

As-2874

B.Sc. (Hon's) (First Semester) Examination, 2013

COMPUTER SCIENCE

Paper : PCSC-101

(Introduction to Programming Methodology)

Section A

(Objective Type Questions)

Choose the correct answer:

1. An error in computer data is called
a) Chip b) Bug c) CPU d) Storage device

Ans. **b) Bug**

2. Operating system is---
a) A collection of hardware components c) A collection of software routines
b) A collection of input-output devices d) none of the above

Ans. **c) A collection of software routines**

3. Which of the following is not the programming language?
A) COBOL B) FORTRAN
C) PASCAL D) LOTUS

Ans. **D) LOTUS**

4. A translator is best described as
a) An Application software
b) A system software
c) A hardware component
d) None of the above

Ans. A system software

5. 1024 bytes represent a _____
a) Megabyte b) Gigabyte c) Kilobyte d) None of the above

Ans. **c) Kilobyte**

6. A step by step procedure used to solve a problem is called
a) Operating system
b) Algorithm
c) Application Program
d) None of the above

Ans. **Algorithm**

7. Bit is short for:
a) Binary system
b) Digital byte
c) binary unit
d) binary digit

Ans. **binary digit**

8. One Kilobyte means :
(a) 2^2 Bytes (b) 2^{10} Bytes
(c) 2^{100} Bytes (d) None of the above

Ans. **(b) 2^{10} Bytes**

9. DVD stands for _____
a) digital video data
b) direct video
c) digital versatile disc
d) direct vertical disc

Ans. **digital versatile disc**

10. GUI Stands for _____
a) Graphical User Interface
b) Greater User Interface
c) Graphical Utility Icon
d) Graphical Utility Interface

Ans. **Graphical User Interface**

Section B

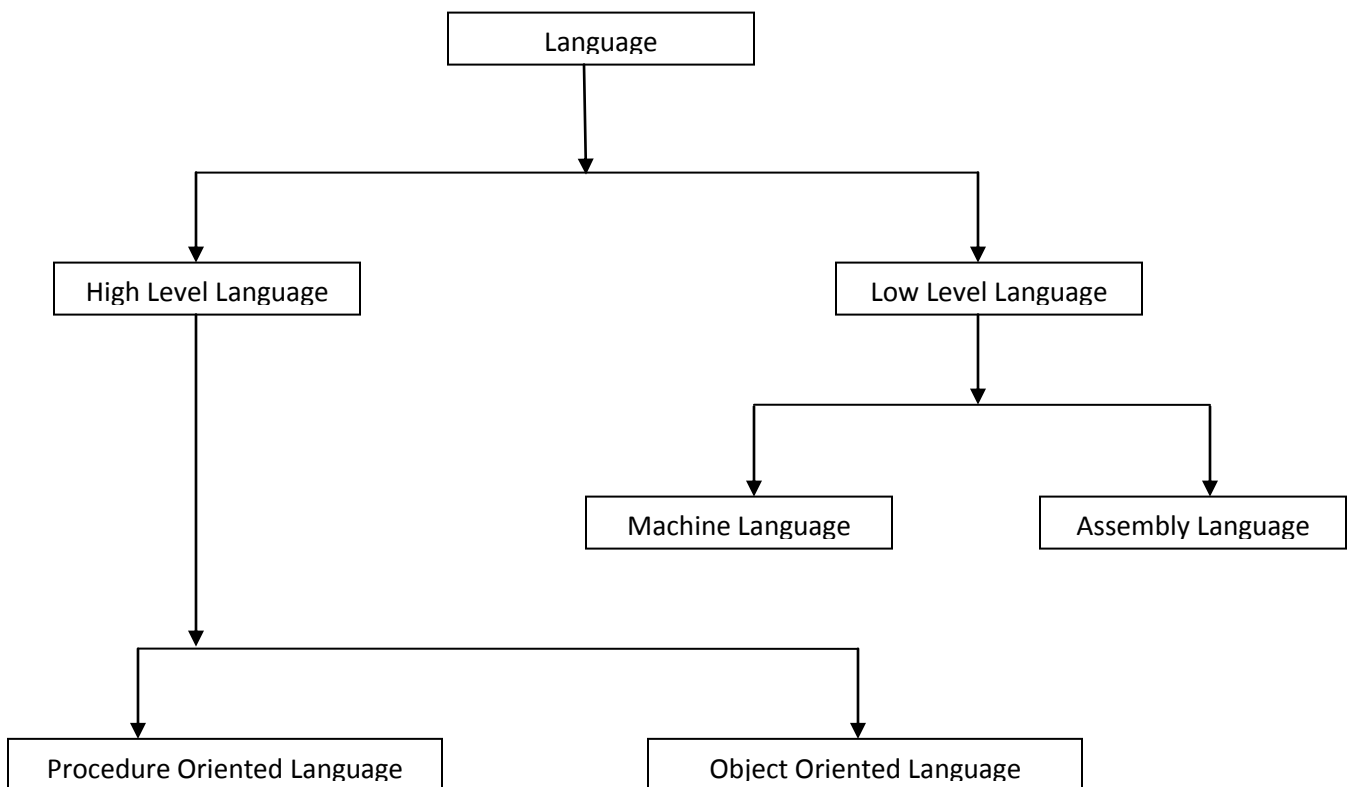
Ans. 1 Language:

Language is the means of communication through which we can communicate to each other.

OR

The method of human communication, either spoken or written, consisting of the use of words in a structured and conventional way.

Classification of language used by the computer----



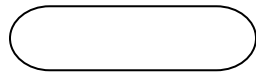
Note: All the computer languages classified above should be described in detail with examples.

Ans. 2 Flowchart:

A **flowchart** is a type of diagram that represents an algorithm or process, showing the steps as boxes of various kinds, and their order by connecting them with arrows. This diagrammatic representation illustrates a solution to a given problem. Process operations are represented in these boxes, and arrows; rather, they are implied by the sequencing of operations. Flowcharts are used in analyzing, designing, documenting or managing a process or program in various fields.

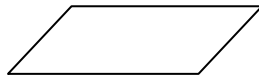
Symbols used in flowchart:

1. Terminal:



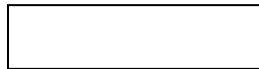
Start and **end** symbols, represented as lozenges, ovals or rounded rectangles, usually containing the word "Start" or "End", or another phrase signaling the start or end of a process, such as "submit enquiry" or "receive product".

2. Input/Output symbol:



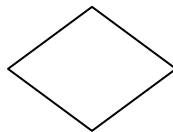
Input/Output, represented as a parallelogram. Examples: Get X from the user; display X.

3. Processing Symbol:



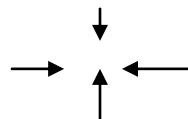
Processing steps, represented as rectangles. Examples: "Add 1 to X"; "replace identified part"; "save changes" or similar.

4. Conditional (or decision) Symbol:



Represented as a diamond (rhombus). These typically contain a Yes/No question or True/False test. This symbol is unique in that it has two arrows coming out of it, usually from the bottom point and right point, one corresponding to Yes or True, and one corresponding to No or False. The arrows should always be labeled. More than two arrows can be used, but this is normally a clear indicator that a complex decision is being taken, in which case it may need to be broken-down further, or replaced with the "pre-defined process" symbol.

5. Arrows



Arrows, showing what's called "flow of control" in computer science. An arrow coming from one symbol and ending at another symbol signifies flow passes to the symbol the arrow points to.

6. Connector:



Connector is used as a connecting point when the flowchart necessitates using more than one page, or refers to a complicated subroutine that would be impossible to contain on the main flowchart page.

Advantages of Flowchart:

1. **Communication:** - Flowcharts are better way of communicating the logic of a system to all concerned.
2. **Effective analysis:** - With the help of flowchart, problem can be analyzed in more effective way.
3. **Proper documentation:** - Program flowcharts serve as a good program documentation, which is needed for various purposes.
4. **Efficient Coding:** - The flowcharts act as a guide or blueprint during the systems analysis and program development phase.
5. **Proper Debugging:** - The flowchart helps in debugging process.
6. **Efficient Program Maintenance:** - The maintenance of operating program becomes easy with the help of flowchart. It helps the programmer to put efforts more efficiently on that part.

Ans 3: File: File is the collection of interrelated records. A **computer file** is a digital resource for storing information, which is available to a computer program and is usually based on some kind of durable storage. A file is "durable" in the sense that it remains available for other programs to use after the program that created it has finished executing. Computer files can be considered as the modern counterpart of paper documents which traditionally are kept in office and library files, and this is the source of the term.

MASTER FILES:

- Permanent collection of data against which transactions are usually processed.
- Will contain REFERENCE and DYNAMIC data. Reference data tends to be relatively permanent (occasional or infrequent changes are made: insertion of new records, deletions or alterations) and is processed by AMENDING. Dynamic data is data which changes frequently and is processed by UPDATING.
- Usually have some order to the way records are stored: use the RECORD KEY.

For example a HOTEL FILE will contain both reference and dynamic data:

REFERENCE DATA. Items of data describing the rooms: type, size, number of beds, sea view..., which will rarely change. DYNAMIC DATA. Items of data describing the guest: name, length of stay, special requirements.... Which will change frequently, perhaps every day.

TRANSACTION FILES:

- Temporary collection of data used to change information on a master file.
- Contains only that information which is needed to identify a record in the master file and make the necessary changes.
- The records may not be in any order at all: either SERIAL or SEQUENTIAL ordering is normal.
- Once used the transaction file may be deleted.

For example a company will hold a PAYROLL file. Each week information about employees will need to be processed. What data would the transaction file contain? Employee number (to identify the employees record in the master file), weekly pay, days off sick, new employee, employee left the company.....

BACKUP FILE

Backup is the activity of copying files or databases so that they will be preserved in case of equipment failure or other catastrophe. Backup is usually a routine part of the operation of large businesses with mainframes as well as the administrators of smaller business computers. For personal computer users, backup is also necessary but often neglected. The retrieval of files you backed up is called *restoring* them.

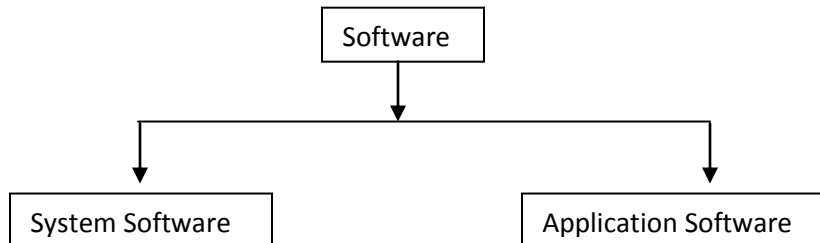
OUTPUT FILE

A computer file that contains data that are the output of a device or program. Copying and archiving of computer data so it may be used to *restore* the original after a data loss event.

REPORT FILE

Definition with example.

Ans. 5 Software is a general term for the various kinds of programs used to operate computers and related devices. Computer software is a general term that describes computer programs. Related terms such as software programs, applications, scripts, and instruction sets all fall under the category of computer software.



Note: Definition of System Software and Application Software with Examples should be written.

Difference between System Software and Application Software

- 1) a **system software** runs the system where an **application system** runs over the system software.
- 2) a system software are programs that run & control the hardware units of the system & an **application software** doesn't.
- 3) system programs are written using dll, exe files for windows & rpm files for linux etc, where application software are developed on the basis these files or by using different language files.
- 4) u can't create applications using system software but application software are specially made to create applications for users.

Ans. 7 Write the full form of

FORTTRAN	Formula Translation
BASIC	Beginners all purpose symbolic Instruction Code
COBOL	Common Business Oriented Language
SNOBOL	String Oriented Symbolic Language
JPEG	Join Photographic Experts Group

Ans . 8 Definition of Backup and Output file with example.