

37 (Sem-1) IT/MCA 1.1

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IT/MCA

Paper : 1.1

(Fundamentals of Computers)

Full Marks : 100

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

1. Choose the correct option among the following : 1×10=10
- (a) Function(s) of an operating system is/are
- (i) resource management
 - (ii) file management
 - (iii) security management
 - (iv) All of the above
- (b) A linker is a program that
- (i) contains instructions to load machine codes of a program into the memory
 - (ii) converts source code into object code
 - (iii) links small programs called subroutines with the main program
 - (iv) None of the above

- (c) Instructions written using sequences of 0's and 1's are known as
 - (i) assembly language
 - (ii) high-level language
 - (iii) machine language
 - (iv) 4th generation language

- (d) Assembly language is
 - (i) 4th generation language
 - (ii) 3rd generation language
 - (iii) 1st generation language
 - (iv) 2nd generation language

- (e) Assembly language is translated into machine language by
 - (i) assembler
 - (ii) compiler
 - (iii) linker
 - (iv) interpreter

- (f) Partitioning produces several logical hard disks and
 - (i) several physical disks
 - (ii) no physical disk
 - (iii) two physical disks
 - (iv) one physical disk

- (g) Devices such as printers and scanners are installed on the computer using
- (i) system drivers
 - (ii) software drivers
 - (iii) device drivers
 - (iv) All of the above
- (h) A shared communication path consisting of one or more connection lines is known as
- (i) bus
 - (ii) link
 - (iii) connector
 - (iv) None of the above
- (i) A data bus
- (i) transmits data
 - (ii) carries address of main memory location from where data can be accessed
 - (iii) indicates the direction of data transfer
 - (iv) All of the above
- (j) A multiplexer
- (i) selects one destination register to transfer the information to or from the bus
 - (ii) transmits data between two registers

(iii) selects the source register whose binary information is then placed in the bus

(iv) None of the above

2. Fill up the blanks : 1×10=10

(a) The process of transferring data and instructions from the external environment into the computer system is performed by the — unit.

(b) — also stores any intermediate results generated by the ALU.

(c) — first used the term 'software'.

(d) — helps the end users to complete one or more specific tasks.

(e) — OS permits multiple users to use the computer and run programs at the same time.

(f) The main function of — is to simply load the program into the memory.

(g) The speed at which the CPU performs its basic operations is called —.

(h) In — stage of a computer virus, it is spread to the system and network.

(i) Joystick is a/an — device.

- (j) A/an — is a command given to a computer to perform a specified operation on given data.

3. State *True* or *False* : 1×10=10

- (a) The operating system is not responsible for protecting the resources and information of a computer from destruction and misuse.
- (b) System software are the programs held temporarily on a machine, which relieve the programmer from mundane tasks and improve resource utilization.
- (c) Programs written in high-level language need to be translated into machine language by a special program called interpreter.
- (d) A procedure that permits running of processes that may not be entirely in memory is called a virtual memory.
- (e) In FIFO page replacement algorithm whenever a page is to be replaced, the oldest page is selected.
- (f) In LRU page replacement algorithm whenever a page is to be replaced, the page that is recently used is selected.
- (g) The cache memory is located between main memory and secondary memory.

- (h) The demerit of CD-ROM is that the access time is much longer than that of magnetic disk.
- (i) An optical disk is also known as diskette.
- (j) RAM is a non-volatile memory.

4. Match the Column—A with Column—B :

$1 \times 10 = 10$

Column—A	Column—B
(a) Charles Babbage	(i) bus
(b) Transistors	(ii) computer system
(c) A computer must be able to move data between itself and the	(iii) main memory
(d) Control unit controls all activities taking place inside the	(iv) execution time
(e) The output of seven registers and memory are linked into the	(v) computer
(f) The time required to complete one instruction is called	(vi) outside world
(g) The memory is an integral part of any	(vii) common bus
(h) The CPU communicates with the other components via a	(viii) father of modern digital computer
(i) The page table indicates the position of pages in the	(ix) Generation II
(j) System software	(x) register secondary memory operating system

5. Answer any *five* of the following : 5×5=25

- (a) What is memory hierarchy? List the three key parameters on which the memory depends down the hierarchy.
- (b) What is computer virus? Give two examples of computer virus.
- (c) What is ROM? What are the different types of ROM?
- (d) What is system software? Is MS-Word a system software? Give an example of system software.
- (e) What is a bus? What are the different types of bus?
- (f) What are mainframe computers? What are the various components of mainframe computers?

6. Explain the characteristics of different types of computer. 10

Or

What is a computer software? Explain the different classifications of computer software.

7. Define computer. Explain, with the help of a diagram, the different functional units of a computer. 10

(8)

Or

Explain the characteristics of the different programming languages.

8. Write short notes on (any *three*) : 5×3=15
- (a) Computer Virus
 - (b) Virtual Memory
 - (c) Main Memory
 - (d) Instruction Execution
