

II/SEM/COMMON/2018 (W)/
NEW

COMPUTER APPLICATION

(BET - 104)

Full Marks : 80

Time : 3 hours

Answer any **five** questions including Q.Nos. **1 & 2**.

The figures in the right-hand margin indicate marks.

1. Answer the following : 2 × 10
- (a) Write four output devices.
 - (b) Define line printer.
 - (c) Define GUI.
 - (d) What are four major resources of a computer which are managed by the operating system ?
 - (e) Define computer network.
 - (f) What do you mean by function in C programming language ?
 - (g) Name four internet service providers in India.

(Turn Over)

(2)

(h) Define data capture.

(i) Define escape sequence character constant.
Give two examples.

(j) Define protocol.

2. Answer any *five* questions : 6 × 5

(a) Draw a flow chart to find the sum of first n natural numbers.

(b) Write a program in C to find whether a number is prime or not.

(c) Write the difference between compiler and interpreter.

(d) Define data processing and explain various method of data processing.

(e) Write on different mode of data transmission based on direction of data flow.

(f) Explain the main features of the various types of memory present at different levels of memory hierarchy.

(3)

(g) Give an account of classification of computers based on how they work.

3. Draw a flow chart and write a program in C to get the factorial of a given number. 10

4. Discuss about the generation of computers. Explain the key features of computers of each generation. 10

5. Discuss about various types of operating system used in computer. 10

6. What do you mean by Network topologies ? Write on major types of network topologies. 10

7. Write short notes on (any *two*) : 5 × 2

(a) Features of windows operating system

(b) How to detect virus ?

(c) Central Processing Unit (CPU).

Set B

Computer Application

Subject code - BET-104

2nd Sem Common

Full marks - 80

Q-1

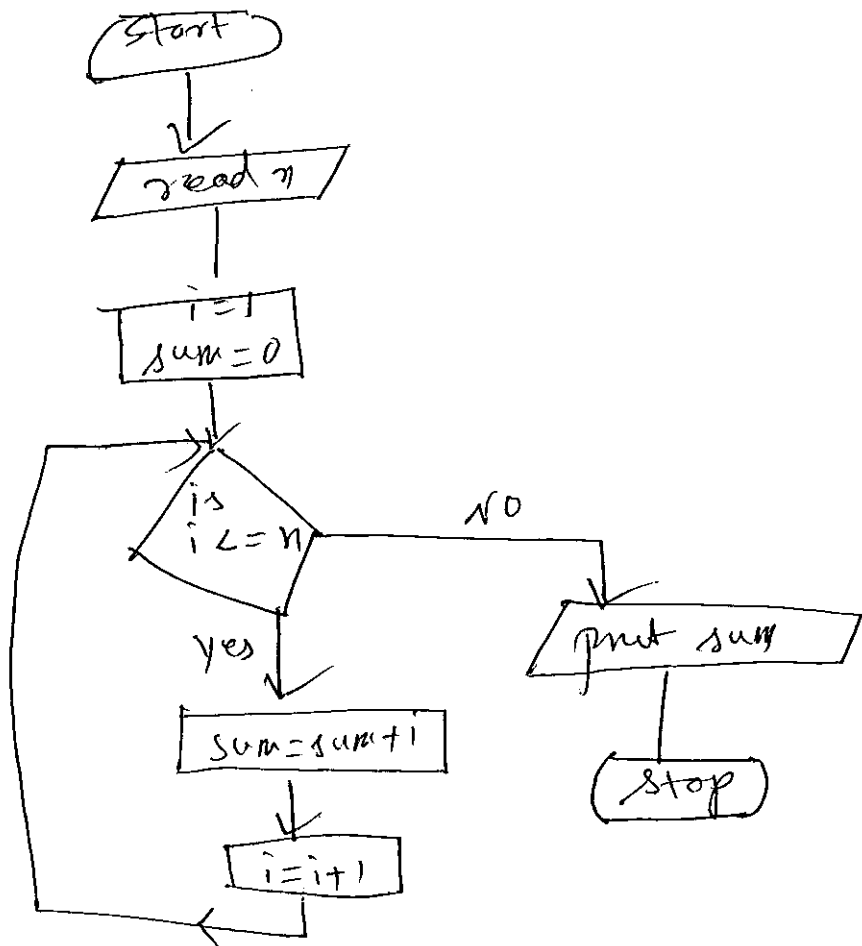
- a) Printer, plotter, monitor, soundbox.
- b) Line printer is an impact printer which prints one line at a time.
- c) GUI stands for graphical user interface. It is a type of user interface that allows users to interact with computers through graphical icons.
ex: - windows OS.
- d)
 - 1) CPU
 - 2) memory
 - 3) I/O devices
 - 4) Information.
- e) It is a collection of several communicating devices connected through telecommunication system for exchange of information.
- f) A function is a group of statements that together perform a task. Every C program has at least one function.
- g)
 - BSNL
 - AIRTEL
 - VODAPHONE
 - SIO.
- h) It is the art of collecting information and changing it into a form that can be processed by a computer.
- i) It is a combination of two characters within single quotes. The first character must be a \.

It is used for specific purposes in a programming language.

- '\n' — new line.
- '\r' — carriage return.
- '\d' — form feed
- '\v' — vertical tab.

5) Set of rules and regulations followed by two communicating devices in a network

Q2 a)



b)

```

main()
{
  int i, c, n;
  scanf("%d", &n);
  c = 0;
  for(i=1; i <= n; i++)
  {
    (n * i) == 0
    c = c + 1;
  }
}
  
```

```

i) (c == 2)
    printf("prime");
else printf("not a prime");
}

```

9) Compiler

- 1) translates the entire program into machine code.
- 2) Takes more time for analyzing the source code
overall execution time is faster
- 3) generates intermediate code hence requires more memory.
- 4) debugging is comparatively hard
- 9) ex - Python, Ruby

Interpreter

- 1) Translates program one statement at a time.
- 3) Takes less time for analyzing the source code.
overall execution time is slower.
- 4) No intermediate code.
so requires less memory.
- 4) debugging is easy.
- 5) C, C++

d) The collection and manipulation of items of data to produce meaningful information.

Manual: - data is processed manually without use of machine or electronic device.

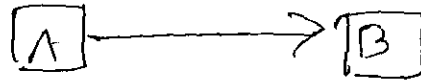
- * slow and chances of error is high.
- * expensive.
- * require large man power.

mechanical: - processing is done by use of mechanical device.

- * more reliable
- * time saving.
- * still the output is limited.

- * fastest and highest remaining
- * high accuracy.
- * minimal man power requirement.

e) simplex: —



- * one way direction
- * can not be alternated.

keyboard → monitor

Half duplex: —

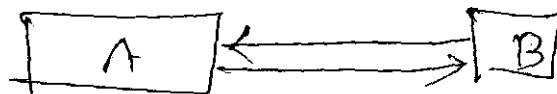


- * Both direction
but not at same time.

* when one acts as a sender, other must act as receiver and vice versa.

* walky-talky.

full duplex: —



- * Both direction simultaneously
- * may have one or more than one path.
- * telephone.

d).

Register memory: —

- * Inbuilt to CPU
- * Binary cell
- * low memory capacity.
- * high speed
- * stores data when it is processed by CPU
- * temporary memory * PC, IR, MDR, MAR

Cache memory: -

- * semiconductor
- * situated inbetween CPU and main memory
- * stores frequently used data.
- * temporary and high speed memory.

Main memory: -

- * ROM & RAM
- * direct communication between memory & CPU
- * RAM is permanent
ROM is temporary.
- * high capacity.

Secondary memory: -

- * permanent memory.
- * stores for future reference.
- * Hard disk.

Backup memory: -

- * permanent memory.
- * detachable and portable memory.
- * pen drive, CD/DVD.

9).

Analog: -

* works on the principle of measuring the variation of voltage, speed, temp etc.

- * less accuracy.
- * specific use
- * scientific research, process control system.

Digital: -

- * counting the binary digits.
- * everything is converted into binary digits.
- * high accuracy.
- * Every field of life (education, research, industries).

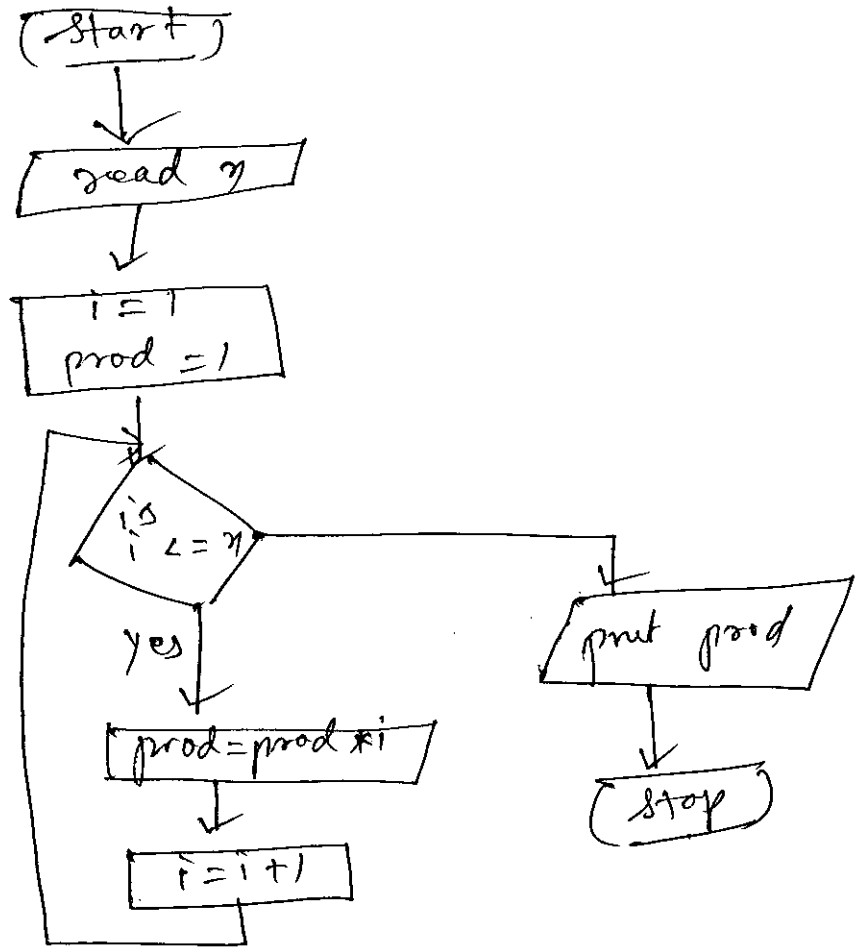
Hybrid: -

* combination of good qualities of analog and digital

and v.v.

- * converts the analog signal to digital
- * scientific research, weather forecasting etc.

Q-3



```
main()
{
    int n, i, prod, sum;
    scanf("%d", &n);
    prod = 1;
    for (i = 1; i <= n; i = i + 1)
        prod = prod * i;
    printf("%d", sum);
}
```


Q-4

1st G.C (1942-1955)

- * vacuum tubes
- * magnetic drum
- * input through punched card
- * output on printouts.
- * machine level language.
- * large space
- * more electricity.
- * more heat.
- * UNIVAC, ENIAC.

2nd G.C (1956-1964):-

- * transistor
- * input through punched card
output through printout.
- * Assembly language.
- * COBOL, FORTRAN, ALGOL.
- * magnet core.
- * more accuracy/reliable.
- * smaller and faster than 1st G.C.
- *
*

3rd G.C. (1965-1975)

- * Integrated circuit.
- * high speed and accuracy.
- * COBOL, FORTRAN, PASCAL, BASIC.
- * keyboard
- * small size,
- * could run time sharing OS.
- *
*

4th G.C (1976-1990):-

- * microprocessor
- * semiconductor memory.
- * MS-DOS, windows, UNIX

- * personal computer.
- * network.
- * development of GUI,
- *

Fifth G.C (1990 - onwards)

- * Artificial Intelligence
- * parallel processing.
- * Superconductor.
- * quantum computation and nanotechnology.
- * Expert Systems, Robotics, neural network.
- * Supercomputers.

0-5

* Batch processing: —

- 1) less interaction between user and machine
- 2) Batch of jobs are processed one after another.
- 3) Large volume data has to be processed and either data or processing is similar in nature.

* Single user/single tasking.

- * one job at a time by one user.
- * palm OS

* ~~multitasking~~: — multitasking

- * more than one task by one user or more than one user.
- * enhances the productivity of users.

* multitasking:

- 1) more than one user can work at a time.
- 2) multiple terminals connected to a computer.
- 3) mainframe or mini computer.
- 4) maximum throughput of ~~sub~~ CPU utilization.

* Multiprocessing:

- 1) two or more processors in a computer.
- 2) parallel processing.
- 3) complex program can be divided into smaller parts and executed concurrently.
- 4) OS will co-ordinate among the processors.

* Multi programming :-

- * interleaved execution of two or more programs by a single processor.
- * maximum throughput of CPU utilization.

* Time sharing :-

- * more than one computer/terminal share a computer's resources.
- * more than one programs by multiple users can be executed by a single processor.

* Real time :-

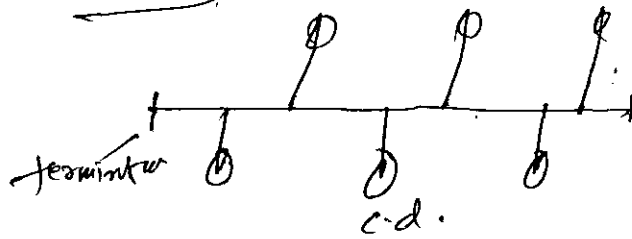
- * very little user interface capability.
- * does not support end-user.

- * It runs applications with very precise timing and high degree of reliability.

Q-6

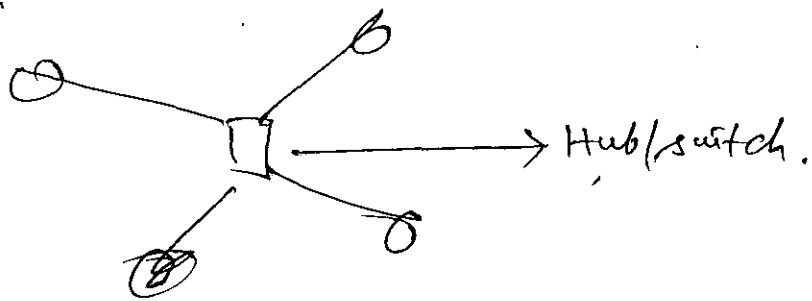
physical arrangement of communicating devices in a network.

* BUS:-



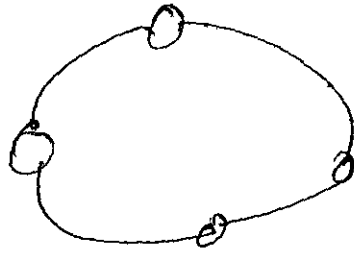
- * single cable
- * less cost
- * easy installation
- * depends on cable.
- * easy to add/remove.
- * more traffic.

* Star



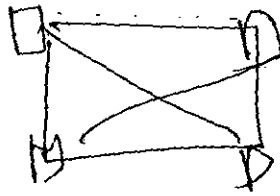
- * Central Controller
- * more cost
- * depends on C.C.
- * easy installation
- * more reliable and effective.

* Ring



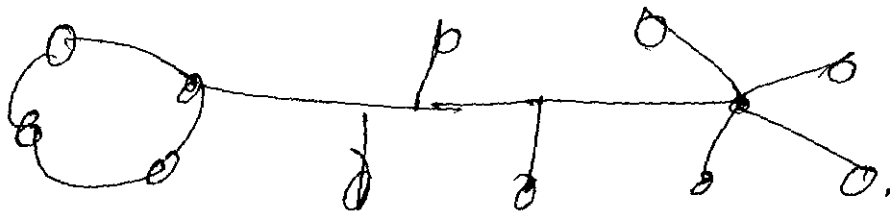
- * two neighbours of each device.
- * clockwise / anticlockwise.
- * equal chance of each c.i.d. to transmit data.
- * less effective.

* MESH :-



- * dedicated link between two c.i.d.
- * less traffic
- * robust configuration
- * High reliability
- * more cabling
- * not easy to detect the fault

* Hybrid / tree / extended tree.



- * large distance
- * more cable and other interconnecting devices.

Q-7

a)

- Desktop: —
- taskbar: —
- click & double click: —
- folder: —
- recycle bin —
- my computer —
- windows explorer: —
- accessories —
- Control panel: —

b).

- * slow booting
- * resetting automatically.
- * hanged during working in an application.
- * displays "insufficient memory space"
- * displays unusual figure/signs
- * display "dishfull"
- * performing some operations automatically without user's knowledge.

c).

central processing unit

- * Register
- * control unit
- * ALU
- * it performs the arithmetic & logical operation of data
- * stores the data temporarily when they are under the process.