

**BALASORE SCHOOL OF
ENGINEERING, BALASORE**

STUDY MATERIAL



BRANCH :-CS&E

SUBJECT :-Computer System Application

SUBJECT CODE:- Th-1(b)

SEMESTER :-2nd

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CHAPTER-1

Short Questions (2 Marks)

1. What is MICR ? (2018-w-new)

Ans: MICR stands for Magnetic Ink Character Recognition. It is a mechanism of recognizing a strip of data encode in magnetic ink through a MICR device.

2. What is MIPS ? (2017-w-new)

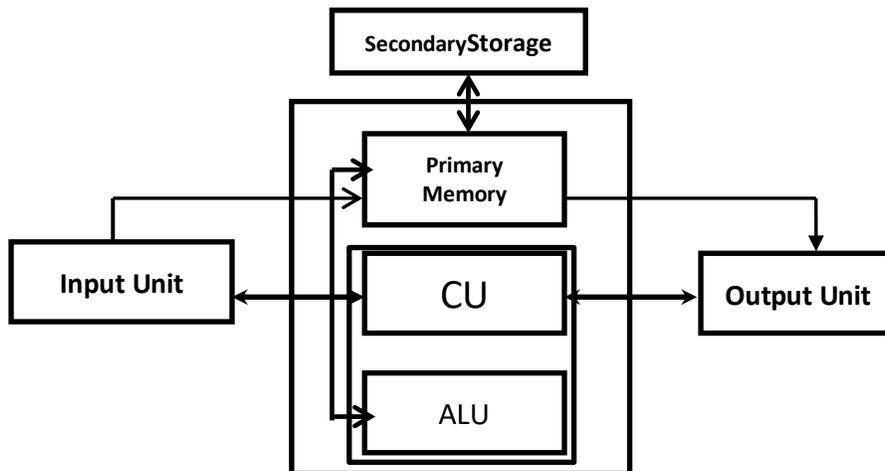
Ans: MIPS stands for Million instructions per second. It is measure for judging the speed of operation of a digital computer. The more the MIPS of a computer, the faster it is.

3. Name different components used in different generation of computer. (2017-w-new)

Ans: 1st Generation : Vaccum Tube
2nd Generation : Transister
3rd Generation : Integrated Circuit (IC)
4th Generation : LSI and VLSI circuits and Microprocessor.
5th Generation : ULSI (Ultra Large Scale Integrator)

4. Define main block of computer system. (2016-w-new) 2019(s)-3

Ans:



Main Block of computer system are:

- i) Input device (Mouse, Keyboard, etc.)
- ii) Processing Unit (CPU)
- iii) Output device (Printer, VDU, etc.)
- iv) Power Back-up (UPS)

5.-Define DPI , CPS?(2016)

Ans-DPI- it Stands for "Dots Per Inch." DPI is used to measure the **resolution** of an image both on screen and in print.

CPI-(Characters Per Second) The measurement of the speed of a serial printer or the speed of a data transfer between hardware devices or over a communications channel. Characters per second (**cps**) is equivalent to bytes per second (bps)

6.-what is BIOS?(2017)

Ans-Stands for "Basic Input/Output System." The BIOS is a program pre-installed on Windows-based computers (not on Macs) that the computer uses to start up. The CPU accesses the BIOS even before the operating system is loaded. The BIOS then checks all your hardware connections and locates all your devices. If everything is OK, the BIOS loads the operating system into the computer's memory and finishes the boot-up process.

7.-What is cache memory?(2017)

Ans-Cache Memory:

It is placed between CPU & Main memory. It is faster than main memory. It compare speed mismatch between CPU & main memory. It is used to store instruction which are repeatedly used in program.

8. What is ALU?[2019(W)-1.I]

An arithmetic logic unit (ALU) is a major component of the central processing unit of a computer system. It does all processes related to arithmetic and logic operations that need to be done on instruction words. In some microprocessor architectures, the ALU is divided into the arithmetic unit (AU) and the logic unit (LU).

9. Differentiate between Analog and Digital Computer. (2018)

Analog Computer	Digital Computer
<ul style="list-style-type: none"> • These computers work on analog data such as variation in temperature, pressure, speed, voltage, etc. • Rarely used in some particular area • Speed and accuracy are not high 	<ul style="list-style-type: none"> • These computers are general purpose computers work on digital/binary data. • Widely used everywhere. • Speed and accuracy are very high.

Medium Type Questions (5 Marks)

Q.1 Discuss different generation of Computer. (2016-S-new), (2017-S under 6 marks) 2019-(s)-2-a

1 st Generation
<ul style="list-style-type: none"> • It is from (1940-1956) • Vaccum Tube is used as Principal component. • It is huge in size. • It is very expensive to operate. • It has limited storage capacity. • Ex.- UNIVAC, ENIAC. • It use low level programming language.

2nd Generation

- It is from (1956 – 1963)
- Transistor is used as principal component.
- It is smaller than 1st generation.
- It is less expensive than 1st generation.
- It has large storage capacity than 1st generation.
- IBM 1620, IBM7090
- It is used high level programming language.

3rd Generation

- It is from (1964-1971)
- Integrated circuit is used as major component.
- These computers are smaller, cheaper and more reliable.
- It used high level language such as COBOL and FORTRAN.
- It is less expensive than other generation.
- Ex- IBM 370 series.

4th Generation

- It is from 1971 to present.
- Microprocessor are used in this generation.
- These computers are smaller, cheaper , faster and more reliable than previous generation.
- It used high level language for programming C, C++, Java, etc.
- It consume less electricity & produce less heat.
- Ex- The computer used now a days, HCL, Lenovo, DELL, HP, etc.

Q.2 Difference between RAM & ROM.[2019(W)2.B]

RAM	ROM
<ul style="list-style-type: none">• Random access memory.• It is volatile in nature.• It is a read & write memory. We both read data & write in 'RAM'• It is divided into <u>SRAM</u>: Static Ram (It hold data without an external refresh).• <u>DRAM</u>: Dynamic RAM must be	<ul style="list-style-type: none">• Read only memory.• It is non-volatalic in nature.• Here we can only read data from RAM, can not write anything• It is divided into : <u>PROM</u>:- Programmable read only memory <u>EPROM</u>: Erasable programmable

refreshed in a second to hold data

read only memory.
EEPROM: Electrically Programming
read only memory.

Q.3 Write short notes on CDROM, Printer. (2017-w-new) [3 ½ Marks]

i) CDROM:-

- * It is optically read only memory.
- * CD is made of resin such as polycarbonate.
- * It is coated with a material which is highly reflective in nature(Aluminium)
- * It is used for data backup.
- * Other backup secondary memory are :
 - Floppy disc
 - Pendrive
 - External memory chip.

Q.4 Differentiate between Impact / Non-Impact Printer.

Ans:

ii) PRINTER :

- * It is a popular output device.
- * It produces the output of result, program, data.
- * It is basically 2 types.

IMPACT

1. It has a Physical contact between print head and paper while printing.
2. It used an electro-mechanical mechanism that cause a hammer or pin to strike on ribbon or paper.
3. Ex.- dot-matrix Printer, Chain Printer

NON-IMPACT

1. It has no physical contact between print head and paper while printing.
2. It doesnot use previous process. It use thermal chemical, electrostatic laser beam to print data on paper.
3. Ex.- Inkjet, laser, thermal Printer

Q.5 Discuss the Classification of a computer ?(2017-W-New)

Ans.- All the modern Computer are broadly classified into the following three categories.

i) Analog computer ii) Digital Computer iii) Hybrid computer

- i) **Analog Computer** :- Analog Computer are mostly used in industries in process. Control activities. These computer works on analog data such as variation in temperature, pressure, speed, voltage etc.
- ii) **Digital Computer** :- Most of the computer, we see and use today, are digital computers. These computers are general purpose computers, which work on digital / binary data. The speed and accuracy with which these computers work are very high.

iii) **Hybrid computer** : 2019-s-1-a

- Hybrid computers are having features which are common to both analog computers and digital computers. Practically such computers are used to control the entire process. The analog features of such computer enables it to measure the physical quantities such as temperature, pressure, voltage level etc.

Based on Processing Capability :-

i) Super Computer

ii) Main frame

iii) Mini computer

iv) Personal computer

(i) **Super Computer** :- Super computer are most powerful computer. These computer are specially designed to maximize the processing of Hosted point instructions. This is possible because of parallel processing technique which implements multiple processor to work in parallel manner.

Government specially used this type of computer for their different calculations and heavy jobs and different industry. This computer is not used as PC in a home neither by student in a college. In most of the Hollywoods movies it is used for animation purpose and helps to forecasting weather reports worldwide.

(ii) **Mainframe Computer** :- Another gain in computers after the super computer in mainframe, which can also process millions of instruction per second and capable of accessing billions of data.

These computer are characterize by

- Large primary memory
- Substantiated processing capabilities (MIPS)
- Substantiated amount of peripheral devices that can be attached
- Ability to handle large computer application.

(ii) **Mini Computer** :-

This computer is next in his line but less than mainframe in work and performance. These are the computer, which most preferred by the small type of business personals, college etc.

These computers are characterized by the following typical features.

- Fairly large memory
- Medium Scale processing capability i.e. lesser than mainframe but higher than personal.
- Can connect up to 500 terminals on LAN
- Supports wide range of application

(iv) **Personal Computer** :-

The smallest and least expensive computers are micro computers or personal computers popularly known as Pc. This is the most popular class of computer used in most of the application as they are having the following typical features.

- These computers are portable.
- They require minimum power
- Memory capacity sufficient
- Processor power is appropriate for handling most of the tasks.
- Affordable price tag.

Q.6. Discuss about the various input and output devices used in Pc platform ?(2017-S-new/2018-S-Old)

Ans.- Input Device :

In order to get results out of machine, you need to put data into machine, through input devices. An input device is any Hardware component that allows to enter data programs, commands, and user responses into a computer. Input device includes the keyboard, pointing devices, scanners and reading device, digital camera, audio and video input device for physically changed user. Some device are as follows

(i) Keyboard :- The most common input device used by the computer one the key board. The keyboard is a way to input letters number into different application or programs. A keyboard also has special keys that hlp operate the computer i.e.

* Alphabet keys

Numeric keys

Function keys

Control Keys etc.

ii) Mouse :- The mouse is the most widely used pointing device because it takes full advantages of a graphical user interface. Designer to fit comfortably under the plan o your hand, a mouse is an input device that is used to control the movement of the pointer on the screen and mark selection from the screen.

iii) Optical make Reader (OMR) :-2019(w)-1.d

The optical mark Reader (OMR) is a special type of input device or scanning device which is used to read carefully placed pencil marks on a specially designed OMR sheet. This device is extensively used in conducting objective type examination, questionnaires and in forms.

Output Device :-

An output device is any peripheral device that converts machine readable information into people readable from Outputted information can be displayed as screen information, printed on paper or outputted as sound.

(i) Monitor :-

The computer monitor (also known as a VDU or visual display unit) is most common computer output device. For desktop computer, cathode ray monitor (CRT) one gradually being replaced by flat screen monitor such as the liquid cry (LCD) and thin film Transistor (TFT) displays used with laptop computers because they use less power and take up less space. Images are represented on the monitor by individual dots called pixels.

ii) Printer :

Printer is an output device that produces hardcopy of data. The resolution of Printer output is expressed as DPI. Printers can be classified into different types in several ways. Ie.

Serial Printer, Line printer, Bit-mapped Printers, Chancellor-based printer, etc.

Micro Computer are used 5 types of Printer:

- a) Dot-matrix printer
- b) Daisy wheel printer
- c) Chain printer
- d) Inkjet Printer
- e) Laser Printer.

iii) Plotters:-

A plotter is a special purpose output devices that draw images with ink pens. That is the plotter in a graphics printer for making sophisticated graph, map and three-different graphics as well as high quality colored documents.

There are two types of Plotter:

- a) Drum Plotter
- b) Flashed Plotter.

Q.7. Differentiate between Hardware and Software?[2019(W)1.J]

-> refers to the physical components of a computer. Computer Hardware is any part of the computer that we can touch these parts. These are the primary electronic devices used to build up the computer. Examples of hardware in a computer are the Processor, Memory Devices, Monitor, Printer, Keyboard, Mouse, and the Central Processing Unit.

->Software is a collection of instructions, procedures, documentation that performs different tasks on a computer system. we can say also Computer Software is a programming code executed on a computer processor. The code can be machine-level code or the code written for an operating system.

Q.8. What is file access ? Explain the various types of file access method. 2019(s)-2-d

There are three ways to access a file into a computer system: Sequential-Access, Direct Access, Index sequential Method.

1. Sequential Access –

It is the simplest access method. Information in the file is processed in order, one record after the other. This mode of access is by far the most common; for example, editor and compiler usually access the file in this fashion.

Read and write make up the bulk of the operation on a file. A read operation *-read next-* read the next position of the file and automatically advance a file pointer, which keeps track I/O location. Similarly, for the write *write next* append to the end of the file and advance to the newly written material.

2. Direct Access –

Another method is *direct access method* also known as *relative access method*. A fixed-length logical record that allows the program to read and write record rapidly. in no particular order. The direct access is based on the disk model of a file since disk allows random access to any file block. For direct access, the file is viewed as a numbered sequence of block or record. Thus, we may read block 14 then block 59 and then we can write block 17. There is no restriction on the order of reading and writing for a direct access file.

A block number provided by the user to the operating system is normally a *relative block number*, the first relative block of the file is 0 and then 1 and so on.

3. Index sequential method –

It is the other method of accessing a file which is built on the top of the direct access method. These methods construct an index for the file. The index, like an index in the back of a book, contains the pointer to the various blocks. To find a record in the file, we first search the index and then by the help of pointer we access the file directly.

Long Type questions. [7 marks]

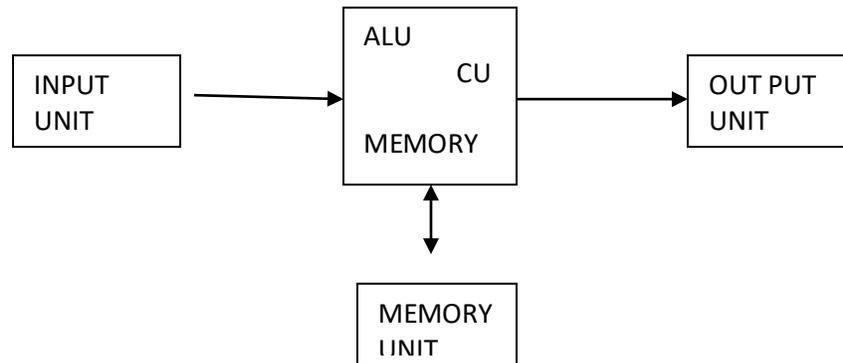
Q.1. What is Von-Neuman stored Principle ? Explain the working of a digital computer with functional block diagram (2018-w-new)

OR

Discuss about the flow of data in a computer with a neat block diagram (2018-w-new,2017(s) old)

Ans:

Digital Computer Block Diagram:



Input Unit:

It link the external environment with the computer system, there data & instruction are accepted from outside world, convert them into computer understandable form.

Ex.: Keyboard, Scanner

Output Unit:

It provide information obtained from data processing to outside world. It convert data from binary to Human readable form.

Ex.: Printer, Monitor.

CPU: 2019-(s)-1-b

It stands for Central Processing unit. It is the brain of computer. All calculation, controlling done by CPU. It's main part are:

ALU : Arithmetic and logic unit

CU : Control Unit

ALU: It does all the calculation & logical operation.

CU:It act as the nervous system of computer.

It control all the activity & devices inside the computer.

It send control sign all to different part of computer.

Memory Unit: It is an internal storage are a in the computer where we store data. It is classified into:

- Primary memory
- Secondary memory
- Cache memory
- Register memory

**Q.2. State and Explain the functions of different types of Memory in a computer ?
(2018-w-new)**

OR

Explain memory hierarchy computer system. (2017/2018/2016/2018-w-new)

Ans:

Memory: It is an internal storage area in the computer, where we store data temporarily or Permanently for longer time period. It is classified in basic four types:

Primary Memory :

It is also known as main memory. This memory directly accessed by CPU.

It is categorized into 2 types:

RAM: Random Access Memory, which is volatile in nature. It is read and write memory. It is classified into static RAM & Dynamic RAM.

ROM: Read Only Memory, which is non-volatile in nature? It is only read memory. It is classified into ROM, PROM, EPROM, and EEPROM.

Secondary Memory:

These are also known as auxiliary memory, which store data permanently. It is non-volatile in nature.

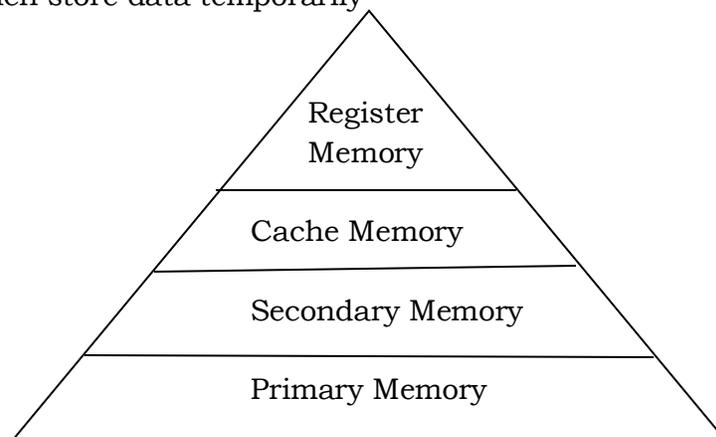
Ex:- Hard disk, CD-ROM

Cache Memory:

It is placed between CPU & Main memory. It is faster than main memory. It compare speed mismatch between CPU & main memory. It is used to store instruction which are repeatedly used in program.

Register Memory:

These are the smallest memory area. It store a word of data. These memory held by small registers which store data temporarily



Chapter-II

(Short type : 2 marks)

Q. Write difference between system Software and Application Software. (2016/2017-w-new) 2019(s)-2-c

Ans:

- System Software is a set of related programs used to act as an interface between computer hardware and user. Through system software user can interact with computer.

Ex: Operating system, Compiler, etc.

- Application Softwares are the software on which user actually works and application software runs over system software. Application software used for specific purpose where as system software used for general purpose.

Ex.:- MS-word, Game software, etc.

Q. Name two anti-virus software. (2017-w-new)

Ans: Quickheal, AVG

Q. What is Virus ? (2018-w-new)[2019-(w)1-b]

Ans: Virus is a malicious program which affects computer system and results its harmful effects by corrupting or destroying users valuable data. Virus canself replicate or trans from one location to another without the knowledge of users.

Ex:-Prajon horse, Boot sector virus, etc.

Q. What is Compiler? (2018/2017-w-new) 2019(s)-1-j

Ans: Compiler is system software designed to check the correctness of programs synthetically and its functions is also to translate the source program written in high level language to object programing in machine level language.

Q. Short notes on Windows. (2018-w-new)

Ans.- Microsoft Windows is a group of Operating system, manufactured by Microsoft. It is GUI and multitasking operating system. Some of the well knownversions include windows 98, ME, XP, Vista and 7.

Windows are most widely used OS for PC in the world.

Q. State the function of the anti-virus software. (2017-w-new)

Ans.- An anti-virus software offers various functions other than just viris detection. Other functions are :

- System Analysis
- Malware Removal
- Threat Identification
- Online Security
- Data Protection

Q. State different advantages and disadvantages of HLL program over Machine language program. (2017-S-New)

Ans.-

High Level Language

- Low development time
- Easy to write and edit
- Slower execution
- Larger file size

Low level Language

- High development time
- Difficult to write and edit
- Faster execution
- Small file size

The first two points are the advantages of high level languages over low level languages. Last two points are advantages of low level languages over high level languages.

Medium type Question – 5 Marks

Q.1- What is Anti-virus ? Give 2 example of it ? What is virus ? What are the different type of virus in computer system? (2018 –s-new)

- * Computer virus is defined or refer to any software. i.e. Cause damage to the computer system
- * Virus is software which is self-replicating & destructive in nature. It hampers the performance of computer system.

Types of Virus :-

Program Virus :-

It infects executable files having extension like .exe, .com, .bin etc.

Parasitic Virus :-

A parasite Virus attached itself to a file in order to propagate

Boot Sectors Virus :-

The Virus that spread when computer system start booting. It infect the master boot record into hard disc. Ex.- From Disk Killer

Polymeric Virus :-

It is a virus that change its characteristic with each interaction. Ex.- Evil, proud

Memory Resident Virus :-

This virus installs code in the memory.

Email Virus :- The virus which is spread out through email message, is known as –mail virus.

Anti virus :- Antivirus are the software which preventing the propagation of virus program.

Ex.- Norton antivirus, Mac Fec etc.

Prevention / detection :- Virus are prevented through antivirus program. It can detected and eradicated the virus. Virus are detected by scanning through antivirus software.

Q.2. Define Compiler. How it is different from interpreter ? (2017-w-new)/(2018-S)

Or Difference between Interpreter&Compiler ?

Ans.-

Interpreter

- 1) Interpreter translates the code one line at a time.
- 2) It convert source program into machine order stand able form (binary code)
- 3) It required more time to execute the program.
- 4) It take less time to processing the program.
- 5) These are good for fast error checking.
- 6) It does not require much more memory space in computer.
- 7) Interpreted program are machine dependent.

Compiler

- 1) Compiler translates the entire program at a time.
- 2) It converts source language into machine language. (binary code)
- 3) It requires less time to execute the program.
- 4) It takes more time for processing the program.
- 5) These are very slow in error checking.
- 6) It requires more memory space in computer.
- 7) Compiled program are machine independent.

Q.3- Discuss about different methods of protecting the computer from virus ? (2018-new-w)

Or Discuss about virus detection & prevention ?(2017) [2019(W)2.A]

Ans.- Computer Virus is a kind of malicious software written intentionally to ntr a computer without the user's permission or knowledge, with an ability to replicate itself, thus continuing to spread. A computer virus may corrupt or delete data on a computer.

Detection : - Any computer may be infected with a virus if it exhibits one or more of the following symptoms.

- Computer is giving problem during booting or takes a lot of time for booting.
- Computer is resetting automatically.
- Computer is hanging when the user tries to execute a particular program.
- Computer is displaying some unusual figures / signs on the screen.
- Computer is performing some operations automatically though the user has not given any command for that operation.
- The computer is giving some message such as "Insufficient memory", "Disk full" etc.
- The hard disc is assessed unusually many times. Any computer can be affected / infected by computer virus in either of the following ways.
- By inserting a virus infected CD or Pen drive to the system.
- Through the LAN setup where one of the computer belonging to the network has been affected.
- Through internet and e-mail
- Through installation of illegal /pirated software specially games.

Prevention : We can prevent our computer from virus infection by adopting the following steps.

- Don't allow outside CD / Floppy or Pen drive to be used without proper scanning.
- Always install and update a suitable antivirus software from an authorized source.
- Protect the system by setting the antivirus software and the fire wall to the auto protection mode.
- Don't visit websites which are not reputed.
- Always protect your computer from unauthorized use by setting a password.
- Don't open unknown emails received in your mail box.
- Check the size of the executable files at regular interval.

Long Type Questions – 7 Marks

Q. Differentiate between Dos – Window –Unix Operating System (2016-s-new)/(2017-s-new/2018-s-new) 2019(s)-2-b[2019(W)7]

DOS

1. It is character user interface.
2. It is single user single tasking Operating system.
3. It is less powerful & slow Operating system.
4. All the command has been typed by user in Dos prompt.
5. It does not provide multitasking environment.
6. It does not support graphics.
7. It does not provide security to user.
8. It does not help in networking.
9. It is less costly.

WINDOW

1. It is graphical user interface.
2. It is single user multitasking operating system.
3. It has powerful & fast operating system.
4. It provide in built command in various application.
5. It provide multitasking environment.
6. It support graphics.
7. It provide security.
8. It help in networking.
9. It is expensive.

UNIX

1. It support visual display and graphic user interface.
2. It is multiuser multitasking operating system.
3. It is a powerful operating system.
4. It support the concept of shell & Kernel.
5. It provide multitasking environment.
6. It support graphics.
7. It provide high security to user through password.
8. It help in networking of computers.
9. It is more expensive.

Q. Define O.S. ? Discuss about multitasking and time sharing O.S.. (2017-w-new) 2019-(s)-5

OR

State the difference between batch processing / multi programming & Time - Sharing O.S. (2018/2016-w-new) [2019-(W)2.D]

Ans:

Operating System:

An operating system is the integration of set of program that controls the resources like CPU memory. I/O devices of computer system.

Types of Operating System:

Multi Programming O.S.:

- In this O.S. Multi program can perform simultaneously.
- It maximizes the utilization of C.P.U.
- It process job on priority basis.
- Here multiple program can loaded into memory, execution start with the first process and continue till the all program finish.

Multi Tasking O.S.: 2019-(s)-1-c

This O.S.execute one or more task at a time. It is technically same as multi programming.

- Here one CPU perform multiple task at a time. For example- while printing, we print data simultaneously we save data or worked on that data.
- It keeps the track of resources among the process.
- It is 2 types . i) Primitive type
ii) Co-operative type

Time sharing O.S.:

It support multiple users to work on a computer such as way that, they perform work on multiple terminal at a time.

- Here the CPU time is divided into equal no. of parts called time slice or time scot.
- Individual users allot resources for particular time scot.
- Here switching of system resource between user done very fast.

Multi Processing O.S.:

It refers to computer system ability to support more than one processor at a time. This O.S. run several program concurrently through different processors.

Batch Processing O.S.:

It support processing of job one at a time. The job are submitted in a batch. It is the responsibility of the operating system to schedule the jobs in the queue and assign system resources one by one. Batch processing is useful in case of bulk database updates and automated transaction processing.

Q. What is Operating System ? Discuss about the functions of Operating System. [8 marks] (2017/2018-w-new)

Ans:

Operating system: Operating system is software, which is installed in a computer to act as an interface between computer and human user.

The functions of Operating System is following categories:

- 1) Resources management
- 2) Processor management
- 3) Memory management
- 4) Device management
- 5) Information management

1) **Resource Management:**

As a resource management operating system manages the various resources of the computer by keeping a track of all available resources of the computer.

2) **Processor Management:**

It is responsible for managing allocation of the processor between the different program using a schedule algorithm.

3. **Memory Management:**

By his O.S. keeping track of available memory, allocation of memory to different process, deallocation of memory.

4. **Device Management:**

O.S. keep track of all the I/O device connected to the computer. It allocate resources among different process based on different policy.

5. **Information Management:**

It is another major task of O.S. like - creating file & directory, maintain file status, Open & read file, delete file, etc.

(Short type : 2 marks)

Q. What is URL ? (2017-w-new)

Ans: URL known as Uniform Resource Locator. It is a standardized way of addressing a particular website. This URL is unique to a particular website throughout the globe.

Q. Define Protocol. (2016/2018-w-new) 2019(s)-1-i

Ans: A protocol is the special set of rule that determines the type of error checking to be used, data compression method and message receiving confirmation etc.

Q. Fibe optic cable (2018-w-new)

Ans: A fiber optic of which is capable of transmitting messages modulated into light waves.

- It has greater bandwidth so can carry more data.
- It is expensive to install.

Q. Define e-mail (2017-w-new)

Ans.- e-mail i.e. electronic mail is a method of exchanging digital messages from an author or sender to many recipients. E-mail operates across the internet or other computer network for my electronic document transmission.

Q. Define router. (2016-summer-new)

Ans.- A router is a device that forwards data packets along networks. A router is connected to at least two networks, commonly two LANS or WANs or a LAN and its ISP's network.

Q. What do you mean by FTP ? (2016-s-new)[2019-(w)1.(a)]

Ans.- FTP stands for file transfer protocol, is a method by which one can upload information into a website. Thus this is a technique to place information on the web, so that it can be accessed by the internet users.

Q. Define www. (2018-s-new) 2019-(s)-1-d

Ans.- www stands for world wide web. It is a subset of internet and collections of web pages which can be accessed using a web browser. Internet and www are not same.

Another definition is all the resources and users on the Internet that are using the HTTP is called www.

Q. Define Topology?(2017/2018)

Ans-A network is based on a defined structure where computers are arranged according to some specific method. This is referred as network topology.

Different topology are :-

- 1) Bus topology
- 2) Star topology
- 3) Ring topology
- 4) Tree topology
- 5) Mesh topology

Medium Type – 5 Marks

Q. What is internet ? Write its application.

Or What is Internet ? Write its advantages. (2016/2017-w-new/2018-s-new)[2019(w)1.h]

Ans.- Internet is used for the wide network that connect computers, spread all over the world.

Application of Internet

- Staying in touch through e-mail.
- Text message can sent& received easily.
- It helps in voice charting.
- It helps in video conferencing among the people who are long distance apart.
- We get news & updates through internet.
- We search different topic through Google in internet.
- It helps in entertainment.
- E-learning, E- banking, E-shopping are application of internet.

Q. Explain simplex, half duplex and full duplex data transmission mode ? (2017-w-new/2018-w-new)

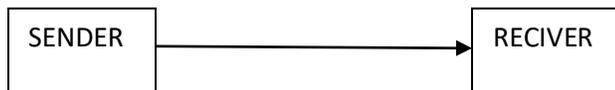
Type of data transmission mode

1. Simplex mode
2. Half duplex mode
3. Full duplex mode

Simplex Mode: - In this mode, data can flow in only one direction. In this mode a sender can only send data and can not receive it. Similarly a receiver can only receive data but not send it.

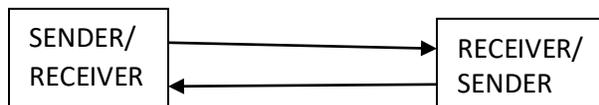
It is not possible to confirm successful transmission of data. It is also not possible to request the sender for re-transmit information.

Ex.- Radio & T.V. transmission



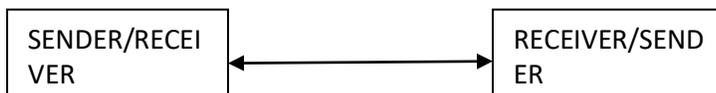
Half duplex mode: - Here data can flow in both directions but only in one direction at a time. In this mode data is sent and received alternatively.

Ex.- Internet browsing



Full duplex mode: - Here data can flow in both directions at the same time. It is the fastest directional mode of data communication. Here both the devices act as sender & receiver at a time.

Ex.- Telephone communication system



Q.- Discuss about the different goals of setting Network (2017-w-new/2018-s-old)

Network :- A network can be defined as a group of computer and other devices connected in the same way so as to be able to exchange data & other resources. Networks are built with a combination of computer h/w & s/w

Network goals are

1. Resource sharing
2. Job sharing
3. Achieving reliability

Resource sharing :- It is the major goal of any network system. By keeping a number of computer systems in a network, it becomes possible to share the various resources in terms of computer h/w, s/w, peripheral devices shared between individual systems.

Job sharing :- Here a huge task is divided into small modules and distributed to various computers present in a network. This technique reduces the load on individual computers & finishes the task at a time.

Achieving reliability :- It making system available at any instant of time. In a network system. If a system fails, then we can use another system present in the network to attend an on going job.

Q.- Define network. Explain different type of network (2016/2017-s-new/2018-w-new) 2019-(s)-2-e

Ans.- Network is basically divided into three type [2019(W)2.G]

1. LAN –Local area network
2. MAN – Metropolitan area network
- 3.WAN – Wide area network

LAN – It is limited to a small geographical area. The rate of data transmission is generally higher in case of LAN. It basically used wire media. The cost of communication is less here.

MAN – A MAN is a network that inter connects computers and other devices in a geographical area greater than LAN. It may connect network in a city a compus etc. It may be formed by interconnecting several LAN by bridging them with fibre optic cable. A MAN cover an area of 5-50 square Km. A MAN is usually not owned by a single individual or an organization. It is owned by networking service provider. It is a high speed network.

WAN – A WAN spread in a large geographical area. It used connection media uch as telephone line cable, and air waves. It used wireless media. The cost of transmission is more here data transmission rate is slower. When small network are connected together to form a large network then it is called WAN. Or internetwork which is abbreviated to internet.

Q.- What is e-mail ? Explain e-mail structure briefly (2016/2017-s-new/2018-w-new)

Ans.- e-mail means electronic mail. E-mail is the most widely used service on the internet. The messages are sent electronically. The message sent through e-mail is instantaneously reaches to the recipient. When the sender sends the message. The mail server receives it an then it directs the message to the recipient computer

Advantages of e-mail

1. Cost effective
2. High speed
3. Easy to use
4. Time saving
5. Wastage Reduction
6. Record Maintenance
7. Message storing

Structure of e-mail

e-mail message consist of two part

1. Message header
2. Message body

Message header

Each message has exactly one header, which is structured into field. Each field has a name and a value.

Header field

From – The e-mail address and optionally the name of author.

To – The e-mail address or the name of recipient

cc- Carbon copy used to indicate the address of 2nd recipient

Bcc – Blind carbon copy used to indicate the address of 3rd recipient.

Subject: - A brief summary of the topic of message.

Date :- Time & date when the message was written

Attachment: - It is used to attach any word excel along with e-mail message document.

Message body part :- The modern graphic e-mail clients allow the use of either plain text or HTML for the message body part.

It contains the message which user wants to send to the recipient.

<u>Header part</u>	
From –	
To –	
cc-	
Bcc –	
Subject –	
Date -	Attachment –
<u>Body Part</u>	

Long Type Question – 7 Marks

Q.- Discuss about the functions of different networking devices. (2016-w-new/ 2017-w-new/2018-w-new) [2019(W)3]

Ans. – HUB :

- Networks using a star topology require a central point for the device to connect. Originally this device was called a concentrator since it consolidated the cable runs from all network devices.
- The basic form of concentrator is the hub. The hub is considered the least common denominator in device concentrators.
- Hubs offer an expensive option for transporting data between devices, but hubs do not offer any form of intelligence.
- Hubs can be active or passive. An active hub strengthens and regenerates the incoming signals before sending the data on to its destination before sending the data on to its destination whereas a passive hub does nothing with the signal.

Repeater :-

- A repeater is a device that amplifies a signal as it passes through it, to counteract the effects of attenuation.
- An Ethernet hub is also called a multiport repeater.
- This type of repeater only has two BNC connectors.
- A repeater connects two segments of network cable and it increases the length of network.
- One disadvantage of a repeater is it causes propagation delay which affects network communication.

Switch :-

- A switch is a device which has multiple ports. It is the replacement of a hub.

- It connects number of devices within a network which want to transmit their data like (Computer, Printer, scanner etc.)
- A switch have a switching table which store address of the devices which are connect to it and only send data to the destination device, not to all devices.

Bridge :-

- A Bridge is a device that connects two or more LAN. When a bridge transmits data between 2 LAN it first re-amplifies the signal then send to the receiver.
- In bridge, the address of receiving device specified on the data packet to identify the destination device.
- Though bridge help to send data between on device to their device only, it reduce the data traffic on network.

Q.- What is networking ? Discuss about different type of network topologies. (2016/2017-w-new/2018-w-new) 2019-(s)-6,[2019(W)2.C]

Ans.- A network is based on a defined structure where computers are arranged according to some specific method. This is referred as network topology.

Different topology are :-

1) Bus topology 2) Star topology 3) Ring topology 4) Tree topology 5) Mesh topology

Bus topology: - Bus networks use a common backbone to connect all devices. A single cable, the backbone functions as a shared communication medium that devices attach or tap into with an interface connector. A linear bus topology consists of a main run of cable with a terminator at each end.

Star topology: - Many home networks use the star topology A star network features a central connection point called a “hub”. Devices typically connected to the hub with unshielded twisted pair (UPT). A star network generally requires more cable. If hub is fail the entire network is fail.

Ring topology: - In ring network, every device has exactly two neighbours for communication. All messages travel through ring in the same direction either clock wise or anti clockwise. A failure in any cable or device breaks the entire loop. To implement ring network FDDI, SONET or Token ring technology is used.

Tree topology: - Tree topologies integrate multiple star topologies together on to a bus. Here only hub devices connect directly to the tree bus and each hub function as a root of tree. Tree topology combine characteristic of bus and star topology.

Mesh topology: - Mesh topologies involve the concept of routes. Here message sent on a mesh network can take any of the several. Possible paths from source to destination. A mesh network in which every device connects to every other is called a full mesh. It is point to point connection. If one connection is breakdown it cannot effect the entire network.

Chapter -5

Short Question – 2 marks

Q.- Define an algorithm ?(2017) 2019-(s)-1-e

Ans.- Before writing a programmer has to prepare the logic and write it an a step by step manner, which is known as algorithm. Thus algorithm one step by step procedure for solving any problem.

Q.- Differentiate between algorithm and flowchart.

Ans.- Thus algorithms are step by step procedure for solving problem. A flowchart is a graphical representation of problem solving procedure. In a flow chart, the different steps of the program logic is written inside a graphical symbol.

Q.- What is folder. 2019-(s)-1-f

A folder, also called a directory, is a special space used to store files, other folders, and shortcuts on a computer. A good analogy is the manila folders seen in an office that are used to store papers or reports. When browsing the files on your computer using a file manager, such as Windows Explorer, the icon for a folder should look similar to the image.

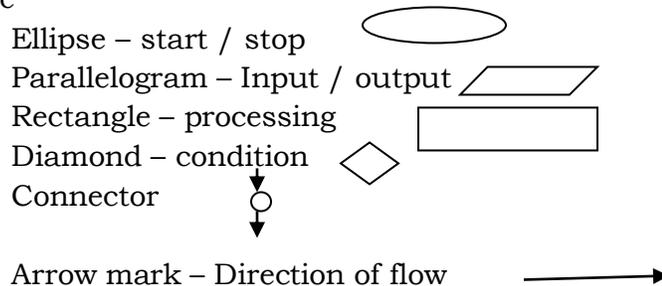
Q.- What is Constant and Variable. 2019-(s)-1-g

variable is a named memory location which temporarily stores data that can change while the program is running. A **constant** is a named memory location which temporarily stores data that remains the same throughout the execution of the program.

Q.- What is flow chart ? What are the symbol used in flow chart ?(2018) 2019-(s)-2-f[2019-w-1.c]

Ans.- The diagrammatic representation of algorithm is known as the flow chart.

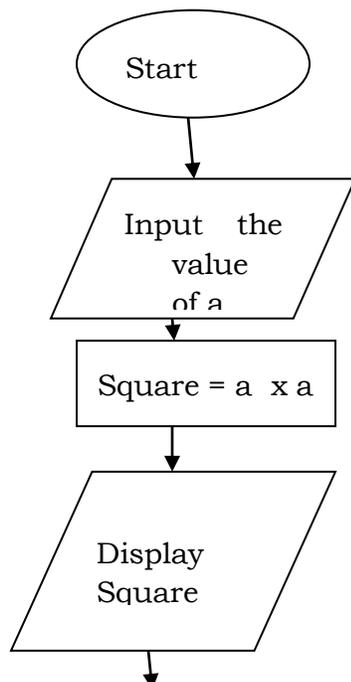
Symbols are



LONG & MEDIUM TYPE QUESTION

Q.- Draw the flow chart & Write the algorithm to find square of a no.

- Step 1 : Start
- Step 2 : Input value of a
- Step 3 : Square = a x a
- Step 4 : Display Square
- Step 5 : Stop



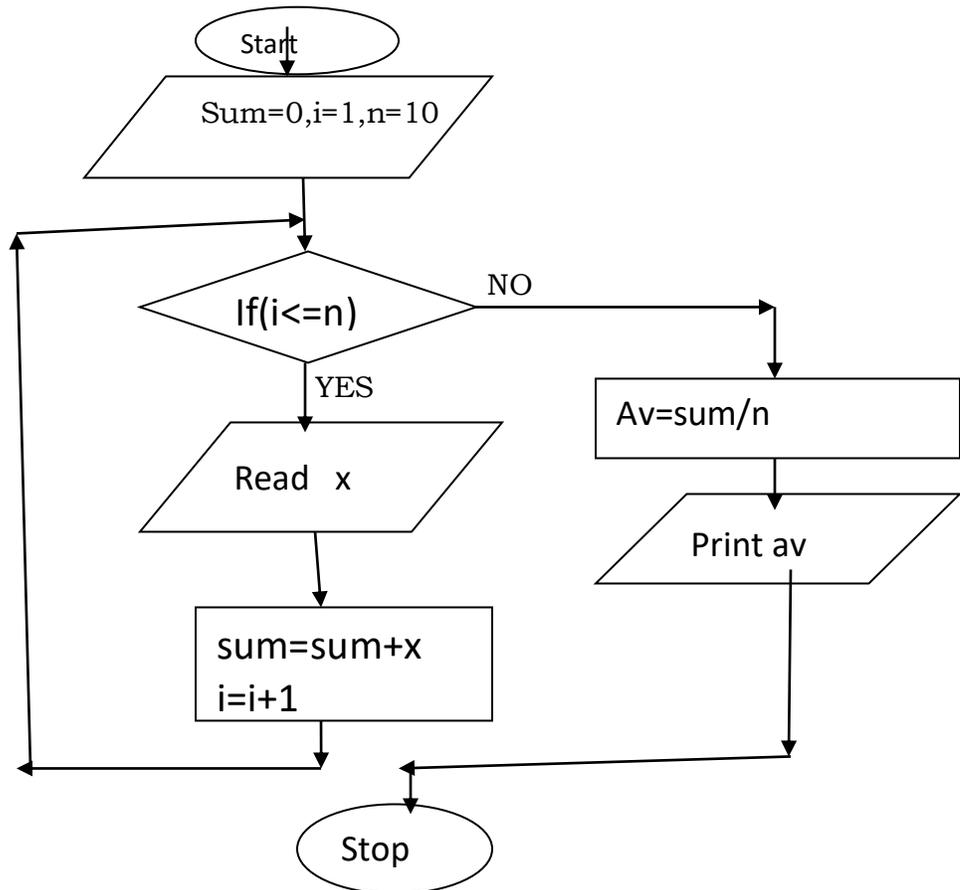
stop

Q-WRITE THE ALGORITHM & DRAW THE FLOW CHART TO PRINT AVERAGE OF N-NUMBERS? (2018-W-NEW)

ALGORITHM

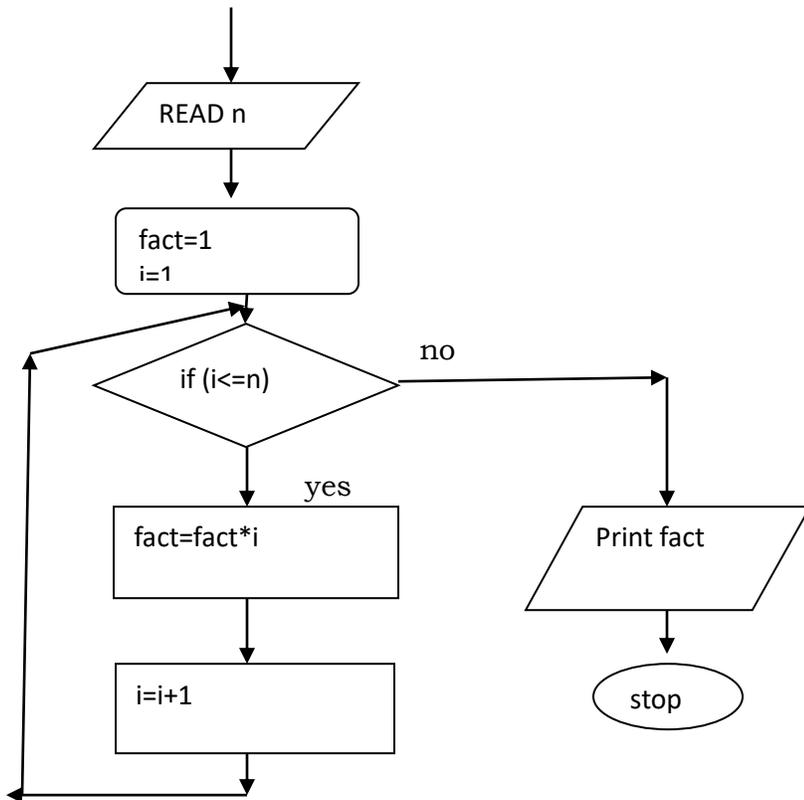
- Step 1: START
- STEP 2: INPUT THE VALUE OF SUM=0,I=1,N=10
- STEP 3: IF (I<=N)
- STEP 4: IF YES READ X(AN INTIGER VALUE)
GO TO STEP 5,STEP 6,STEP 7
- STEP 5: SUM=SUM+X
- STEP 6: I=I+1
- STEP 7: GO TO STEP 3
- STEP 8: IF NO
- STEP 9: AV=SUM/N
- STEP 10: DISPLAY AV
- STEP 11: STOP

FLOWCHART

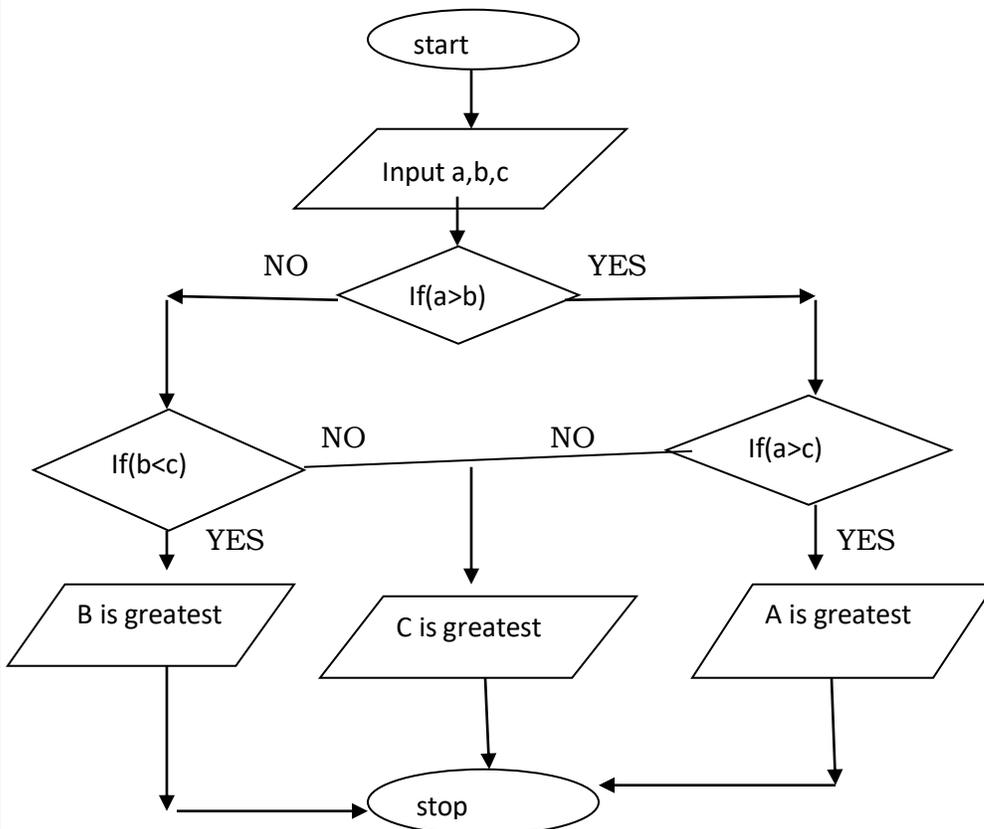


Q- DRAW THE FLOW CHART TO FIND FACTORIAL OF A NUMBER? (2016-S-NEW)

START



Q- DRAW THE FLOW CHART TO FIND GREATEST AMONG THREE NUMBER? (2016-S-OLD /2018)



CHAPTER-6

Short Question - 2 marks

Q.- Name of the first developer of C programming language.

Ans.- D. Ritchie along with B.Vernighan who published a book on C computer professional of the world and are regarded as the First developer of C language.

Q.- State the C built in function available for formatted i/o, and give their syntax.

Ans.- Following are the built in function provided by a compiler for this purpose of formatted I/O.

Q.- What are the various data types available in 'C' language ?[2019-w-1.f]

Ans.- There are 4 data types available in C language.

These are

Data types		Reserved word
Integer	-	int (2 bytes)
Float	-	float(4 bytes)
Character	-	char(1 bytes)
Double	-	double(8 bytes)

Medium type question-5 marks

Q-WAP IN C TO FIND THE AVERAGE OF THREE NUMBER?(6 MARKS)

```
# include <stdio.h>
# include <conio.h>
void main()
{
    int a,b,c,avg,sum;
    printf ("enter the value a ,b ,c");
    scanf ("%d %d %d", &a ,&b, &c);
    sum=a+ b +c;
    avg=sum/3;
    printf("average is %d", avg);
}
```

Q-WRITE THE DIFFERENCE BETWEEN WHILE& DO-WHILE LOOP ? (2018-S-NEW)/5-MARKS

1. In While loop the condition is tested first and then the statements are executed if the condition turns out to be true.

In do while the statements are executed for the first time and then the conditions are tested, if the condition turns out to be true then the statements are executed again.

2. A do while is used for a block of code that must be executed at least once.

These situations tend to be relatively rare, thus the simple while is more commonly used.

3. A do while loop runs at least once even though the condition given is false

while loop do not run in case the condition given is false

4. In a while loop the condition is first tested and if it returns true then it goes in the loop

In a do-while loop the condition is tested at the last.

5. While loop is entry control loop

where as do while is exit control loop.

6. Syntax:

```
while loop :  
while (condition)  
{  
Statements;  
increment/decrement;  
}
```

```
do while loop :  
do  
{  
Statements;  
increments / decrements;  
}while(condition);
```

7.in while loop there is no semicolon near while condition.

In do-while loop there is a semicolon near while condition.

Q-WAP IN C TO FIND THE FOLLOWING

$1+x+2!/x^2+3!/x^3+4!/x^4+-----+10!/x^{102017-w}$

```
#include<stdio.h>  
#include<conio.h>  
#include <math.h>  
void main()  
{  
    floatx,sum,prod;  
    inti,n;  
    clrscr();  
    printf("enter the Value of x and (n) Number of terms to be sum\t  
:");  
    scanf("%f%d",&x,&n);  
    sum =1+x; prod = 1;  
    for (i=1;i<=n;i++)  
    {  
        prod = prod*i;  
        sum =sum+ (prod/pow(x,i));  
    }  
    printf("\nthe sum = %f\nNumber of terms = %d\nvalue of x =  
%f\n",sum,n,x);  
    getch();  
}
```

Q-WAP IN C TO FIND THE SUM OF ALL THE ODD NUMBER BETWEEN 1 TO 100 (2017-S-NEW)

```
#include <stdio.h>
#include <conio.h>
int main ()
{
    int i, sum=0;
    i=1;
    while (i<=100)
    {
        Sum=sum+i;
        i=i+2;
    }
    printf ("sum is %d", sum);
}
```

Q-WAP IN C TO ACCEPT YOUR NAME & PRINT IT ?2017-W-NEW

```
#include <stdio.h>
#include <string.h>
int main ()
{
    printf("enter you name");
    gets(s);
    puts(s);
}
```

Long type question-7 marks

Q-WAP IN C TO FIND GREATEST AMONG THE THREE NUMBER?(7 MARKS)2016-S-OLD/LETERAL

```
#include <stdio.h>

int main()
{
    int n1, n2, n3;
    printf("Enter three numbers: ");
    scanf("%d %d %d", &n1, &n2, &n3);
    if( n1>=n2 && n1>=n3 )
    printf("%d is the largest number.", n1);
    elseif( n2>=n1 && n2>=n3 )
    printf("%d is the largest number.", n2);
    else( n3>=n1 && n3>=n2 )
    printf("%d is the largest number.", n3);
    return 0;
}
```

Q-DEFINE OPERATOR ?WHAT ARE THE DIFFERENT TYPE OF OPERATOR USED IN "C"?(2018-S-NEW)/20177/5/3-MARK

Operators in C Language

C language supports a rich set of built-in operators. An operator is a symbol that tells the compiler to perform certain mathematical or logical manipulations. Operators are used in program to manipulate data and variables.

C operators can be classified into following types,

- Arithmetic operators
 - Relation operators
 - Logical operators
 - Bitwise operators
 - Assignment operators
 - Conditional operators
- Special operators

Arithmetic operators

C supports all the basic arithmetic operators. The following table shows all the basic arithmetic operators.

Operator	Description
+	adds two operands
-	subtract second operands from first
*	multiply two operand
/	divide numerator by denominator
%	remainder of division
++	Increment operator increases integer value by one
--	Decrement operator decreases integer value by one

Relation operators *2019-(s)-1-h*

The following table shows all relation operators supported by C.

Operator	Description
==	Check if two operand are equal
!=	Check if two operand are not equal.
>	Check if operand on the left is greater than operand on the right
<	Check operand on the left is smaller than right operand
>=	check left operand is greater than or equal to right operand
<=	Check if operand on left is smaller than or equal to right operand

Logical operators

C language supports following 3 logical operators. Suppose a=1 and b=0,

Operator	Description	Example
&&	Logical AND	(a && b) is false
	Logical OR	(a b) is true
!	Logical NOT	(!a) is false

Bitwise operators

Bitwise operators perform manipulations of data at **bit level**. These operators also perform **shifting of bits** from right to left. Bitwise operators are not applied to **float** or **double**.

Operator	Description
&	Bitwise AND
	Bitwise OR
^	Bitwise exclusive OR
<<	left shift
>>	right shift

Now lets see truth table for bitwise `&`, `|` and `^`

a	b	a & b	a b	a ^ b
0	0	0	0	0
0	1	0	1	1
1	0	0	1	1
1	1	1	1	0

The bitwise shift operators shifts the bit value. The left operand specifies the value to be shifted and the right operand specifies the number of positions that the bits in the value are to be shifted. Both operands have the same precedence.

Example :

```
a = 0001000
```

```
b= 2
```

```
a << b = 0100000
```

```
a >> b = 0000010
```

Assignment Operators

Assignment operators supported by C language are as follows.

Operator	Description	Example
=	assigns values from right side operands to left side operand	a=b
+=	adds right operand to the left operand and assign the result to left	a+=b is same as a=a+b
-=	subtracts right operand from the left operand and assign the result to left operand	a-=b is same as a=a-b
=	multiply left operand with the right operand and assign the result to left operand	a=b is same as a=a*b
/=	divides left operand with the right operand and assign the result to left operand	a/=b is same as a=a/b
%=	calculate modulus using two operands and assign the result to left operand	a%=b is same as a=a%b

Conditional operator

It is also known as ternary operator and used to evaluate conditional expression.

expr1 ?expr2 : expr3

If **expr1** Condition is true ? Then value **expr2** : Otherwise value **expr3**

Special operator

Operator	Description	Example
sizeof	Returns the size of an variable	sizeof(x) return size of the variable x
&	Returns the address of an variable	&x ; return address of the variable x
*	Pointer to a variable	*x ; will be pointer to a variable x

Q-WHAT IS LOOPING ?WHAT ARE THE DIFFERENT TYPE OF LOOP USED IN C-LANGUAGEWITH SYNTAX?2018-S-NEW

OR

WRITE SYNTAX OF ALL ITERATIVE STATEMENT IN C-LANGUAGE?2017-W-NEW

Loops in C Lanugage

Loop is sequences of statements are executed until a specified condition is true. This sequence of statements to be executed is kept inside the curly braces `{ }` known as the **Loop body**. After ever execution of loop body, condition is verified, and if it is found to be **true** the loop body is executed again. When the condition check returns **false**, the loop body is not executed.

There are 3 type of Loops in C language

while loop

for loop

do-while loop

while loop

while loop can be addressed as an **entry control** loop. It is completed in 3 steps.

- Variable initialization.(e.gint x=0;)
- condition(e.g while(x<=10))
- Variable increment or decrement (x++ or x-- or x=x+2)

Syntax :

```
variable initialization ;  
while (condition)  
{  
statements ;  
variable increment or decrement ;  
}
```

Example : Program to print first 10 natural numbers

```
#include<stdio.h>  
#include<conio.h>  
void main( )  
{  
int x;  
x=1;  
while(x<=10)  
{  
printf("%d\t", x);  
x++;  
}  
getch();  
}
```

for loop

for loop is used to execute a set of statements repeatedly until a particular condition is satisfied. we can say it an **open ended loop**. General format is,

Syntax :

```
for(initialization; condition ; increment/decrement)  
{  
statement-block;  
}
```

In **for** loop we have exactly two semicolons, one after initialization and second after condition. In this loop we can have more than one initialization or increment/decrement, separated using comma operator. **for** loop can have only one **condition**.

Above Example with for loop

```
#include<stdio.h>  
#include<conio.h>  
void main( )  
{  
int x;  
for(x=1; x<=10; x++)  
{  
printf("%d\t",x);  
}
```

```
}  
getch();  
}
```

Nested for loop

We can also have nested **for** loops, i.e one **for** loop inside another **for** loop. Basic syntax is,

Syntax :

```
for(initialization; condition; increment/decrement)  
{  
for(initialization; condition; increment/decrement)  
  {  
statement ;  
  }  
}
```

Example : Program to print half Pyramid of numbers

```
#include<stdio.h>  
#include<conio.h>  
void main( )  
{  
inti,j;  
for(i=1;i<5;i++)  
  {  
printf("\n");  
for(j=i;j>0;j--)  
  {  
printf("%d",j);  
  }  
}  
getch();  
}
```

output

```
1  
21  
321  
4321  
54321
```

do while loop

In some situations it is necessary to execute body of the loop before testing the condition. Such situations can be handled with the help of **do-while** loop. **do** statement evaluates the body of the loop first and at the end, the condition is checked using **while** statement. General format of **do-while** loop is,

Syntax :

```
do  
{statements ;  
variable increment or decrement ;  
}  
while(condition);
```

Example : Program to print first ten multiple of 5.

```
#include<stdio.h>  
#include<conio.h>  
void main()  
{
```

```

inta,i;
a=5;
i=1;
do
{
printf("%d\t",a*i);
i++;
}
while(i <= 10);
getch();
}

```

Q-WRITE A C PROGRAM TO FIND AVERAGE OF N-NUMBER USING WHILE LOOP?2017-W-NEW/7-MARKS

```

#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
inti,x,n;
floatsum,average;
Sum=0;
i=1;
printf ("enter the value of n");
scanf ("%d",&n);

While (i<=n)
{
Printf ("enter a number");
scanf ("%d",&x);
sum=sum+x;
i=i+1;
}

average=sum/n;
printf ("N=%d Sum=%f",n,sum);
printf (" Average=%f",average);
getch();
}

```

Q-WAP IN C TO FIND THE FOLLOWING

$$1/X+2/X^2+3/X^3+-----+N/X^{2017-W}$$

```

#include<stdio.h>
#include<conio.h>
#include<math.h>
void main()
{
inti,n;
float x,sum=0;
clrscr();
printf("Enter the value of x and n:");
scanf("%f%d",&x,&n);
for (i=1;i<= n;i++)

```

```

{
sum=sum+(i/pow(x,i));}
printf("Sum=%f",sum);
getch();
}

```

Q-WAP IN C TO FIND THE FOLLOWING
n2017-S-NEW

$$\sum_{i=1} x^i/i$$

```

#include<stdio.h>
#include<conio.h>
#include<math.h>
void main()
{
inti,n;
float x,sum=0;
clrscr();
printf("Enter the value of x and n:");
scanf("%f%d",&x,&n);
for (i=1;i<= n;i++)
{
sum=sum+(pow(x,i) /i);
}
printf("Sum is =%f",sum);
getch();
}

```

Q-wap in c to read a number print the reverse of a number? 2018-S-NEW

```

#include <stdio.h>
#include <conio.h>
int main ()
{
int n, reverse =0;
printf("Enter a number to reverse\n");
scanf ("%d", &n);
while(n! =0)
{
reverse= reverse *10;
reverse= reverse + n%10;
n= n/10;
}
printf("Reverse of entered number is = %d\n", reverse);
return0;
}

```

Chapter – 7

SHORT TYPE QUESTION -2 MARKS

Q.- Define Rcrusion function. [2019-w-1.e]

Ans.- A function has capability to call itself in a process. This is called recursion. Recursion may be direct or indirect. When a function calls itself, it is direct recursion and if it calls another function, which then calls first function then it is indirect recursion.

Q.- Define Array ? Write how an array is declared in C.(2016/2017)

Ans.- An array is a collection of same type of data item which are stored in consecutive memory location under a common name.

Array is declared as data type Arrayname [size]

Ex.- int marks [30]

Q-Define Pointer?(2016/2017)

- **Ans-**Pointers in C language is a variable that stores/points the address of another variable. A Pointer in C is used to allocate memory dynamically i.e. at run time. The pointer variable might be belonging to any of the data type such as int, float, char, double, short etc.
- Pointer Syntax : data_type *var_name; Example : int *p; char *p;
- Where, * is used to denote that “p” is pointer variable and not a normal variable.

Q-Define String?(2017)

Ans-A string is a data type used in programming, such as an integer and floating point unit, but is used to represent text rather than numbers. It is comprised of a set of characters that can also contain spaces and numbers. For example, the word "hamburger" and the phrase "I ate 3 hamburgers" are both strings. Even "12345" could be considered a string, if specified correctly.

5 MARKS

Q-Write the difference between structure and union.(2016/2017/2018-w)

Ans-

	STRUCTURE	UNION
Keyword	The keyword struct is used to define a structure	The keyword union is used to define a union.
Size	When a variable is associated with a structure, the compiler allocates the memory for each member. The size of structure is greater than or equal to the sum of sizes of its members.	when a variable is associated with a union, the compiler allocates the memory by considering the size of the largest memory. So, size of union is equal to the size of largest member.
Memory	Each member within a structure is assigned unique storage area of location.	Memory allocated is shared by individual members of union.
Value Altering	Altering the value of a member will not affect other members of the structure.	Altering the value of any of the member will alter other member values.
Accessing members	Individual member can be accessed at a time.	Only one member can be accessed at a time.
Initialization of Members	Several members of a structure can initialize at once.	Only the first member of a union can be initialized.

Q-Write a c program to reverse of a string.(2017)

```

Ans-#include <stdio.h>
#include <string.h>

int main()
{
char arr[100];

printf("Enter a string to reverse\n");

```

```

gets(arr);

strrev(arr);

printf("Reverse of entered string is \n%s\n",arr);

return 0;
}

```

LONG TYPE QUESTION -7 MARKS(2018)

Q- Write a program in c to find greatest between three number.

```

Ans-#include<stdio.h>
#include<conio.h>
void main()
{
    int a,b,c;
    clrscr();
    printf("Enter the Value of a = ");
    scanf("%d",&a);
    printf("Enter the Value of b = ");
    scanf("%d",&b);
    printf("Enter the Value of c = ");
    scanf("%d",&c);
    if (a>b&&a>c)
    {
        printf("a is Greater ");
    }
    else if(b>a&&b>c)
    {
        printf("b is Greater");
    }
    else
    {
        printf("c is Greater");
    }
    getch();
}

```

Q-WAP IN C TO GET ELEMENT IN TWO ONE DIMENTION ARRAY OF SAME SIZE AND SUBSTRACT THEM AND PUT THEM IN ATHIRD ARRAY?(2017-S-NEW/2018)

```

#include<stdio.h>
# include<conio.h>
int main()
{
    int i, j, mat1[10], mat2[10], mat3[10];
    int row1, row2;
    printf("\nEnter the number of Rows of Mat1 : ");
    scanf("%d", &row1);
    printf("\nEnter the number of Rows of Mat2 : ");
    scanf("%d", &row2);
    for (i = 0; i < row1; i++)

```

```

{
    printf("Enter the Element in mat1);
    scanf("%d", &mat1[i]);
}
for (i = 0; i < row2; i++)
{
    printf("Enter the Element in mat2);
    scanf("%d", &mat2[i]);
}
//Subtraction of two matrices
for (i = 0; i < row1; i++)
{
    mat3[i]= mat1[i] - mat2[i];
}
printf("\nThe Subtraction of two Matrices is : \n");
for (i = 0; i < row1; i++)
{
    printf("%d\t", mat3[i]);
}
printf("\n");
}
return (0);
}

```

Q-WAP IN C TO FIND THE NUMBER OF TIMES AN ELEMENT OCCURE IN AN ARRAY? 2017-S/2018-S

```

#include<stdio.h>
#include<conio.h>
main()
{
    int a[10],n,m,i,p,count=0;
    printf("\n enter the size of the array");
    scanf("%d",&n);
    printf("\n enter the elements into the array");
    for(i=0;i<n;i++)
        scanf("%d",&a[i]);
    printf("\n enter the element to find");
    scanf("%d",&p);
    for(i=0;i<n;i++)
    {
        if(p==a[i])
            count++;
    }
    printf("\n %d is exists %d times in the array",p,count);
    getch();
}

```

Q-WHAT IS RECURSION ?WAP IN C TO FIND OUT FACTORIAL OF A NUMBER WITH & WITHOUT RECURSION? 2018-S-NEW/2017-S-NEW/2017-BACK/2016

WHEN A FUNCTION CALL IT SELF AGAIN AND AGAIN TILL A CONDITION IS SATISFIED THEN IT IS CALLED RECURSION OR RECURSIVE FUNCTION.

PROGRAM WITH RECURSION

```
#include<stdio.h>
int fact(int);
int main(){
    int num,f;
    printf("\nEnter a number: ");
    scanf("%d",&num);
    f=fact(num);
    printf("\nFactorial of %d is: %d",num,f);
    return 0;
}

int fact(int n){
    if(n==1)
        return 1;
    else
        return(n*fact(n-1));
}
```

PROGRAM WITH OUT RECURSION

```
#include<stdio.h>
#include<conio.h>
main()
{
    inti,n,fact=1;
    printf("enter the value of n");
    scanf("%d",&n);
    for(i=1;i<=n;i++)
    {
        fact=fact*i;
    }
    printf("factorial is %d ",fact);
    getch();
}
```

Q-Difference between Call by Value and Call by Reference -2018-W-NEW/2016-S-NEW

Difference between *call by value* and *call by reference*

call by value	call by reference
In <i>call by value</i> , a copy of actual arguments is passed to formal arguments of the called function and any change	In <i>call by reference</i> , the location (address) of actual arguments is passed to formal arguments of the called

made to the formal arguments in the called function have no effect on the values of actual arguments in the calling function.

function. This means by accessing the addresses of actual arguments we can alter them within from the called function.

In call by value, actual arguments will remain safe, they cannot be modified accidentally.

In *call by reference*, alteration to actual arguments is possible within from called function; therefore the code must handle arguments carefully else you get unexpected results.

Call by value

```
#include<stdio.h>
void interchange(int number1,int number2)
{
int temp;
temp= number1;
    number1 = number2;
    number2 = temp;
}
intmain(){
int num1=50,num2=70;
interchange(num1,num2);
printf("\nNumber 1 : %d",num1);
printf("\nNumber 2 : %d",num2);

return(0);

}
```

B.Call by Reference/Pointer/Address :

```
#include<stdio.h>
void interchange(int*num1,int*num2)
{
int temp;
```

```
temp  =*num1;
*num1 =*num2;
*num2 = temp;
}
intmain(){
int num1=50,num2=70;
interchange(&num1,&num2);
printf("\nNumber 1 : %d",num1);
printf("\nNumber 2 : %d",num2);
return(0);
}
```

DEFINE FUNCTION

Function are the block of statement which define a specific task .these are of 2 Types

- 1) user defined function-defined by the user during program
- 2) predefined function-defined by the c-language

- ex-sum()
- avg()
- put()
- ex-prntf()
- scanf()
- gets()
- puts()