BCA–11

Computer Organization

Bachelor of Computer Applications (BCA–11/16)

Fourth Semester, Examination, 2017

Time : 3 Hours   **Max. Marks : 60**

Note : This paper is of **sixty (60)** marks containing **three (03)** sections A, B and C. Attempt the questions contained in these sections according to the detailed instructions given therein.

Section–A

(Long Answer Type Questions)

Note : Section 'A' contains four (04) long answer type questions of fifteen (15) marks each. Learners are required to answer *two* (02) questions only.

1. Answer the following :

   (a) Explain a simple method of translating virtual address of a program into physical address, with the help of a diagram.

   (b) Answer the following with respect to magnetic disk, the secondary storage device :

      (i) Seek time

      (ii) Latency

      (iii) Access time

2. What is flip-flop ? Explain the types of flip-flops.

3. Write and explain the control sequence for execution of an unconditional branch instruction.

4. Describe the data and control path techniques in pipelining.

Section–B

(Short Answer Type Questions)

Note : Section 'B' contains eight (08) short answer type questions of five (05) marks each. Learners are required to answer *four* (04) questions only.

1. Write a short note on I/O processor.

2. Explain different types of mapping functions in cache memory.

3. What is TLB (Translation Look Aside Buffer) ? What are its functions ?

4. Explain the working of micro-program sequencer.

5. Explain micro-programmed control unit. What are its advantages and disadvantages ?

6. Explain cache coherence strategies.

7. Compare RISC with CISC architecture.

8. Explain speedup performance models in pipelining.

Section–C

(Objective Type Questions)

Note : Section 'C' contains ten (10) objective type questions of one (01) mark each. All the questions of this section are compulsory.

1. Fragmentation is :

   (a) Dividing the secondary memory into equal sized fragments

(b) Dividing the main memory into equal size fragments

(c) Fragments of memory words used in a page

(d) Fragments of memory words unused in a page

2. Which of the following memories must be refreshed many times per second ?

(a) Static RAM

(b) Dynamic RAM

(c) EPROM

(d) ROM

(e) None of these

3. CPU fetches the instruction from memory according to the value of :

(a) Status register

(b) Instruction register

(c) Program status word

(d) Program Counter

4. Run time mapping from virtual to physical address is done by :

(a) Memory management unit

(b) CPU

(c) PCI

(d) None of the mentioned

5. Program always deals with :

(a) Absolute address

(b) Physical address

(c) Logical address

(d) Relative address

6. In which addressing mode the operand is given explicitly in the instruction ?

   (a) Absolute   (b) Immediate

   (c) Indirect   (d) Direct

7. When necessary, the results are transferred from the CPU to main memory by :

   (a) I/O devices   (b) CPU

   (c) Shift registers   (d) None of these

8. The average time required to reach a storage location in memory and obtain its contents is called :

   (a) Latency time   (b) Access time

   (c) Turnaround time   (d) Response time

9. The memory unit that communicates directly with the CPU is called the :

   (a) Main memory

   (b) Secondary memory

   (c) Shared memory

   (d) Auxiliary memory

10. Content of the program counter is added to the address part of the instruction in order to obtain the effective address is called :

   (a) Relative address mode

   (b) Index addressing mode

   (c) Register mode

   (d) Implied mode

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