

MP Board Class 10 Computer Question Paper with Solutions(Memory Based)

Time Allowed :3 Hours	Maximum Marks :70	Total questions :37
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General Instructions

Read the following instructions very carefully and strictly follow them:

1. Please check that this question paper contains 23 printed pages.
2. Q.P. Code given on the right hand side of the question paper should be written on the title page of the answer-book by the candidate.
3. Please check that this question paper contains 37 questions.
4. 15 minute time has been allotted to read this question paper. The question paper will be distributed at 10.15 a.m. From 10.15 a.m. to 10.30 a.m., the candidates will read the question paper only and will not write any answer on the answer-book during this period.

1. Define hardware and software with examples.

Solution:

Concept: A computer system is made up of two main components: **hardware** and **software**. They work together to perform computing tasks. Hardware provides the physical structure, while software provides instructions for operation.

Hardware: Hardware refers to the **physical components** of a computer that can be seen and touched. These parts perform input, processing, storage, and output functions.

Examples of Hardware:

- **Input devices:** Keyboard, Mouse, Scanner
- **Processing device:** CPU (Central Processing Unit)

- **Output devices:** Monitor, Printer, Speakers
- **Storage devices:** Hard disk, Pen drive, SSD

Software: Software refers to the **set of programs or instructions** that tell the hardware what to do. It cannot be touched but can be used to perform various tasks.

Examples of Software:

- **System software:** Windows, Linux, macOS
- **Application software:** MS Word, MS Excel, Google Chrome
- **Utility software:** Antivirus programs, Disk cleanup tools

Conclusion: Hardware and software are interdependent. Hardware cannot function without software, and software needs hardware to run. Together, they form a complete computer system.

Quick Tip

Remember: Hardware = Physical parts you can touch. Software = Programs or instructions that run on hardware.

2. What is an Operating System (OS)? Name two popular examples like Windows or Linux.

Solution:

Concept: An Operating System (OS) is the most important system software in a computer. It acts as a bridge between the user and the computer hardware and manages all basic operations of the system.

Definition: An **Operating System (OS)** is a system software that **controls and manages computer hardware and software resources** and provides a platform for running application programs.

Functions of an Operating System:

- **Process management:** Runs and manages programs.
- **Memory management:** Allocates and manages RAM.
- **File management:** Organizes files and folders.
- **Device management:** Controls input and output devices.
- **User interface:** Allows users to interact with the computer.

Examples of Operating Systems:

- **Windows** — Developed by Microsoft, widely used on personal computers.
- **Linux** — Open-source operating system used in servers, desktops, and mobile devices.

Conclusion: An Operating System is essential for the proper functioning of a computer, as it manages hardware resources and allows users to run applications efficiently.

Quick Tip

Remember: Operating System = Boss of the computer. It controls hardware and allows software to run.

3. What is the difference between RAM and ROM?

Solution:

Concept: RAM and ROM are two types of primary memory used in a computer system. Both are essential for storing data, but they differ in purpose, behavior, and functionality.

RAM (Random Access Memory): RAM is a **volatile memory** that temporarily stores data and programs currently in use by the computer. The data in RAM is lost when the power is turned off.

Features of RAM:

- Temporary storage
- Fast read and write operations

- Volatile (data lost when power is off)
- Used while running applications

Examples: DDR4 RAM, DDR5 RAM

ROM (Read Only Memory): ROM is a **non-volatile memory** that permanently stores important instructions required to start the computer. The data remains even when the power is turned off.

Features of ROM:

- Permanent storage
- Mostly read-only
- Non-volatile (data retained without power)
- Stores firmware like BIOS

Examples: BIOS chip, Firmware memory

Key Differences Between RAM and ROM:

Feature	RAM	ROM
Nature	Volatile	Non-volatile
Storage	Temporary	Permanent
Speed	Faster	Slower than RAM
Usage	Running programs	Booting and firmware

Conclusion: RAM is used for temporary working storage, while ROM is used for permanent instructions required for system startup and basic operations.

Quick Tip

Remember: RAM = Temporary, working memory. ROM = Permanent, startup memory.

4. Define a file and explain how it differs from a folder.

Solution:

Concept: In a computer system, data is organized using files and folders. They help in storing and managing information efficiently.

File: A **file** is a collection of related data or information stored on a storage device with a specific name. It can contain text, images, videos, programs, or any type of digital content.

Examples of Files:

- Text file: `notes.txt`
- Document file: `report.docx`
- Image file: `photo.jpg`
- Video file: `movie.mp4`

Folder: A **folder** (also called a directory) is a container used to **store and organize files and subfolders**. It helps keep data structured and easy to locate.

Examples of Folders:

- Documents folder
- Pictures folder
- School Projects folder

Difference Between File and Folder:

Feature	File	Folder
Definition	Stores data	Stores files and folders
Purpose	Contains information	Organizes information
Content	Text, images, videos, etc.	Files and subfolders
Icon	Specific to file type	Usually a folder icon

Conclusion: A file stores actual data, while a folder helps organize and manage multiple files and subfolders for easy access.

Quick Tip

Remember: File = Stores information. Folder = Stores and organizes files.

5. What is a web browser and a search engine? Give examples of each.

Solution:

Concept: The internet provides access to websites and information using tools like web browsers and search engines. Though they are often used together, they serve different purposes.

Web Browser: A **web browser** is a software application used to **access and view websites** on the internet. It allows users to open web pages, watch videos, download files, and interact with online content.

Examples of Web Browsers:

- Google Chrome
- Mozilla Firefox
- Microsoft Edge
- Safari

Search Engine: A **search engine** is an online tool that helps users **find information on the internet** by entering keywords or queries. It searches through billions of web pages and shows relevant results.

Examples of Search Engines:

- Google
- Bing
- Yahoo
- DuckDuckGo

Difference Between Web Browser and Search Engine:

Feature	Web Browser	Search Engine
Type	Software application	Online service/tool
Purpose	Access websites	Find information online
Usage	Opens web pages	Provides search results
Examples	Chrome, Firefox	Google, Bing

Conclusion: A web browser is used to access and display websites, while a search engine helps users locate information on the internet using keywords.

Quick Tip

Remember: Browser = Tool to open websites. Search Engine = Tool to find websites.

6. What is a computer virus, and how can antivirus software protect your system?

Solution:

Concept: Computers connected to the internet are vulnerable to harmful programs called viruses. To prevent damage and ensure safety, antivirus software is used.

Computer Virus: A **computer virus** is a malicious program designed to **harm, disrupt, or gain unauthorized access** to a computer system. It can spread from one computer to another through infected files, email attachments, downloads, or external devices like USB drives.

Effects of a Computer Virus:

- Slows down system performance
- Deletes or corrupts files
- Steals personal data
- Causes system crashes
- Displays unwanted pop-ups

Antivirus Software: Antivirus software is a program that **detects, prevents, and removes viruses and other malware** from a computer system. It acts as a security shield for the system.

How Antivirus Protects Your System:

- **Virus scanning:** Scans files and programs for threats
- **Real-time protection:** Monitors system activity continuously
- **Quarantine:** Isolates infected files
- **Removal:** Deletes harmful software safely
- **Updates:** Regular updates to detect new threats

Examples of Antivirus Software:

- Quick Heal
- Norton Antivirus
- McAfee
- Kaspersky

Conclusion: A computer virus is a harmful program that can damage data and system performance, while antivirus software helps protect the system by detecting and removing such threats.

Quick Tip

Remember: Virus = Harmful program. Antivirus = Protection against viruses.

7. Describe the primary functions of the Central Processing Unit (CPU).

Solution:

Concept: The Central Processing Unit (CPU) is the most important component of a computer system. It acts as the brain of the computer and performs all major processing tasks required to run programs and manage system operations.

Definition: The **Central Processing Unit (CPU)** is the main unit of a computer that **processes instructions, performs calculations, and controls the functioning of all other components.**

Primary Functions of the CPU:

- **Instruction Processing:** The CPU fetches instructions from memory, decodes them, and executes them step by step. This is known as the **Fetch–Decode–Execute cycle.**
- **Arithmetic and Logical Operations:** It performs mathematical calculations such as addition, subtraction, multiplication, and division, as well as logical operations like comparisons using the **Arithmetic Logic Unit (ALU).**
- **Control and Coordination:** The CPU controls and coordinates the activities of all hardware components, including memory, input devices, and output devices, using the **Control Unit (CU).**
- **Data Processing:** It processes raw data into meaningful information by executing program instructions.
- **Memory Management:** The CPU manages data transfer between RAM, storage devices, and other hardware components.
- **Input/Output Control:** It handles communication between input and output devices, ensuring smooth system operation.

Main Components of the CPU:

- **ALU (Arithmetic Logic Unit):** Performs calculations and logical decisions.
- **CU (Control Unit):** Directs and controls operations.
- **Registers:** Small high-speed storage locations for temporary data.

Conclusion: The CPU performs all essential processing tasks in a computer, including executing instructions, performing calculations, and controlling system operations, making it the brain of the computer.

Quick Tip

Remember: CPU = Brain of the computer. It processes instructions, performs calculations, and controls all operations.

8. Explain the difference between LAN (Local Area Network) and WAN (Wide Area Network).

Solution:

Concept: Computer networks allow multiple devices to connect and share data. Based on geographical coverage, networks are classified into types such as LAN and WAN.

LAN (Local Area Network): A **Local Area Network (LAN)** is a network that connects computers and devices within a **small geographic area**, such as a home, school, office, or building.

Features of LAN:

- Covers a limited area
- High data transfer speed
- Privately owned and managed
- Low cost of setup and maintenance

Examples:

- School computer lab network
- Home Wi-Fi network
- Office internal network

WAN (Wide Area Network): A **Wide Area Network (WAN)** is a network that covers a **large geographic area**, such as cities, countries, or even the entire world. It connects multiple LANs together.

Features of WAN:

- Covers large distances
- Lower speed compared to LAN
- Expensive infrastructure
- Managed by telecom companies or governments

Examples:

- The Internet
- Banking networks across countries
- Mobile communication networks

Difference Between LAN and WAN:

Feature	LAN	WAN
Full Form	Local Area Network	Wide Area Network
Coverage Area	Small area	Large geographic area
Speed	High	Lower than LAN
Cost	Less expensive	More expensive
Ownership	Private	Public or shared
Example	Home network	Internet

Conclusion: LAN is used for networking within a small area with high speed and low cost, while WAN connects networks across large distances and enables global communication.

Quick Tip

Remember: LAN = Small area network (home, school). WAN = Large area network (internet, worldwide).

9. Explain the steps to create, save, and print a document in MS Word.

Solution:

Concept: MS Word is a popular word processing software used to create, edit, format, and print documents. Understanding the basic steps helps users work efficiently.

Steps to Create a Document in MS Word:

1. Click on the **Start Menu**.
2. Search for and open **Microsoft Word**.
3. Select **Blank Document**.
4. Start typing the content using the keyboard.
5. Use formatting tools (bold, font size, alignment) if needed.

Steps to Save a Document:

1. Click on the **File** tab.
2. Select **Save As**.
3. Choose the location (Desktop, Documents, or folder).
4. Enter a **file name**.
5. Click the **Save** button.

Shortcut: Press **Ctrl + S** to quickly save the document.

Steps to Print a Document:

1. Click on the **File** tab.
2. Select **Print**.
3. Choose the connected printer.
4. Set printing options (number of copies, page range, orientation).
5. Click the **Print** button.

Shortcut: Press **Ctrl + P** to open the print menu.

Conclusion: Creating, saving, and printing documents in MS Word involves simple steps that allow users to prepare and share professional documents easily.

Quick Tip

Remember: Create = Open Word and type. Save = Ctrl + S. Print = Ctrl + P.

10. Describe the role of computers in education and healthcare.

Solution:

Concept: Computers play an important role in modern society by improving efficiency, accuracy, and accessibility in various fields. Two major areas where computers have made a significant impact are education and healthcare.

Role of Computers in Education:

- **Online Learning:** Students can attend virtual classes through platforms like video conferencing and e-learning websites.
- **Digital Study Materials:** E-books, PDFs, and online resources make learning more accessible and interactive.
- **Smart Classrooms:** Use of projectors, smart boards, and multimedia presentations enhances understanding.
- **Research and Information Access:** Students and teachers can access vast information using the internet.
- **Examinations and Assessments:** Online tests and automated grading save time and improve accuracy.

Role of Computers in Healthcare:

- **Medical Records Management:** Electronic Health Records (EHR) help store and retrieve patient data easily.

- **Diagnosis and Treatment:** Computers assist in medical imaging like X-rays, CT scans, and MRIs.
- **Hospital Management Systems:** Used for scheduling, billing, and patient tracking.
- **Telemedicine:** Patients can consult doctors remotely through video calls.
- **Medical Research:** Computers help analyze data and develop new medicines and treatments.

Conclusion: Computers have transformed both education and healthcare by making learning more accessible and improving medical services through faster diagnosis, better data management, and remote access to facilities.

Quick Tip

Remember: Education → E-learning, smart classes, online exams. Healthcare → Digital records, diagnosis, telemedicine.

11. Explain how to use basic formulas for addition and average in MS Excel.

Solution:

Concept: MS Excel is a spreadsheet software used for calculations, data analysis, and record keeping. Formulas in Excel help perform calculations automatically using cell references.

Addition Formula in MS Excel: Addition is used to find the sum of numbers stored in different cells.

Method 1: Using the PLUS (+) operator

1. Enter numbers in cells (e.g., A1 = 10, A2 = 20, A3 = 30).
2. Click on the cell where you want the result (e.g., A4).
3. Type the formula:

$$= A1 + A2 + A3$$

4. Press **Enter** to get the total.

Method 2: Using the SUM Function

1. Select the result cell.

2. Type:

$$= \text{SUM}(A1 : A3)$$

3. Press **Enter**.

Average Formula in MS Excel: The average formula calculates the mean value of a set of numbers.

Steps to Calculate Average:

1. Enter values in cells (e.g., B1 = 40, B2 = 60, B3 = 80).

2. Click on the result cell (e.g., B4).

3. Type the formula:

$$= \text{AVERAGE}(B1 : B3)$$

4. Press **Enter** to display the average.

Important Points:

- All formulas in Excel begin with an **equals sign (=)**.
- Cell ranges are written using a colon (e.g., A1:A5).
- Functions like SUM and AVERAGE save time and reduce errors.

Conclusion: Basic formulas like addition and average in MS Excel help perform quick and accurate calculations using simple operators or built-in functions.

Quick Tip

Remember: Addition → =SUM(A1:A5) Average → =AVERAGE(A1:A5)