

Instruction: Attempt any Five Questions. All questions carry equal marks. Extra Attempt of any Question will not be considered.

Question No. 1

Explain generations of computer.

Question No. 2

Explain data processing cycle.

Question No. 3

Describe operating system in detail.

Question No. 4

Write a note on primary storage devices.

Question No. 5

Explain network topologies.

Question No. 6

Differentiate between Analog and digital computer.

Question No. 7

Explain the terms search engine, http, html and web browser.

Question No. 8

Explain Features of Excel.

See Guideline/Hints for each question on next page.

Guideline/Hints for each question

Q1: Explain Generations of Computer

- **Introduction:** Define computer generations and technological advancements.
 - **Five Generations of Computers** (Explain each with features and examples):
 1. **First Generation (1940-1956)** – Vacuum tubes, slow processing (e.g., ENIAC).
 2. **Second Generation (1956-1963)** – Transistors, faster, smaller (e.g., IBM 1401).
 3. **Third Generation (1964-1971)** – Integrated Circuits (ICs), better efficiency (e.g., IBM 360).
 4. **Fourth Generation (1971-Present)** – Microprocessors, PCs, networking (e.g., Intel processors).
 5. **Fifth Generation (Future & AI)** – Artificial Intelligence, quantum computing.
 - **Conclusion:** Impact of technological advancements on computing.
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Q2: Explain Data Processing Cycle

- **Introduction:** Define data processing and its importance in business.
 - **Steps in the Data Processing Cycle** (Explain each with examples):
 1. **Collection** – Gathering raw data.
 2. **Input** – Entering data into a system.
 3. **Processing** – Converting data into meaningful information.
 4. **Storage** – Saving processed data.
 5. **Output** – Presenting the results (e.g., reports).
 6. **Feedback** – Refining data if needed.
 - **Conclusion:** Role of data processing in decision-making.
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Q3: Describe Operating System in Detail

- **Introduction:** Define an operating system (OS) and its role in computers.
- **Functions of an OS:**
 1. **Process Management** – Handling running applications.
 2. **Memory Management** – Allocating RAM usage.
 3. **File Management** – Organizing files and directories.

4. **Device Management** – Managing hardware components.
 5. **User Interface** – Providing GUI or CLI.
- **Examples of Operating Systems:** Windows, macOS, Linux, Android.
 - **Conclusion:** Importance of OS in smooth computer operation.
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Q4: Write a Note on Primary Storage Devices

- **Introduction:** Define primary storage (also known as main memory).
 - **Types of Primary Storage:**
 1. **RAM (Random Access Memory)** – Temporary memory for active processes.
 2. **ROM (Read-Only Memory)** – Stores firmware and boot instructions.
 3. **Cache Memory** – High-speed memory close to the processor.
 4. **Registers** – Small storage inside the CPU for immediate operations.
 - **Conclusion:** Role of primary storage in system performance.
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Q5: Explain Network Topologies

- **Introduction:** Define network topology and its importance.
 - **Types of Network Topologies** (Explain with diagrams if possible):
 1. **Bus Topology** – Single backbone cable (simple but limited scalability).
 2. **Star Topology** – Central hub connects all devices (reliable but costly).
 3. **Ring Topology** – Devices connected in a circular manner (fast but failure-prone).
 4. **Mesh Topology** – Every device connected to every other device (highly reliable but expensive).
 5. **Hybrid Topology** – Combination of two or more topologies.
 - **Conclusion:** Choosing topology based on business needs.
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Q6: Differentiate Between Analog and Digital Computer

- **Introduction:** Define both analog and digital computers.
- **Comparison Table for Clarity:**

Feature	Analog Computer	Digital Computer
Data Type	Continuous data (waveforms)	Discrete data (binary)

Feature	Analog Computer	Digital Computer
Speed	Faster in real-time calculations	Slower but more accurate
Usage	Scientific and engineering applications	Business, education, gaming
Example	Thermometer, ECG machine	Laptops, desktops

- **Conclusion:** Importance of both types in various fields.
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Q7: Explain the Terms Search Engine, HTTP, HTML, and Web Browser

- **Introduction:** Explain their role in web browsing.
 - **Definitions:**
 1. **Search Engine** – Software that helps find information (e.g., Google, Bing).
 2. **HTTP (Hypertext Transfer Protocol)** – Protocol for web communication (e.g., `http://example.com`).
 3. **HTML (Hypertext Markup Language)** – Coding language for web pages (e.g., `<p>Hello</p>`).
 4. **Web Browser** – Application for accessing the web (e.g., Chrome, Firefox).
 - **Conclusion:** Importance of these components in internet browsing.
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Q8: Explain Features of MS Excel

- **Introduction:** Define MS Excel and its use in data management.
 - **Key Features** (Explain with examples):
 1. **Formulas & Functions** – SUM, AVERAGE, IF, VLOOKUP.
 2. **Charts & Graphs** – Pie, bar, and line charts for data visualization.
 3. **Pivot Tables** – Summarizing large datasets.
 4. **Conditional Formatting** – Highlighting cells based on criteria.
 5. **Data Validation** – Restricting data entry to specific formats.
 - **Conclusion:** Excel as a powerful tool for business analytics and automation.
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General Answering Tips:

- ✓ Use headings, subheadings, and bullet points for clarity.
- ✓ Include diagrams and real-world examples where applicable.
- ✓ Ensure proper structure (Introduction, Explanation, Conclusion).
- ✓ Use tables for comparisons when differentiating concepts.