f) *Enhancing Enterprise Valuation* : Improved management accountability and operational transparency fulfil investors' expectations and confidence on management and corporations, and in return, increase the value of corporations.
- (g) *Reduced Risk of Corporate Crisis and Scandals* : Effective Corporate Governance ensures efficient risk mitigation system in place. A transparent and accountable system makes the Board of a company aware of the majority of the risks involved in a particular strategy, thereby, placing various control systems in place to facilitate the monitoring of the related issues.
- (h) *Accountability* : Investor relations are essential part of good corporate governance. Investors directly/ indirectly entrust management of the company to create enhanced value for their investment. The company is hence obliged to make timely disclosures on regular basis to all its shareholders in order to maintain good investor relation. Good Corporate Governance practices create the environment whereby Boards cannot ignore their accountability to these stakeholders.

Answer 2(b)

The European Corporate Governance Institute (ECGI) was founded in 2002. It has been established to improve corporate governance through fostering independent scientific research and related activities. The ECGI is an international scientific non-profit association. It provides a forum for debate and dialogue between academics, legislators and practitioners, focusing on major corporate governance issues and thereby promoting best practice.

Its primary role is to undertake, commission and disseminate research on corporate governance. Based upon impartial and objective research and the collective knowledge and wisdom of its members, it advises on the formulation of corporate governance policy and development of best practice and undertake any other activity that will improve understanding and exercise of corporate governance.

It acts as a focal point for academics working on corporate governance in Europe and elsewhere, encouraging the interaction between the different disciplines, such as economics, law, finance and management.

The Institute articulates its work by expanding on the activities of the European Corporate Governance Network, disseminating research results and other relevant material.

It draws on the expertise of scholars from numerous countries and brings together a critical mass of expertise and interest to bear on this important subject.

Answer 2(c)

Independent directors bear a fiduciary responsibility towards shareholders and the creditors. The company and the board are responsible for all the consequences of actions taken by the officers of the company.

As per Section 149(12) of the Companies Act, 2013, notwithstanding anything contained in this Act, an independent director; shall be held liable, only in respect of such acts of omission or commission by a company which had occurred with his

knowledge, attributable through Board processes, and with his consent or connivance or where he had not acted diligently.

Performance evaluation of Independent Directors

- a) The Nomination Committee shall lay down the evaluation criteria for performance evaluation of independent directors.
- b) The listed entity shall disclose the criteria for performance evaluation, as laid down by the Nomination Committee, in its Annual Report.
- c) The performance evaluation of independent directors shall be done by the entire Board of Directors (excluding the director being evaluated).
- d) On the basis of the report of performance evaluation, it shall be determined whether to extend or continue the term of appointment of the independent director.

Answer 2A(i)

Department of Public Enterprises (DPE) is the nodal department for issuing the corporate governance guidelines for the Public Sector Enterprises for both at Centre and State level. Since Government is the major shareholder in Public Sector Undertakings (PSUs)/Central Public Sector Enterprises (CPSEs), it is responsible to set the high standard of governance to be followed by these public sector enterprises.

To bring in more transparency and accountability in the functioning of CPSEs, the Government in 2007 introduced, for an experimental period of one year, the Guidelines on Corporate Governance for CPSEs. These Guidelines were of voluntary nature. Since the issue of these guidelines, the CPSEs have had the opportunity to implement them for the whole of the financial year 2008-09. These Guidelines have been modified and improved upon based on the experience gained during the experimental period of one year. The Government have felt the need for continuing the adoption of good Corporate Governance Guidelines by CPSEs for ensuring higher level of transparency and decided to make these Guidelines mandatory and applicable to all CPSEs. Accordingly, revised Guidelines on Corporate Governance for Central Public Sector Enterprises was issued by Department of Public Enterprises (DPE) in 2010.

Apart from these instructions of DPE, the CPSEs are governed by the Companies Act, 2013 and regulations of various authorities like Comptroller and Auditor General of India (C&AG), Central Vigilance Commission (CVC), Administrative Ministries, other nodal Ministries, etc. In case of Listed CPSEs the SEBI Regulations would also be applicable in addition to other applicable laws and DPE Guidelines.

DPE guidelines on Corporate Governance provide following governance parameters:

- Board of Directors
- Audit Committee
- Remuneration Committee
- Subsidiary Companies
- Disclosures
- Report, Compliance and Schedule of Implementation

Answer 2A(ii)**Clarkson Principles of Stakeholder Management**

Principle 1: Managers should acknowledge and actively monitor the concerns of all legitimate stakeholders, and should take their interests appropriately into account in decision-making and operations.

Principle 2: Managers should listen to and openly communicate with stakeholders about their respective concerns and contributions, and about the risks that they assume because of their involvement with the corporation.

Principle 3 : Managers should adopt processes and modes of behavior that are sensitive to the concerns and capabilities of each stakeholder constituency.

Principle 4 : Managers should recognize the interdependence of efforts and rewards among stakeholders, and should attempt to achieve a fair distribution of the benefits and burdens of corporate activity among them, taking into account their respective risks and vulnerabilities.

Principle 5 : Managers should work cooperatively with other entities, both public and private, to insure that risks and harms arising from corporate activities are minimized and, where they cannot be avoided, appropriately compensated.

Principle 6 : Managers should avoid altogether activities that might jeopardize inalienable human rights (e.g., the right to life) or give rise to risks which, if clearly understood, would be patently unacceptable to relevant stakeholders.

Principle 7 : Managers should acknowledge the potential conflicts between (a) their own role as corporate stakeholders, and (b) their legal and moral responsibilities for the interests of stakeholders, and should address such conflicts through open communication, appropriate reporting and incentive systems, and, where necessary, third party review.

Answer 2A(iii)

Under Section 178(2), (3) and (4) of the Companies Act 2013, the Nomination and Remuneration Committee shall perform following functions:

- Identify persons who are qualified to become directors and who may be appointed in senior management in accordance with the criteria laid down, recommend to the Board their appointment and removal. Further, it has been attached with a wider responsibility of carrying out evaluation of every director's performance.
- Formulate the criteria for determining qualifications, positive attributes and independence of a director and recommend to the Board a policy, relating to the remuneration for the directors, key managerial personnel and other employees.
- While formulating the policy, the Committee shall consider the following:
 - (a) the level and composition of remuneration is reasonable and sufficient to attract, retain and motivate directors of the quality required to run the company successfully;

- (b) relationship of remuneration to performance is clear and meets appropriate performance benchmarks; and
- (c) remuneration to directors, key managerial personnel and senior management involves a balance between fixed and incentive pay reflecting short and long-term performance objectives appropriate to the working of the company and its goals.

The remuneration policy formulated by the Committee is required under the Act to be disclosed in the Board's report.

Role of Nomination and Remuneration Committee (Part D of Schedule II of SEBI (LODR) Regulations, 2015)

- (1) Formulation of the criteria for determining qualifications, positive attributes and independence of a director and recommend to the board of directors a policy relating to, the remuneration of the directors, key managerial personnel and other employees;
- (2) Formulation of criteria for evaluation of performance of independent directors and the board of directors;
- (3) Devising a policy on diversity of board of directors;
- (4) Identifying persons who are qualified to become directors and who may be appointed in senior management in accordance with the criteria laid down, and recommend to the board of directors their appointment and removal.
- (5) Whether to extend or continue the term of appointment of the independent director, on the basis of the report of performance evaluation of independent directors.
- (6) Recommend to the board, all remuneration, in whatever form, payable to senior management.

Question 3

- (a) *Mr. X and Mr. Y are working in an organization, in which Mr. X focuses on the outcomes of the problems and Mr. Y focuses on the cause of the problems. Discuss the ethical theories to be adopted by Mr. X and Mr. Y.*
- (b) *Ramesh is an employee of an XYZ stock company, he shares some price-sensitive information with one of his relative. His relative further share this information with one of his friend who uses it to make profit from the stock market. Write the concept of unethical practices adopted by them and what are the measures to control it?*
- (c) *Describe the performance evaluation of the "Non-Executive Director" (NED).*
(5 marks each)

Answer 3(a)

Mr. X, focussed on Teleological moral theories, locate moral goodness in the consequences of our behaviour and not the behaviour itself. According to teleological (or consequentialist) moral theory, all rational human actions are teleological in the

sense that we reason about the means of achieving certain ends. Moral behaviour, therefore, is goal-oriented. This theory holds that ends or consequences of an act determine whether the act is good or bad.

While Mr. Y is focussed on Deontological theories which are by definition duty based. That is to say, that morality, according to deontologist, consists in the fulfilment of moral obligations, or duties. Duties, in the deontological tradition, are most often associated with obeying absolute moral rules. Hence, human beings are morally required to do (or not to do) certain acts in order to uphold a rule or law. The rightness or wrongness of a moral rule is determined.

Answer 3(b)

According to the SEBI (Prohibition of Insider Trading) Regulations, 2015, "unpublished price sensitive information" means any information, relating to a company or its securities, directly or indirectly, that is not generally available which upon becoming generally available, is likely to materially affect the price of the securities and shall, ordinarily including but not restricted to, information relating to the following: –

- (i) financial results;
- (ii) dividends;
- (iii) change in capital structure;
- (iv) mergers, de-mergers, acquisitions, delistings, disposals and expansion of business and such other transactions;
- (v) changes in key managerial personnel.

Further, as per the SEBI (Prohibition of Insider Trading) Regulations, 2015

"Connected Person" means,-

- (i) any person who is or has during the six months prior to the concerned act been associated with a company, directly or indirectly, in any capacity including by reason of frequent communication with its officers or by being in any contractual, fiduciary or employment relationship or by being a director, officer or an employee of the company or holds any position including a professional or business relationship between himself and the company whether temporary or permanent, that allows such person, directly or indirectly, access to unpublished price sensitive information or is reasonably expected to allow such access.

Ramesh being an employee of XYZ limited is a connected person.

SEBI (PIT) Regulations, 2015 prohibits communication of unpublished price sensitive information to any person. It provides that no insider shall communicate, provide, or allow access to any unpublished price sensitive information, relating to a company or securities listed or proposed to be listed, to any person including other insiders except where such communication is in furtherance of legitimate purposes, performance of duties or discharge of legal obligations. It also provides that no insider shall trade in securities that are listed or proposed to be listed on a stock exchange when in possession of unpublished price sensitive information. When a person who has traded in securities

has been in possession of unpublished price sensitive information, his trades would be presumed to have been motivated by the knowledge and awareness of such information in his possession.

Ramesh, his relative and relative's friend have violated the provisions of SEBI (PIT) Regulations, 2015. The SEBI (PIT) Regulations, 2015 provides that any contravention of these regulations shall be dealt with by the Board in accordance with the SEBI Act.

Further, Ramesh has also breached his moral / fiduciary duty. Being an employee of the Company, Ramesh should have refrained from communicating any insider information to anyone and should have upheld his moral ethics.

As regards measures to control the problem, the SEBI (PIT) Regulations, 2015 itself provides for many safeguards in the matters. A few are listed below:

- Maintenance of structured digital data base of unpublished price sensitive information and persons who have access to it
- Mandatory Closure of trading window
- Formulation of Trading Plans
- Disclosures of trading by Insiders
- Code of Fair Disclosure
- Penal provisions

Some other general measures to control the problem are:

1. Regular training and education of all employees to apprise them about the sensitivity and gravity of the matter and its penal consequences;
2. Entering of non-disclosure agreement / confidentiality agreement with all employees

Answer 3(c)

Performance Evaluation of Non-Executive Directors

The performance evaluation of non-executive directors should be by a peer group comprising the entire Board of Directors, excluding the director being evaluated; and Peer group evaluation should be the mechanism to determine whether to extend/continue the terms of appointment of nonexecutive directors.

The chairman and other board members should consider the following issues and the individual concerned should also be asked to assess themselves. For each non-executive director:

- How well prepared and informed are they for board meetings and is their meeting attendance satisfactory?
- Do they demonstrate a willingness to devote time and effort to understand the company and its business and a readiness to participate in events outside the boardroom, such as site visits?

- What has been the quality and value of their contributions at board meetings?
- What has been their contribution to development of strategy and to risk management?
- How successfully have they brought their knowledge and experience to bear in the consideration of strategy?
- How effectively have they probed to test information and assumptions? Where necessary, how resolute are they in maintaining their own views and resisting pressure from others?
- How effectively and proactively have they followed up their areas of concern?
- How effective and successful are their relationships with fellow board members, the company secretary and senior management?
- Does their performance and behavior engender mutual trust and respect within the board?
- How actively and successfully do they refresh their knowledge and skills and are they up to date with:
 - o the latest developments in areas such as corporate governance framework and financial reporting?
 - o the industry and market conditions?
- How well do they communicate with fellow board members, senior management and others, for example shareholders. Are they able to present their views convincingly yet diplomatically and do they listen and take on board the views of others?

Legal provisions related to Performance evaluation of Non-Executive Directors

As per Section 178, The Nomination and Remuneration Committee (NRC) shall specify the manner for effective evaluation of performance of Board, its committees and individual Directors to be carried out either by the Board, by the Nomination and Remuneration Committee or by an independent external agency and review its implementation and compliance. Thus, in case of Companies to whom Section 178 applies, the NRC will specify the manner in which Performance Evaluation of Non-Executive Directors will be carried out. The evaluation may be done by the NRC or the Board of Directors or by an independent external agency.

Schedule IV further provides that the independent directors shall review the performance of non-independent Directors which will include non-executive non-independent Directors also, if any. The independent directors shall also review the performance of the Chairperson of the company, taking into account the views of executive Directors and non-executive Directors;

Further, in case of Non-Executive Directors who are Independent Directors, the Act provides that the performance evaluation of independent Directors shall be done by the entire Board of Directors, excluding the director being evaluated. On the basis of the report of performance evaluation, it shall be determined whether to extend or continue the term of appointment of the independent director.

Question 4

- (a) *Securities and Exchange Board of India (SEBI) in 1999 set up a committee under Shri Kumar Mangalam Birla, member SEBI Board, to promote and raise the standards of good Corporate Governance. Discuss the recommendations of the Kumar Mangalam Birla Committee on Corporate Governance.*
- (b) *A guidance is provided to employees and Directors to report to the management concerns about unethical practices actual or suspected fraud or violation of the code of conduct or any policy of the company. Discuss the provisions of the Company Act, 2013 with regard to vigil mechanism.*
- (c) *Point out the power of Reserve Bank to appoint Chairman of a banking company under Section 10BB of the Banking Regulation Act, 1949. (5 marks each)*

Answer 4(a)

The recommendations of the Kumar Mangalam Birla Committee on Corporate Governance led to inclusion of Clause 49 in the Listing Agreement in the year 2000. These recommendations, aimed at improving the standards of Corporate Governance, were divided into mandatory and non-mandatory recommendations.

Mandatory Recommendations

- The mandatory recommendations apply to the listed companies with paid up share capital of Rs. 3 crore and above.
- Composition of board of directors should be optimum combination of executive & non-executive directors.
- Audit committee should contain 3 independent directors with one having financial and accounting knowledge.
- Remuneration committee should be setup
- The Board should hold at least 4 meetings in a year with maximum gap of 4 months between 2 meetings to review operational plans, capital budgets, quarterly results, minutes of committee's meeting.
- Director shall not be a member of more than 10 committee and shall not act as chairman of more than 5 committees across all companies
- Management discussion and analysis report covering industry structure, opportunities, threats, risks, outlook, internal control system should be ready for external review
- Any Information should be shared with shareholders in regard to their investments.

Non-Mandatory Recommendations

The committee made several recommendations with reference to:

- Role of chairman
- Remuneration committee of board
- Shareholders' right for receiving half yearly financial performance.
- Postal ballot covering critical matters like alteration in memorandum

- Sale of whole or substantial part of the undertaking
- Corporate restructuring
- Further issue of capital
- Venturing into new businesses

These recommendations were to apply to all the listed private and public sector companies, their directors, management, employees and professionals associated with such companies. The Committee recognised that compliance with the recommendations would involve restructuring the existing boards of companies. It also recognised that smaller companies will have difficulty in immediately complying with these conditions.

Answer 4(b)

Section 177(9) read with Rule 7 of the Companies (Meetings of Board and its Powers) Rules, 2014, mandates following companies to establish Vigil Mechanism in their companies:

- (1) Every listed company and the companies belonging to the following class or classes shall establish a vigil mechanism for their directors and employees to report their genuine concerns or grievances-
 - a) the Companies which accept deposits from the public;
 - b) the Companies which have borrowed money from banks and public financial institutions in excess of fifty crore rupees.
- (2) The companies which are required to constitute an audit committee shall oversee the vigil mechanism through the committee and if any of the members of the committee have a conflict of interest in a given case, they should recuse themselves and the others on the committee would deal with the matter on hand.
- (3) In case of other companies, the Board of directors shall nominate a director to play the role of audit committee for the purpose of vigil mechanism to whom other directors and employees may report their concerns.
- (4) The vigil mechanism shall provide for adequate safeguards against victimisation of employees and directors who avail of the vigil mechanism and also provide for direct access to the Chairperson of the Audit Committee or the director nominated to play the role of Audit Committee, as the case may be, in exceptional cases.
- (5) In case of repeated frivolous complaints being filed by a director or an employee, the audit committee or the director nominated to play the role of audit committee may take suitable action against the concerned director or employee including reprimand.

Answer 4(c)

Power of Reserve Bank to appoint Chairman of a banking company: Section 10BB of Banking Regulation Act, 1949 provides that:

- (1) Where the office of the Chairman of the Board of Directors appointed on a

whole-time basis or a Managing Director of a banking company is vacant, the Reserve Bank may, if it is of opinion that the continuation of such vacancy is likely to adversely affect the interest of the banking company, appoint a person, eligible under sub-section (4) of Sec. 10-B to be so appointed, to be the Chairman of the banking company and where the person so appointed is not a director of such banking company, he shall, so long as he holds the office of the Chairman of the Board of Directors appointed on a whole-time basis or a Managing Director, be deemed to be a director of the banking company.

- (2) The Chairman of the Board of Directors appointed on a whole-time basis or a Managing Director so appointed by the Reserve Bank shall be in the whole-time employment of the banking company and shall hold office for such period not exceeding three years, as the Reserve Bank may specify, but shall, subject to other provisions of this Act, be eligible to re-appointment.
- (3) The Chairman of the Board of Directors appointed on a whole-time basis or a Managing Director so appointed by the Reserve Bank shall draw from the banking company such pay and allowances as the Reserve Bank may determine and may be removed from office only by the Reserve Bank.
- (4) Save as otherwise provided in this section, the provisions of Sec. 10-B shall, as far as may be, apply to the Chairman of the Board of Directors appointed on a whole-time basis or a Managing Director appointed by the Reserve Bank under sub-section (1) as they apply to the Chairman of the Board of Directors appointed on a whole-time basis or a Managing Director appointed by the banking company.

PART B

Question 5

- (a) *'Corporate sustainability starts with a company's value system and a principled approach to doing business.'* Discuss and mention Ten Principles of United Nations Global Compact.
- (b) *The Ministry of Environment and Forest (MoEF) is responsible to enforce the Regulations established pursuant to major legal enactments. Explain.*
- (c) *What do you understand by Corporate Social Responsibility ? Being the company secretary of ABC Ltd. how will you implement the framework for the recent trends of corporate social responsibility ?* (5 marks each)

Answer 5(a)

Corporate sustainability starts with a company's value system and a principled approach to doing business. This means operating in ways that, at a minimum, meet fundamental responsibilities in the areas of human rights, labour, environment and anti-corruption. Responsible businesses enact the same values and principles wherever they have a presence, and know that good practices in one area do not offset harm in another.

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:

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

Answer 5(b)

The MoEF is responsible to enforce the Regulations established pursuant to major legal enactments which are as follows:

- The Water (Prevention and Control of Pollution) Act was enacted in 1974 to prevent and control water pollution, to maintain or restore the wholesomeness of water in the country. The Act was amended in 1988.
- The Air (Prevention and Control of Pollution) Act was enacted in 1981 and amended in 1987 to provide for the prevention, control and abatement of air pollution in India.
- The Environment (Protection) Act was enacted in 1986 with the objective of providing for the protection and improvement of the environment. It empowers the Central Government to establish authorities [under section 3(3)] charged with the mandate of preventing environmental pollution in all its forms and to tackle specific environmental problems that are peculiar to different parts of the country. The Act was last amended in 1991.
- Public Liability Insurance Act 1991 was enacted with an objective to provide for the damages suffered by the victims as a result of an accident occurring by the handling of a hazardous substance. The Act applies to all owners associated with the production or handling of any hazardous chemicals.

- National Green Tribunal (NGT) : The National Green Tribunal was established in 2010 under the National Green Tribunal Act 2010 for effective and expeditious disposal of cases relating to environmental protection and conservation of forests, and other natural resources.
- The Prevention of Cruelty to Animals Act was enacted in 1960 to prevent the infliction of unnecessary pain or suffering on animals, and to amend the laws relating to the prevention of cruelty to animals. After the enactment of this Act, the Animal Board of India was formed for the promotion of animal welfare.
- The Government of India enacted Wild Life (Protection) Act 1972 with the objective of effectively protecting the wild life of this country, and to control poaching, smuggling and illegal trade in wildlife and its derivatives.
- The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, recognizes the rights of forest-dwelling Scheduled Tribes and other traditional forest dwellers over the forest areas inhabited by them, and provides a framework for according the same.
- The Biological Diversity Act 2002 was born out of India's attempt to realise the objectives enshrined in the United Nations Convention on Biological Diversity (CBD) 1992, which recognizes the sovereign rights of states to use their own Biological Resources.

Answer 5(c)

Corporate Social Responsibility (CSR) is a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders. The main function of an enterprise is to create value through producing goods and services that society demands, thereby generating profit for its owners and shareholders as well as welfare for society, particularly through an ongoing process of job creation. However, new social and market pressures are gradually leading to a change in the values and in the horizon of business activity.

Essentially, Corporate Social Responsibility is an inter-disciplinary subject in nature and encompasses in its fold:

1. Social, economic, ethical and moral responsibility of companies and managers,
2. Compliance with legal and voluntary requirements for business and professional practice,
3. Challenges posed by needs of the economy and socially disadvantaged groups, and
4. Management of corporate responsibility activities.

CSR is an important business strategy because, wherever possible, consumers want to buy products from companies they trust; suppliers want to form business partnerships with companies they can rely on; employees want to work for companies they respect; and NGOs, increasingly, want to work together with companies seeking feasible solutions and innovations in areas of common concern. CSR is a tool in the hands of corporates to enhance the market penetration of their products, enhance its relation with stakeholders. CSR activities carried out by the enterprises affects all the stakeholders, thus making good business sense, the reason being contribution to the bottom line.

A properly implemented CSR Concept can bring along a variety of competitive advantages, such as enhanced access to capital and markets, increase sales and profits, operational cost savings, improved productivity and quality, efficient human resource base, improved brand image and reputation, enhanced customer loyalty, better decision making and risk management processes.

Section 135 of the Companies Act, 2013 mandates specified companies to undertake CSR activities. The CSR framework needs to be developed keeping in mind the legal provisions wherever applicable.

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

Question 6

Discuss in brief the following :

- (a) *Global Compact Self-Assessment Tool.*
- (b) *The 2030 Agenda for Sustainable Development.*
- (c) *Reason of Ozone Layer Depletion.*
- (d) *Environment, Social, Governance Index.*
- (e) *Bali Roadmap.* (3 marks each)

OR (Alternate question to Q. No. 6)

Question 6A

- (i) *What is corporate sustainability ? Discuss the role of organizations in sustainable development in India.*
- (ii) *Explain the Millennium Development Goals to Sustainable Development Goals.*
- (iii) *To provide leadership and encourage partnership is caring for the environment by inspiring, informing, and enabling nations and its peoples to improve their quality of life without compromising that of future generations. What are the major milestones of the United Nations Environment Programme ?* (5 marks each)

Answer 6(a)

Global Compact Self-Assessment Tool

The Global Compact Self Assessment Tool is an easy-to-use guide designed for use by companies of all sizes and across sectors committed to upholding the social and environmental standards within their respective operations. The tool consists of 45 questions with a set of three to nine indicators for each question. It consists of a 'management section' and four other sections, including human rights, labour, environment and anti-corruption that relate to the principles of the UN Global Compact. The tool is in line with the UN Guiding Principles on Business and Human Rights. For a small company, this tool acts as a measure of the company's performance in all areas of the UN Global Compact and how well these issues are managed. For a large organisation, this tool helps to continuously improve existing policies and systems, engage subsidiaries, suppliers or other stakeholders, and improves internal and external reporting.

Answer 6(b)**The 2030 agenda for Sustainable Development**

The 2030 agenda for Sustainable Development is a plan of action for people, planet and prosperity. It also seeks to strengthen universal peace in larger freedom. The 17 Sustainable Development Goals and 169 targets demonstrate the scale and ambition of this new universal Agenda. They seek to build on the Millennium Development Goals and complete what these did not achieve. They seek to realize the human rights of all and to achieve gender equality and the empowerment of all women and girls. They are integrated and indivisible and balance the three dimensions of sustainable development: the economic, social and environmental. The Goals and targets will stimulate action over the next fifteen years in areas of critical importance for humanity and the planet.

Answer 6(c)**Reason of Ozone layer Depletion**

Ozone layer depletion is the gradual thinning of the earth's ozone layer present in the upper atmosphere. Ozone depletion also consists of a much larger springtime decrease in stratospheric ozone around Earth's Polar Regions, which is referred to as the ozone hole. The main cause of ozone depletion and the ozone hole is manufactured chemicals, especially manufactured halocarbon refrigerants, solvents, propellants, and foam-blowing agents (chlorofluorocarbons (CFCs), HCFCs, halons). Since the early 1970's, scientists observed reduction in stratospheric ozone and it was found more prominent in Polar Regions. ozone depleting substances have a lifetime of about 100 years.

Answer 6(d)**Environment, Social, Governance (ESG) Index**

ESG describes the environmental, social and governance issues that investors are considering in the context of corporate behaviour. Integration of ESG refers to the active investment management processes that include an analysis of environmental, social, and governance risks and opportunities and sustainability aspects of company performance evaluation.

The ESG index employs a unique and innovative methodology that quantifies a company's ESG practices and translates them into a scoring system which is then used to rank each company against its peers in the market. Its quantitative scoring system offers investors complete transparency on Environmental, Social & governance issues of a company.

Key Performance Indicators:

- *Environment* - Energy use and efficiency, Greenhouse gas emissions, Water use, Use of ecosystem services – impact & dependence and Innovation in environment friendly products and services.
- *Social* - Employees, Poverty and community impact and Supply chain management.
- *Governance* - Codes of conduct and business principles, accountability, transparency and disclosure and Implementation – quality and consistency.

Answer 6(e)**Bali Roadmap**

At the 2007 United Nations Climate Change Conference in Bali, Indonesia in December, 2007, the participating nations adopted the Bali Roadmap as a two-year process for finalizing a binding agreement in 2009 in Denmark. The Bali Road Map consists of a number of forward-looking decisions that represent the various tracks essential to reaching a secure climate future.

The Bali Road Map includes the Bali Action Plan, which charts the course for a new negotiating process designed to tackle climate change, with the aim of completing this by 2009. To conduct the process, a subsidiary body under the Convention called the Ad Hoc Working Group on Long-term Cooperative Action under the Convention (AWG-LCA) was set up.

To discuss future commitments for industrialized countries under the Kyoto Protocol, the Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol established a working group in December 2005, called the Ad Hoc Working Group on further Commitments for Annex I Parties under the Kyoto Protocol (AWG-KP).

Answer 6A(i)

Sustainable development (SD) is the development that meets the needs of current generations without compromising the ability of future generations to meet their needs and aspirations and it can be pursued in many divergent ways. 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. Sustainability is to maintain a balance between the businesses and the society, doing business activities without wasting the resources of the nature for the development and betterment of the whole society

Role of organisations in sustainable development in India

Sustainable development requires that businesses rearrange their significances and take the lead in execution of the Sustainable development Goals by implementing sustainable business practices.

Some important elements of this dual role include:

1. *Businesses can help in economic growth* : Private businesses involvement in the economy can harness opportunities for export-oriented production by creating and expanding economic opportunities as well as better participation in global and regional value chains. Indian Government is promoting "Make-in India" policy to support productive capabilities that drive its growth. Business enterprises play a major role in the economic growth of any economy.
2. *Businesses help in creation of employment* : Creation of employment can lift the people out of poverty especially women and youth. Government of India started "Skill India" programme and under Ministry of Skills Development and Entrepreneurship for skill updation. Businesses have a clear and significant role to play in this programme through generating work opportunities.

3. *Businesses should follow low carbon development paths* : Business models have to be developed within the standards of sustainable development in the future. They have to focus on low carbon development paths compiling with the environmental standards by using more creative use of technologies.
4. *New sources of renewable energy* : In India 70 percent of greenhouse gas emissions are because of thermal energy and 25 per cent of households don't use modern energy. Sustainable Energy for All (SE4All) can be achieved by harnessing renewable energy opportunities. There is enormous untapped solar and wind energy in India. As a result, India launched National Solar Mission which can generate 100,000MW of solar power by 2022. Businesses can thus shrink thermal energy consumption by investing in renewable energy and thus can enhancing energy efficiency. All these opportunities can pay rich dividends while decreasing our carbon consumption.
5. *Sustainable Urbanization* : Urbanization offers enormous commercial opportunities for infrastructure and services which can support sustainable development. By 2050 Indian cities are expected to accommodate more than 50 per cent of the population, which lead to India's 100 Smart Cities proposal. These new cities will be established on the basis of public-private partnerships. And the role played by businesses increases more towards sustainable urbanization.
6. *Way towards Green Banking and Financial Services* : Financial institutions should highlight sustainable development in their lending programmes through green banking and financial inclusion. In this regard Indian Government's Jan Dhan programme on financial inclusion is a major success as 115 million people have bank accounts.
7. *Frugal innovations* : Indian companies are known for their frugal innovations especially in engineering and technology field that led them to the development of useful and affordable products. Frugal innovation generates more business and social value while optimizing available resources and the businesses have to invest in these approaches in future.
8. *Corporate Social Responsibility (CSR) activities of business* : CSR is an important aspect of the contribution of business enterprises to achieving the SDGs. The primary delivery of sustainable development outputs must be through business practices themselves. With the new company law requiring 2 per cent of profits to be reserved for CSR the businesses can effectively channelize these resources into sustainable development priorities.

Answer 6A(ii)

The Millennium Development Goals (MDGs) are eight international development goals that were officially established following the Millennium Summit of the United Nations in 2000, following the adoption of the United Nations Millennium Declaration. All 189 United Nations member states agreed to achieve these goals by the year 2015.

The goals are:

1. Eradicating extreme poverty and hunger,
2. Achieving universal primary education,

3. Promoting gender equality and empowering women,
4. Reducing child mortality rates,
5. Improving maternal health,
6. Combating HIV/AIDS, malaria, and other diseases,
7. Ensuring environmental sustainability, and
8. Developing a global partnership for development.

Answer 6A(iii)

The Mission of the United Nation's Environment Programme is - "To provide leadership and encourage partnership in caring for the environment by inspiring, informing, and enabling nations and peoples to improve their quality of life without compromising that of future generations."

The major Milestones of the UNEP include:

- 1973 - Convention on International Trade in Endangered Species (CITES)
- 1985 - Vienna Convention for the Protection of the Ozone Layer
- 1987 - Montreal Protocol on Substances that Deplete the Ozone Layer
- 1988 - Intergovernmental Panel on Climate Change (IPCC)
- 1989 - Basel Convention on the Transboundary Movement of Hazardous Wastes
- 1992 - UN Conference on Environment and Development (Earth Summit) publishes Agenda 21, a blueprint for sustainable development
- 1992 - Convention on Biological Diversity
- 2000 - Malmö Declaration - first Global Ministerial Forum on the Environment calls for strengthened international environmental governance
- 2000 - Millennium Declaration - environmental sustainability was included as one of eight Millennium Development Goals
- 2002 - World Summit on Sustainable Development
- 2004 - Bali Strategic Plan for Technology Support and Capacity Building
- 2005 - World Summit outcome document highlights key role of environment in sustainable development
- 2012 - The United Nations Conference on Sustainable Development (Rio +20)
- 2013 -15 - High level Political Forum on Sustainable Development
- 2015 - United Nations Sustainable Development Summit, 2015 (New York)

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