

UNIT 6: Fundamental of Computer

Assignment Solutions

Multiple-Choice Questions (MCQs)

1. Which of the following is not a feature of a computer system?
 - a. Fast performance
 - b. Executing logical operations
 - c. Decision-taking capability
 - d. Never get tired

Ans. c

2. Which of the following defines a computer system more accurately?
 - a. Hardware
 - b. Software
 - c. Hardware, software and data
 - d. Data, information, hardware, and software

Ans. c

3. _____ is a special type of pen used to write text and select options on the LCD screen.
 - a. Stylus
 - b. PDA
 - c. Embedded computer
 - d. All of these

Ans. a

4. Which of the following best defines 'data'?
 - a. The output coming from the computer system
 - b. Arranging processed data
 - c. Report printed by the computer system
 - d. Raw facts and figures

Ans. d

5. Which of the following activities are performed by a computer system for a train reservation system?
 - a. Checking seat availability
 - b. Displaying arrival and departure time
 - c. Making reservation and printing tickets
 - d. All of these

Ans. d

6. Which of the following computer systems can be used while commuting by train, bus, or plane?
 - a. Mainframe computer
 - b. Personal computer
 - c. Supercomputer
 - d. Laptop

Ans. d

7. Which of the following computer systems is used in appliances such as washing machines and cars?
 - a. PDA
 - b. Laptop
 - c. Embedded computer
 - d. Mainframe

Ans. c

Very Short Answer Questions

1. What do you mean by computer hardware?

Ans. Computer hardware refers to the physical parts of a computer.

2. Specify an example of computer hardware and software.

Ans. A keyboard is hardware and an operating system is software.

3. Keyboard is an optional component of a computer (True or False).

Ans. False.

4. Give an example that can be interpreted as data.

Ans. A list of students and their marks can be termed as data.

5. What is the combination of IT and biotechnology known as?

Ans. Bio-informatics

Short Answer Questions-I

1. What do you understand by a computer and how is it useful for you?

Ans. A computer is an electronic device used to perform a variety of operations on the basis of a set of instructions called a program. It is useful to us for many operations such as arithmetic and logical calculations, communications, education, etc.

2. List down the strengths and weaknesses of a computer system.

Ans. The following are the strengths of a computer:

- Speed
- High Storage capacity
- Reliability
- Accuracy
- Consistency
- Versatility

The following are the weaknesses of a computer:

- No Power to Make Decisions
- No IQ
- No Heuristics

3. What are the various applications of computers in the field of entertainment?

Ans. The following are the various applications of computers in the field of entertainment:

- Computers are used for developing animation movies.
- They are also used for high quality special effects in movies. For example, Jurassic park.

4. What are the four basic constituents of a computer system?

Ans. The following are the basic constituents of a computer system:

- System Unit
- Monitor
- Mouse
- Keyboard

5. What do you mean by workstations?

Ans. A workstation is similar to that of personal computer; however, it has greater memory and more extensive mathematical abilities compared to a personal computer. Workstations can be connected to other workstations or personal computers to exchange data.

6. Define technological convergence.

Ans. Technological convergence denotes merging of two or more existing technologies to invent a completely new technology with multiple benefits. For example, a smartphone combines formerly-separated technologies, such as voice, data and video and make them operate on a single platform.

7. List the technologies that have emerged as a result of convergence of two or more technologies.

Ans. The following are the technologies which have emerged as a result of the convergence of two or more technologies:

- Digital convergence
- Messaging convergence
- Media convergence
- Content convergence

Short Answer Question-II

1. Define technological convergence.

Ans. Technological convergence denotes merging of two or more existing technologies to invent a completely new technology with multiple benefits. Let's try to understand this concept with the

help of an example. A smartphone combines formerly-separated technologies, such as voice, data and video and make them operate on a single platform. In a smartphone, these technologies work as a shared resource and interrelate with each other. This eliminates the need of using multiple devices; thus, instead of carrying separate devices, such as a mobile phone, camera, pager and digital organizer, one can simply carry a smartphone, which is capable of performing the tasks of all these devices.

2. List the technologies that have emerged as a result of the convergence of two or more technologies.

Ans. The following are the technologies that have emerged as a result of the convergence of two or more technologies:

- Digital Convergence:** It refers to the merger of the Internet, telecommunication and leisure industries.
- Messaging Convergence:** It refers to the integration of text and voice messages. For example, text SMS, voice SMS, Interactive Voice Response (IVR), Multimedia Messaging Service (MMS), etc.
- Content Convergence:** It refers to the integration of content from various sources on the Internet.
- Media Convergence:** It refers to the integration of various media.

3. What do you mean by workstations?

Ans. The processing of workstations is similar to that of personal computers; however, workstations have greater memory and more extensive mathematical abilities. Workstations can be connected to other workstations or personal computers to exchange data. Generally, such computers are used in cases where a high level of computational abilities is required, such as in scientific, industrial and business environments.

4. List down the strengths and weaknesses of a computer system.

Ans. The following are the strengths and weaknesses of a computer system:

- Strengths:**
 - Speed:** Computers perform at a great speed and have the capability of processing even the most complex computations in a matter of seconds.
 - Storage capacity:** Computers allow users to store a large amount of data at a single location.
 - Reliability:** The electronic components in modern computers make them more reliable as they rarely break or fail.
 - Accuracy:** Computers have the ability to provide accurate results as they perform computations with utmost accuracy.
 - Consistency:** A computer generates consistent results, if provided the same input and processes.
 - Versatility:** Computers are able to perform different tasks in a variety of domains.
- Weaknesses:**
 - No Power to Make Decisions:** Computers are unable to take decisions.
 - No IQ:** Computers are machines that do not have self-intelligence.
 - No Heuristics:** Computers are unable to learn from their past experiences.

5. What are the various applications of computers in the field of entertainment?

Ans. Some common applications of computers in the field of entertainment are:

- **Music:** Computers can be used to access and download millions of songs available on several websites. We can either stream music or directly download it to our computer. Artists can also record their music and apply special audio effects using computer.
- **Movies:** Computers are used in various aspects such as applying life-like special effects in movies, displaying movies in high-definition on screens of multiple sizes, creating animation movies, etc.
- **Gaming:** Computers are used to design as well as play high-end, graphics-intensive games, which are very popular especially among youth.

Long Answer Questions

1. Do you think a computer system can be used in the fields of business and medicine? Why?

Ans. Computers have become a necessity for performing various kinds of business activities, such as billing, budgeting, accounting and reporting. For example, whenever you want to pay bill in a shopping mall, you are benefited with the power and speed of computers. For example, Calc or Microsoft Excel is a software application used for data calculation and preparing charts. Computer also plays a vital role in the field of medicine and health care. For instance, it handles the activities of monitoring patients, diagnosing diseases, and so on. There are also many computerized equipment and devices, such as pacemaker that is used to fix the heart-related problems of a patient. Medical students may also practice surgical procedures by using virtual labs. For example, Hospital Management System is a software application, given by SoftOasis, used for ward and patient management, hospital records management, blood bank management, etc.

2. In what ways a computer system can be applied in education and research?

Ans. Computers are extensively used in classrooms, libraries and laboratories for preparing reports, displaying information, developing projects and providing interactive learning aids. It is also possible to create virtual classrooms through computers if the instructor and students are situated in two separate geographical regions and read magazines and journals online. For example, GCompris, JumpStart, KidPix and Tux Paint are some software applications for child education.

Research scholars and scientists utilize computers to experiment, design and develop projects. A large number of sophisticated instruments and devices are used in all facets of research and development activities. For example, nuclear reactions in large nuclear reactors are controlled by computers. Computer aided devices can forecast the weather and most natural disasters, such as tsunami and earthquake. Computer Assisted/Aided Qualitative Data Analysis Software (CAQDAS) assists in conducting qualitative researches, such as transcription analysis, coding and text interpretation, recursive abstraction, content analysis, discourse analysis, etc.

3. How computer systems can be applied in communications?

Ans. In modern world, computers play a big role in public as well as corporate communications. The following are the ways in which computers can be used in communication:

- a. E-mail, nowadays, is a primary method of communication in any organization. A company may have its own e-mail server or it can take services from a vendor to implement its e-mail services.
- b. Computers can be used to increase a person's or a company's presence on the Internet by launching their own website. This allows implementation of various services such as comments and chat boxes.
- c. Video conferencing is also an advanced method of communication that uses computers. It is more interactive than any other digital means of communication. This is so because it can be used for both verbal and non-verbal communication.

4. Do you think computer systems can be applied in the field of manufacturing? Why?

Ans. Manufacturing of any product at any skill require no logic, but repetitive work with accuracy and speed. Computers are better than human being at doing repetitive tasks with high speed. It is a challenge to regulate and control a real-time manufacturing process, such as preparation and packaging of soft drinks. Such challenges can be handled efficiently using computers. In manufacturing, all the activities are automated and controlled by computers. Manufacturing activities, such as putting the cork on the bottle, are accomplished by real-time computer software because it requires high precision and accuracy. This also reduces cost of manufacturing to a great extent.

5. How computer systems are implemented in governance and defense?

Ans. Governments generally have to deal with a large amount of data related to the population governed by them. Since computers have ability to store and handle large amount of data, they prove to be quite useful for tasks involving huge amount of data. Computers are used by the government to maintain or deal with bulk of data, such as maintaining census details, measuring per capita income, reserving tickets, paying bills and taxes, etc.

Computers are used by the military staff to perform many important tasks, such as evaluating the trajectories of missiles and broadcasting information. For example, Distributed Common Ground System-Army (DCGS-A) is an application developed for Army specifications by a consortium of defense contractors.

6. What are the basic constituents of a computer?

Ans. The main components of a computer are explained as follows:

- **System Unit:** Consists of various smaller components, such as Motherboard, Hard disk, Random Access Memory (RAM), Central Processing Unit (CPU) and Sound card.
- **Monitor:** Displays the output of a computer. It is television-like equipment which can be Cathode Ray Tube (CRT), Liquid Crystal Display (LCD) and Light Emitting Diode (LED).

- **Mouse:** Refers to a pointing device that perfectly fits in your palm and allows you to perform certain activities on screen, such as clicking a button and placing the cursor at a specific location.
- **Keyboard:** Refers to a device that contains keys to feed information into a computer.

Some hardware components are essential for working on a computer while some components are optional and can be appended or disconnected from a computer, as and when required. For example, Central Processing Unit (CPU), hard disk, RAM, display/video card, keyboard, mouse, monitor and motherboard are examples of essential components of a computer; while, printer, scanner, modem, CD-ROM/DVD drive, speakers, pen drive, Webcam and floppy drive are examples of non-essential components of a computer.

7. Computers are unable to take decisions on their own; instead, they depend upon the input being provided by humans. Give explanation in support of your answer.

Ans. Computers are machines that work according to a set of given instructions given to them. These instructions are called programs. Since computers don't have any self-intelligence, they depend completely on humans to inform them about the task to be performed next. Also computers are not able to learn from their past experiences. So, they do not have any saved memory about the solution they worked on previously. It implies that when a computer commits an error once, then it would commit the same mistake again in a similar situation. We can rely on the computers to complete only those tasks that are repetitive in nature and don't require taking decisions at any step. Since computers are much faster and efficient than human beings in doing repetitive tasks, they are best suited for these kinds of tasks only and hence, should not be considered as a complete replacement of manpower.