

Decimal equivalent of  $(A)_{16} = 10$

Decimal equivalent of  $(13)_8 = 11$

Comparing all the decimal numbers , 10 is the smallest

That is,  $(A)_{16}$

31. Name the character representation coding scheme developed by India and approved by the Bureau of Indian Standards ( BIS ). [ March 2015, Score 1 ]

Ans. ISCII

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## Chapter 2 – Components of the Computer System

1. Write the full form of HDMI [ March 2020, Score 1 ]

Ans. High Definition Multimedia Interface

2. Name the software that translates assembly language program into machine language program. [ March 2020, Score 1 ]

Ans. Assembler

3. Categorize devices given below into input devices and output devices.  
Joystick, Scanner, Microphone, Printer, Mouse, VDU, Speaker. [ March 2020, Score 2 ]

Ans. Input Devices: Joystick, Scanner, Microphone, Mouse

Output Devices: Printer, VDU, Speaker

4. Differentiate RAM and ROM. [ March 2020, Score 3 ]

Ans.

RAM	ROM
It is faster than ROM	It is a slower memory
It allows reading and writing	Allows reading only
volatile	Non volatile

5. Explain any three common methods used for e-waste disposal [ March 2020, Score 3 ]

Ans. a) Reuse: It refers to second hand use or use after slight modification.

b) Incineration: It is a controlled and complete combustion process, in which waste materials are burned in specially designed incinerators at high temperatures.

c) Recycling of e-waste: It is the process of manufacturing new products from e-waste.

6. What are the major functions of an operating system ? [ July 2019, Score 2 ]

**Ans.** Important functions of Operating systems are:

1) Process management : 2) Memory management : 3) File management :

4) Device management :

7. Compare Freeware and Shareware. [ July 2019, Score 2 ]

**Ans.**

Freeware	Shareware
All features are free	All features are not available
Can be distributed free of cost	Permission is required for distribution.

8. a) What are CPU registers? [ July 2019, Score 1 ]

b) Explain any two types of CPU registers. [ July 2019, Score 2 ]

**Ans.** a) The memory locations inside the CPU are called Registers.

b) 1) Accumulator: It stores the result of ALU operations.

2) Instruction Register (IR): It stores the instruction to be executed.

9. Define following terms [ July 2019, Score 3 ]

a) Assembler [ Score 1 ]

b) Interpreter [ Score 1 ]

c) Compiler [ Score 1 ]

**Ans.** a) An assembler is a software which converts assembly language into machine language.

b) An interpreter is a software which converts high level language into machine language. It translates and executes one statement at a time.

c) A compiler is a software which converts high level language (source code) into machine language (object code). It scans the entire program in a single run.

10. What are the importance of secondary storage devices in computer system ?

[ July 2019, Score 3 ]

**Ans.** Secondary memory is also known as auxiliary memory. It is used to store large volumes of programs and Data. Magnetic devices, Optical disks and Semiconductor devices are commonly used secondary storage. Secondary memory has a high storage capacity than Primary memory. Secondary memory is cheaper than Primary memory.

Secondary storage devices are:

Magnetic memories: Magnetic tape, Hard disk

Optical memories: CD, DVD, Blue Ray DVD

Flash memory devices: USB Flash memory, Flash memory card.

11. What is the importance of registers in computer system? Name any two registers.

[ March 2019, Score 2 ]

**Ans.** The memory locations inside the CPU are called Registers. Accumulator, Memory Address Register, Program Counter, Instruction Register are some registers.

**12.** What do you mean human ware? Give any examples. **[ March 2019 , Score 2 ]**

**Ans.** Human ware refers to the people who use the computer. For example: Programmers, System Analyst, Data entry operators etc. They are also called Skin ware or peopeware.

**13.** Explain any three freedom designed by FSF for software. **[ March 2019 , Score 3 ]**

**Ans.** Free and Open source software ( FOSS ) is a software that can be used freely, copy, modify and redistribute. The four essential freedoms are:

Freedom 0:- The freedom to run the program as you wish, for any purpose .

Freedom 1:- The freedom to study how the program works.

Freedom 2:- The freedom to distribute copies.

Freedom 3:- The freedom to improve programs and release the improvements to the public

**14.** As a student, explain any three approaches that you can adopt to promote 'Green Computing'.

**[ March 2019 , Score 3 ]**

**Ans.** Some of the approaches are:

Turn off computer when not in use. Use power saver mode. Use laptops rather than desktops. Take printouts only if necessary.

**15.** Write the full form of HDMI **[ July 2018, Score 1 ]**

**Ans.** High Definition Multimedia Interface

**16.** Name any four parts on the mother board **[ July 2018, Score 2 ]**

**Ans.** CPU socket, Peripheral ports, Expansion slots and power connector.

**17.** Compare RAM and ROM **[ July 2018, Score 2 ]**

**Ans.**

RAM	ROM
It is faster than ROM	It is a slower memory
It allows reading and writing	Allows reading only
volatile	Non volatile

**18. a)** "e-Waste is one of the major problems which we are facing all over the world". **[ July 2018 ]**

Justify the statement. **[ Score 1 ]**

b) Explain e-Waste disposal methods. **[ Score 2 ]**

c) Define the term, green - computing. How can you implement green - computing? **[ Score 2 ]**

**Ans.** a) e - Waste refers to un-wanted or non-working electronic products. They cause serious health and pollution problems. They contain harmful metals such as lead, cadmium, mercury etc. 50 million

tons of e-Waste are produced each year. Global mountain of e-Waste is expected to continue growing at 8% per year.

b) e-Waste disposal methods are:

a) Reuse: It refers to second hand use or use after slight modification.

b) Incineration: It is a controlled and complete combustion process, in which waste materials are burned in specially designed incinerators at high temperatures.

c) Recycling of e-waste: It is the process of manufacturing new products from e-waste.

d) Land filling: It is the widely used method for the disposal e-waste. Soil is excavated and e-waste is buried in it.

c) Green computing is the use of computer and related resources in an environmentally responsible manner. To promote green computing, the following four complementary approaches are employed: Green Design, Green manufacturing, Green Use and Green Disposal.

**19.** Write the full form of USB

**[ March 2018, Score 1 ]**

**Ans.** Universal Serial Bus

**20.** Name the four e-Waste disposal methods

**[ March 2018, Score 2 ]**

**Ans.** Reuse, Incineration, Recycling and Land filling

**21.** What are the features of RAM ?

**[ March 2018, Score 2 ]**

**Ans.** RAM is Random Access Memory and is used to temporarily store data and instructions. RAM is a semiconductor memory. RAM provides a limited storage capacity such as 2GB, 4GB etc. . RAM is volatile in nature. ie, it will lose data when the power is switched off.

**22.** a) Write a detailed classification of software.

**[ March 2018, Score 2 ]**

b) Some programming languages use compiler whereas some use interpreter. What makes them different ?

**[ Score 2 ]**

c) What do you mean by free software ?

**[ Score 1 ]**

**Ans.** a) A set of programs written for a computer is called software. They are classified into two . System software and Application Software.

A system software is a software designed to control the hardware. It provides an environment for the working of application programs. It is classified into three: Operating system, Language Processor and Utility software. Application software is a set of programs designed for a specific task. It is designed for end user. Application software are of two types: General purpose and specific purpose application software.

b) A compiler is a software which converts high level language (source code) into machine language (object code). It scans the entire program in a single run. If there is any error in the program, the compiler provides a list of errors at the end of compilation. If there are no errors, the compiler will generate object file. An interpreter is a software which converts high level language into machine language as line by line manner. It translates and executes one statement at a time.

c) A free software gives the user the freedom to use, copy, distribute, examine, change and improve the software.

**23.** Which one of the following is used to connect a projector to a computer? [ July 2017, Score 1 ]

- a) USB port                      b) PS/2 port                      c) Parallel port                      d) VGA port

**Ans.** VGA port.

**24.** In an office, various kinds of reports and account statements are to be prepared. Name the two types of software needed and explain how they satisfy the requirement. [ July 2017, Score 2 ]

**Ans.** Word processing software. This is used for creating and modifying documents. It helps to create, edit, format and print textual matters easily. eg: MSWord, Open Office Writer etc.

Spreadsheet software: it allows us to perform calculations. MS Excel, Open Office Calc etc.

**25.** Briefly describe the different types of memories used in computers. [ July 2017, Score 5 ]

**Ans.** Memory is used to store data and instructions. Memory can be classified into two: Primary memory and Secondary memory.

Primary memory holds data and results temporarily. Secondary memory on the other hand holds data and information permanently. Primary memory is volatile as secondary memory is non-volatile.

Primary memory: There are three types of Primary memory: Random Access Memory (RAM), Read Only Memory (ROM) and Cache memory.

RAM ( Random Access Memory ): RAM is volatile and is used to temporarily store data and instructions. Primary memory is a semiconductor memory.

ROM ( Read Only Memory ): ROM is non-volatile and is used to store start-up or bootstrap programs (Firmware).

Types of ROM: There are three types of ROM's, PROM, EPROM and EEPROM.

Cache memory: Cache memory is a high speed memory placed between main memory and CPU to increase the speed of execution. Frequently used data and programs are placed in the cache memory.

### Secondary memory

Secondary memory is also known as auxiliary memory. It is used to store large volumes of programs and Data. Magnetic devices, Optical disks and Semiconductor devices are commonly used secondary storage. Secondary memory has a high storage capacity than Primary memory. Secondary memory is cheaper than Primary memory.

#### Magnetic Storage Device

Magnetic storage devices use plastic tape or disks coated with magnetic materials. Data is recorded magnetically.

#### Optical Storage Devices

Optical disk uses laser rays for reading and writing data. Data is written in the form of pits and lands ( 0 and 1 ).

#### Flash Memory Devices

Flash Memory is an electronic non-volatile storage medium which can be electrically erased and re-programmed ( EEPROM ). It is used in mobile phones, digital camera etc. BIOS in PC is usually stored in flash memory

26. USB port stands for.....

[ March 2017, Score 1 ]

- a) Uniform Serial Bus      b) Universal Serial Bus      c) Uninterruptable Serial Bus  
d) Updatable Serial Bus

**Ans.** b) Universal Serial Bus

27. A ..... is a computer peripheral that allows you to connect and communicate with other computers via telephone lines.

[ March 2017, Score 1 ]

**Ans.** Network Interface Card

28. Arrange the following memory or storage devices on the base of their operation speed in ascending order.

[ March 2017, Score 2 ]

- a) Hard disk      b) Cache      c) RAM      d) Registers

**Ans.** Hard disk – RAM – Cache - Registers

29. Compare Dot Matrix Printer ( DMP ), Ink jet printer, Laser printer and Thermal printer on the basis of their working speed, quality of printing and expense for printing.

[ March 2017, Score 5 ]

**Ans.**

Features	Laser Printers	Inkjet Printers	Thermal Printers	Dot Matrix Printers
Working Speed	20 pages/ minute	6 pages/minute	150 mm per second	30-550 char. / min.
Quality	Best	Good	Poor	Very poor
Expense	Highly Expensive	costly	Economical	Cheap

30. Which one of the following CPU registers holds address of next instruction to be executed by the processor ?

[ July 2016, Score 1 ]

- a) Accumulator      b) Instruction Register(IR)      c) Memory Address Register      d) Program Counter (PC)

**Ans.** d) Program Counter ( PC )

31. List e-Waste disposal methods.

[ July 2016, Score 2 ]

**Ans.** Reuse, Incineration, Recycling and Land filling

32. What do you mean by utility software? List any four types of utility software with their use.

[ July 2016, Score 5 ]

**Ans.** Utility software: A utility program allows a user to perform maintenance type tasks. It helps in the performance of a computer. Some of the commonly available utilities are given below.

1. Compression tools: This utility reduces the size of a file. Winzip, WinRAR, 7Zip are commonly used compression tools.
2. Disk defragmenter: The disk defragmenter rearranges files on the computer, thereby increasing access speed.
3. Backup software: Backup means copying files. It helps to preserve data in case of hardware failure etc.
4. Antivirus software: Antivirus software are used to detect and remove computer viruses. Commonly used antivirus programs are Quick heal, Avast, Norton, Kaspersky etc.

**33.** Mr. Rajmohan wants to buy a computer. He is an engineer by profession. He wants a device which can be used to draw directly on the monitor screen. **[ March 2016, Score 3 ]**

a) Suggest him an input device **[ Score 1 ]**

b) Suggest him any four practices of green computing. **[ Score 2 ]**

**Ans.** a) Light Pen.

b) Green Design, Green Manufacturing, Green use and Green disposal.

**34.** Explain any five commonly used secondary memory devices. **[ March 2016, Score 5 ]**

**Ans.** Some of the commonly used secondary memory devices are:

**Hard disk:** A hard disk consists of a metallic disk, coated with a magnetic material, which is placed inside a container. It has high storage capacity and is durable. It is used as secondary storage in a computer.

**Compact disk (CD):** A Compact Disk is an optical disk capable of storing data using laser. It is available in two forms CD-R ( Recordable ) and CD-RW ( Rewritable ).

**Blue ray DVD:** Blue ray is an optic disk which can store huge volumes of data than a CD. Blue –violet laser has shorter wave length and offer more precision in focusing. It's capacity ranges from 25 GB to 50 GB.

**USB Flash drive:** Flash drive is a small storage device, consisting of flash memory typically in the size of a human thumb. It is portable and is available in different capacities.

**Flash memory card:** A flash memory is an electronic storage device for storing digital information. They are commonly used in mobile phones, digital camera etc.

**35.** List and explain the different methods for disposing electronic waste. **[ July 2015, Score 2 ]**

**OR**

Consider that NSS volunteers of your school have taken up a campaign to educate your friends in other schools to reduce e-Waste. Write four captions (methods) for the campaign through which students can reduce the volume of e-Waste produced.

**Ans.** Following methods are used for e-waste disposal.

a) Reuse: It refers to second hand use or use after slight modification.

b) Incineration: It is a controlled and complete combustion process, in which waste materials are burned in specially designed incinerators at high temperatures.

c) Recycling of e-waste: It is the process of manufacturing new products from e-waste. Monitors, Hard disks, laptops etc can be recycled.

d) Land filling: It is the widely used method for the disposal e-waste. Soil is excavated and e-waste is buried in it.

**OR**

1. Stop buying unnecessary electronic devices.

2. On damage, try to repair it instead of buying a new one.

3. Try to recycle electronic devices.

4. Buy products with good warranty and take back policies.

36. Write an example of an operating system that is a free and open source software.

[ July 2015, Score 1 ]

**Ans.** Linux / Ubuntu

37. Almost all desktop computers have keyboard and mouse as their standard input devices. List and explain any other five input devices used to enter data into a computer. [ July 2015, Score 5 ]

**Ans.** 1) Light pen : A light pen is a pointing device in the form of a pen. It is used to select objects directly from the screen. It uses a light detector. They are used in CAD (Computer Aided Design), and drawing purpose (Engineers and Artist).

2) Touch Screen: A touch screen is an input device that operates by touching the screen. It is commonly used in Tablet PC, Mobile phone etc. It is also used in railway stations and ATM machines

3) Graphic tablet: A graphic tablet is an input device that enables the users to hand draw images, graphics etc. It consists of a flat surface on which users can draw.

4) Touchpad : A touchpad is a pointing device used in portable computers. They are used as a substitute for mouse. It is operated using finger.

5) Joystick : Joystick is a device that enables the users to quickly move on the screen. It is used for playing Games, Simulation and Robotics. It has a lever which can be moved in any direction.

38. a) Differentiate between a compiler and an interpreter.

[ March 2015 , Score 2 ]

b) C++ uses the .....language processor for translation.

**Ans.** a) A compiler is a software which converts high level language (source code) into machine language (object code). It scans the entire program in a single run. If there is any error in the program, the compiler provides a list of errors at the end of compilation. If there are no errors, the compiler will generate object file. An interpreter is a software which converts high level language into machine language as line by line manner. It translates and executes one statement at a time.

b) Compiler.

39. What are the types of memories used in computers ?

[ March 2015 , Score 6 ]

**Ans.** Memory is used to store data and instructions. Memory can be classified into two: Primary memory and Secondary memory.

Primary memory holds data and results temporarily. Secondary memory on the other hand holds data and information permanently. Primary memory is volatile as secondary memory is non-volatile.

Primary memory: There are three types of Primary memory: Random Access Memory (RAM), Read Only Memory (ROM) and Cache memory.

RAM ( Random Access Memory ): RAM is volatile and is used to temporarily store data and instructions. Primary memory is a semiconductor memory.

ROM ( Read Only Memory ) : ROM is non-volatile and is used to store start-up or bootstrap programs (Firmware).

Types of ROM: There are three types of ROM's, PROM, EPROM and EEPROM.



Cache memory: Cache memory is a high speed memory placed between main memory and CPU to increase the speed of execution. Frequently used data and programs are placed in the cache memory.

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Magnetic Storage Device : Magnetic storage devices use plastic tape or disks coated with magnetic materials. Data is recorded magnetically.

Optical Storage Devices : Optical disk uses laser rays for reading and writing data. Data is written in the form of pits and lands ( 0 and 1) .

**Flash Memory Devices** : Flash Memory is an electronic non-volatile storage medium which can be electrically erased and re-programmed ( EEPROM ). It is used in mobile phones, digital camera etc. BIOS in PC is usually stored in flash memory.

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## **Chapter 3 – Principles Of Programming and Problem Solving**

1. Write any two limitations of flowchart?

[ March 2020, Score 2 ]

**Ans.** Flowcharts are very time consuming.

a. Any change or modification in the logic usually requires a completely new flowchart.

2. Define the following:

[ March 2020, Score 3 ]

i) syntax error

ii) Logical error

iii) Runtime error

**Ans.** i) Syntax error : Syntax error occurs due to incorrect use of program statement. For example: undefined variable, incorrect words etc.

ii) Logical error : Logical error is an error in planning the logic of a program.

ii)Run time error : Errors that occur during execution of a program are called run time errors. For example, 'Division by Zero' is a run time error.

3. Consider the following algorithm

[ March 2020 ]

Step 1: start

Step 2: N=1

Step 3: Print N

Step 4: N=N+1