Section – A

(Attempt all the questions. Each question carries 10 marks.)

Q.1 What are Computer Networks? Explain their importance and various types.

Ans. Computer networks are systems that connect two or more computers or devices so they can share information, files, and resources. They let devices talk to each other, helping with communication, collaboration, and smoother operations.

Importance of Computer Networks

1. **Resource Sharing:** Networks allow devices to share printers, files, software, etc., which cuts costs and makes things more convenient.
2. **Communication & Collaboration:** You can send emails, chat, or have video calls—makes teamwork easier, especially in schools and offices.
3. **Efficiency & Productivity:** Transferring data quickly saves time and boosts productivity.
4. **Centralized Data:** All data can be stored in one place, making backup and protection easier.
5. **Scalability:** You can add more devices without major changes. Networks can grow with your needs.

Types of Computer Networks

1. **Local Area Network (LAN):**
   - Covers a small area like an office or building.
   - Usually fast and reliable (e.g. using Ethernet).
   - *Example:* A school or office network.
2. **Wide Area Network (WAN):**
   - Covers a large area, connecting multiple LANs.
   - Uses telecom lines, satellites, or leased lines.
   - *Example:* The Internet connecting networks across the world.
3. **Metropolitan Area Network (MAN):**
   - Spans a city or campus, bigger than a LAN but smaller than a WAN.
   - Used by organizations with branches in one city.
   - *Example:* University campuses within a city.
4. **Personal Area Network (PAN):**
   - Very small, personal device network.
   - Often uses Bluetooth or USB for phones, laptops, tablets.
   - *Example:* Connecting a phone to a laptop via Bluetooth.

5. **Campus Area Network (CAN):**
    - Like a LAN but across several buildings in one area.
    - Connects departments within a company or campus.
    - *Example:* University buildings connected to the same network.
6. **Virtual Private Network (VPN):**
    - Extends a private network over the public internet securely.
    - Useful for remote work, safeguarding company data from anywhere.

Q.2 What are active and passive attacks? Explain with suitable examples.

Ans. In computer security, active and passive attacks are two main kinds of threats that risk the safety of data by affecting its confidentiality, integrity or availability.

1. Active Attacks

These involve directly interfering with data or networks—changing, disrupting, or destroying data.

Types of Active Attacks:

- *Modification of Data:* The attacker changes data in transit.
- *Denial of Service (DoS):* The attacker blocks normal users from accessing services.
- *Replay Attack:* The attacker intercepts valid data and retransmits it to fool systems.
- *Man-in-the-Middle Attack (MitM):* The attacker intercepts and alters communication between two parties.
    - *Example:* Alice sends a payment request to Bob's server, but the attacker intercepts it, changes the amount, and the server sends money to the attacker instead.

2. Passive Attacks

These involve secretly listening to or monitoring traffic without changing anything. The goal is to gather sensitive data without detection.

Types of Passive Attacks:

- *Eavesdropping (Sniffing):* The attacker listens to communication, hoping to steal passwords, credit card info, or private messages.
- *Traffic Analysis:* The attacker observes patterns—like who contacts whom, message sizes or timing—to deduce information without reading the actual content.

Example of a Passive Attack: Someone on a public Wi-Fi network monitors which websites others visit to gather private information without altering any data.

Q.3 Explain the meaning of E-wallet. Discuss briefly the factors which have contributed towards the adoption of E-wallets in India.

🔹 What is an E-wallet?

An **electronic wallet** (or digital wallet) is a mobile or online app where you can store money, bank cards, or payment details. You use it to send or receive money, pay for shopping or services—just like using cash or cards, but through your smartphone. IBEF Vidyaocean

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🔹 What helped E-wallets become popular in India?

Here are the key reasons India has seen such rapid growth in e-wallet usage:

1. **Government Push & Demonetization (2016)**
   The 2016 policy to withdraw ₹500/₹1000 notes created a cash shortage. This made people switch to digital payments, including e-wallets. IGNOUCORNER.COM +15
   Campaigns like *Digital India*, and platforms like BHIM/UPI also made digital payments easier and more accepted. IGNOUCORNER.COM +1
2. **Smartphone & Internet Growth**
   Affordable smartphones and data plans meant more people could use digital wallets through apps. IGNOUCORNER.COM +6 Vidyaocean +15
3. **Ease and Speed**
   E-wallets let you pay instantly, without visiting banks or carrying cash. You can pay bills, send money or shop in seconds. Vidyaocean +9 IGNOUCORNER.COM +4
4. **Security & Trust**
   Wallets come with security features like passwords, OTPs, fingerprint or face scan, encryption, and two-factor authentication. This has boosted people's confidence. Vidyaocean University of Tehran Journals
5. **Attractive Rewards & Cashback**
   To get users onboard, wallet companies give freebies—like cashback, discounts, referral rewards—which made people keep using them. IBEF Vidyaocean +9
6. **Integration with UPI & BharatQR**
   Most e-wallets now work seamlessly with UPI and BharatQR, letting users pay directly from bank accounts across apps and merchants. Vidyaocean +14

7. **Contactless payments during COVID-19**

   The pandemic increased demand for touch-free, digital payments. People avoided handling cash and leaned more on QR-based and wallet transactions.

   University of Tehran Journals +1

8. **Financial Inclusion**

   Wallets enabled rural and unbanked populations to access financial transactions without needing traditional bank accounts. WIRED

9. **More merchants accepting wallets**

   From big stores to street vendors, more and more businesses started accepting e-wallet payments, making them more useful in day-to-day life. Vidyaocean

Q.4 What do you understand by Mail Merge? Differentiate between Merge and Query option of 'Mail Merge Helper' window.

Ans. Mail Merge

Mail Merge is a tool in word processing programs (like Microsoft Word) that helps you make personalized documents. It joins a main template (like a letter or form) with data (like names or addresses) from a list. This is useful when you want to send the same message to many people but with their personal details.

For example, it helps make letters, labels, or emails for many people at once without typing each one separately. It takes data from a file (like Excel or CSV) and fills it into the document automatically.

How Mail Merge Works:

1. **Main Document:** This is the base file (like a letter) that you want to send. It has placeholders like <<Name>>, <<Address>> where data will be filled in.
2. **Data Source:** This is the file (like Excel) that has the actual data (names, addresses, etc.).
3. **Merge Process:** This joins the document and the data, creating personalized documents for each person.

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1. Merge:

- **Purpose:** "Merge" is the final step that adds the data (like names) into the placeholders in your document.
- **When Used:** After your main document and data source are ready, you click "Merge" to make personalized copies.
- **Example:** If you have a letter and a list of 50 names, the "Merge" option will create 50 letters with each person's name and details filled in.

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2. Query:

- **Purpose:** "Query" is used to pick only specific records from your data before merging. You can set conditions (like city = Mumbai) to send the letter only to certain people.
- **When Used:** Before clicking Merge, you can apply a Query to choose only the records that match your condition.
- **Example:** If your list has 500 people but you want to send letters only to those in Delhi, use "Query" to select just those entries.

Q.5 What do you understand by a business presentation? Explain various types of business presentations.

Ans. Business Presentation:

A business presentation is a formal or informal way of sharing information, ideas, plans, or reports with people in a professional setting. It usually includes visual tools like slides, charts, graphs, or videos to help explain the message clearly.

The main purpose of a business presentation is to share important information in a clear and convincing way. It aims to inform, persuade, or motivate the audience to take action or make a decision.

Business presentations are often used in meetings, conferences, sales pitches, boardroom discussions, and training programs. A good business presentation is interesting, clear, well-organized, and meets the needs of the audience.

Types of Business Presentations:

1. Informative Presentation:

- **Purpose:** To give information or explain something without expecting the audience to act right away.
- **Example:** Sharing market research, explaining a new product, or updating company performance.
- **Features:** Focuses on facts and clarity. Uses graphs and charts to explain things simply.

2. Persuasive Presentation:

- **Purpose:** To make the audience agree with a viewpoint or take a specific action.
- **Example:** Proposing a business idea to investors or convincing employees to accept a new policy.
- **Features:** Uses strong arguments, data, and examples. Often includes emotional appeal and a clear call to action.

3. Sales Presentation:

- **Purpose:** To present a product or service and encourage people to buy it.
- **Example:** A salesperson explaining the benefits of a product to a customer.
- **Features:** Highlights features, benefits, and unique selling points. Often includes demos, customer reviews, and success stories.

4. Motivational Presentation:

- **Purpose:** To inspire and encourage the audience to act or overcome challenges.
- **Example:** A motivational speaker boosting team morale or a manager sharing an inspiring message.
- **Features:** Uses stories, real-life examples, and emotional language to engage and motivate the audience.

5. Training Presentation:

- **Purpose:** To teach the audience a new skill or concept.
- **Example:** A training session on new software or leadership skills.
- **Features:** Focuses on step-by-step instructions. Uses videos, demos, and interactive tools to help learning.

6. Report Presentation:

- **Purpose:** To present the results of a study, project, or research.
- **Example:** Sharing a business report with directors or giving a project update.
- **Features:** Organized, based on data, and includes recommendations. Uses charts or slides for clarity.

7. Status Update Presentation:

- **Purpose:** To show the progress of a project or department.
- **Example:** A project manager updating stakeholders on project status.
- **Features:** Talks about current progress, goals, problems, and next steps. May include timelines and tasks.

Key Elements of a Good Business Presentation:

1. **Clear Goal:** Know what you want to achieve – inform, convince, inspire, or sell.
2. **Know Your Audience:** Make the content suitable for their needs and interests.
3. **Good Structure:** Have a proper beginning, middle, and end.
4. **Interesting Delivery:** Use storytelling, gestures, and voice changes to keep attention.
5. **Visuals:** Use slides, charts, or pictures to help explain your points.
6. **Practice:** Rehearse well to speak smoothly and manage time properly.

Q.6 Explain operating system and their types.

Ans. An Operating System (OS) is software that controls the computer's hardware and software. It helps different programs run and provides basic functions needed by applications. It works as a link between the user and the computer, making sure that memory, CPU, and storage are used properly.

Types of Operating Systems:

1. **Batch Operating System:** Runs a group of jobs (batches) one after another without user help. It is mostly used in big computers like mainframes.
2. **Time-Sharing Operating System:** Lets many users use the computer at the same time by giving each person a small part of the computer's power.
3. **Real-Time Operating System (RTOS):** Quickly reacts to inputs. It is used in important systems like hospital machines or car control systems.
4. **Distributed Operating System:** Connects many separate computers to work as one system, improving speed and dependability.
5. **Network Operating System (NOS):** Manages computers in a network and helps them share information and resources.
6. **Personal Operating System:** Made for personal computers like Windows, macOS, and Linux. These are easy to use and allow users to run many tasks at once.

Q.7 Discuss the benefits and limitations of centralized and decentralized information in business organizations.

Ans. Centralized Information:

Benefits:

1. **Consistency:** One main authority keeps the data the same throughout the organization.
2. **Control:** It is easier to keep track of information and avoid mistakes or misuse.
3. **Efficiency:** Information is stored in one place, so it's easier to manage.
4. **Security:** Important data is safer when kept in a central system.

Limitations:

1. **Slow Decision-Making:** Since decisions come from one place, it may take more time.
2. **Overload:** Too much work on one system can slow things down.
3. **Less Flexibility:** Local teams might not be able to make changes based on their needs.

Decentralized Information:

Benefits:

1. **Faster Decisions:** Local teams can quickly decide using their own data.
2. **Flexibility:** Information can be handled in ways that suit local needs.
3. **Scalability:** Works better in large businesses with many departments.

Limitations:

1. **Inconsistency:** Different departments may use different systems, causing confusion.
2. **Security Issues:** Spread-out data may be harder to protect.
3. **Complexity:** Handling many systems takes more time and effort.

Q.8 Describe the various options available in the main menu bar of MS-Word.

Ans. The main menu bar in MS Word gives users tools to manage and format documents. Here are the main menu items in simpler terms:

1. **File**: Commands to open, save, print, share, and close your document.
2. **Home**: Basic formatting tools—change font, size, style (bold, italic, underline), color, alignment, bullets, and clipboard actions like Cut, Copy, Paste.
3. **Insert**: Lets you add tables, photos, shapes, headers, footers, page numbers, links, and other objects.
4. **Design**: Controls how your document looks—choose themes, colors, fonts, and paragraph styles.
5. **Layout**: Adjust page setup like margins, page orientation, size, columns, and spacing.
6. **References**: Help with citations, footnotes, bibliography, and creating a table of contents.
7. **Mailings**: Tools for mail merge, creating envelopes and labels.
8. **Review**: Includes spell check, language options, comments, and track changes.
9. **View**: Change how you see the document (like Print Layout, Web Layout, or Outline view) and zoom in/out.

Q.9 Explain the process of creating a chart in PowerPoint with the help of an example.

Ans. Making a chart in Microsoft PowerPoint helps you show data visually. Here's a friendly step-by-step guide, using an example of sales by region:

Example: Create a chart showing sales for North, South, East, and West.

Steps:

1. **Open PowerPoint:** Start PowerPoint and open a new or existing presentation.
2. **Select the Slide:** Use a blank slide for a clean look.
3. **Insert Chart:** Go to the **Insert** tab, click the **Chart** icon, which opens chart types.
4. **Choose Chart Type:** Pick a chart style (e.g. Bar chart). For our example, choose a Bar chart and click **OK**.
5. **Enter Data:** An Excel window appears. Enter example data:
    - Regions: North, South, East, West
    - Sales: 5000, 4000, 3000, 6000
      Enter this, then close the Excel window.

6. **Customize Chart:** Click the chart and use the Design or Format tools to:
    - Edit the chart title (e.g. “Sales by Region”)
    - Change colors, labels, and layout as needed.
7. **Finalize:** Move the chart to the desired spot. Add any text or effects to improve the visual if needed.

Q.10 How do Pivot charts help in understanding the outcome of cross-tabulation of a data set?

Ans. Pivot charts in Excel are powerful tools that graphically display data from a pivot table, making complex cross-tabulated data easy to understand.

How Pivot Charts Help:

1. **Summarize Data:** They gather and condense large datasets by categories (like sales by region, product, or month), simplifying complex data.
2. **Visual Display:** They show the data as easy-to-read bar, line, or pie charts, highlighting trends or differences.
3. **Interactive Exploration:** You can filter or group data directly on the chart to see different views quickly.
4. **Comparison:** Pivot charts let you compare multiple aspects—spot trends, anomalies, or relationships between variables.

In short, pivot charts make cross-tabulated data clearer, visually engaging, and easier to explore.

Q.11 What do you understand by Google Sheets? Explain their usability.

Ans. Google Sheets is an online spreadsheet app from Google's productivity suite. It works like Excel but is cloud-based.

Usability:

- **Collaboration:** Multiple people can edit the same sheet at the same time, ideal for team work.
- **Cloud Storage:** It auto-saves your work in Google Drive, so you can access it from any device with internet.
- **Integration:** Works well with other Google tools such as Docs, Slides, and Forms, as well as some third-party apps.
- **Accessibility:** You can use it on smartphones, tablets, or computers—on the go.

Q.12 Explain the options we have to protect our document while sharing with others.

Ans. When you share documents—especially private or sensitive ones—you can use different protection methods:

1. **Password Protection:** Set a password so only authorized people can open the document.
2. **View-Only Access:** Share it in read-only mode so others can't edit or change it.
3. **Watermarking:** Add a faded text or image (like "Confidential") to show the document is sensitive or owned by someone.
4. **Restrict Permissions:** With online tools like Google Docs, you can control who can view, comment, or edit the document.
5. **Encryption:** Scramble the document content so it can't be read without a decryption key or password.

These steps help keep your document private and secure.

Q.13 What is the difference between SLN and DB method of Depreciation? How are they implemented in MS Excel?

Ans. SLN and DB are two common ways to calculate how an asset loses value over time.

SLN Method (Straight-Line):

- Depreciation is spread evenly over the asset's useful life.
- **Formula:** (Cost − Salvage Value) ÷ Useful Life
- You get the same depreciation expense each year.

DB Method (Declining Balance):

- Depreciation is based on the asset's book value at the start of each period.
- You deduct more in early years and less later on.
- For example: Depreciation = 2 × SLN rate × Book Value at the start of the year.

In MS Excel:

- Use `=SLN(cost, salvage, life)` for straight-line depreciation.
- Use `=DB(cost, salvage, life, period, [month])` for declining balance depreciation.

These built-in functions help you calculate depreciation easily for financial models or reports.

Q.14 Explain LOOKUP, VLOOKUP and HLOOKUP with examples.

Ans. LOOKUP, VLOOKUP, and HLOOKUP are Excel functions that let you search for a value in a table and return a matching value.

1. LOOKUP Function

- **Purpose:** Looks for a value in a single row or column and returns a matching value from another row or column.
- **Syntax:** `=LOOKUP(lookup_value, lookup_vector, result_vector)`
- **Example:** If employee IDs are in cells A1:A5 and names are in B1:B5: `=LOOKUP(102, A1:A5, B1:B5)` returns the name for ID 102.

2. VLOOKUP Function (Vertical Lookup)

- **Purpose:** Searches the first column of a table and returns a value in the same row from another column.
- **Syntax:** `=VLOOKUP(lookup_value, table_array, col_index_num, [range_lookup])`
- **Example:** If column A has product IDs and column B has prices: `=VLOOKUP(1002, A2:B10, 2, FALSE)` returns the price of product ID 1002.

3. HLOOKUP Function (Horizontal Lookup)

- **Purpose:** Searches the first row of a table and returns a value in the same column from another row.
- **Syntax:** `=HLOOKUP(lookup_value, table_array, row_index_num, [range_lookup])`
- **Example:** If row 1 lists months and row 2 has sales data: `=HLOOKUP("March", A1:L2, 2, FALSE)` returns the sales amount in March.

Key Differences:

- LOOKUP works with data in a single row or column and usually requires sorted data.
- VLOOKUP looks vertically in the first column and searches downward.
- HLOOKUP looks horizontally in the first row and searches across.