Bachelor of Computer Applications 2nd Semester
1048
COMPUTER ORGANIZATION
Paper–BCA-16-202

Time Allowed : Three Hours]   **[Maximum Marks : 65**

Note :– Attempt **one** question each from Sections A, B, C and D. Section E is compulsory.

SECTION–A

1. (a) What is Stored Program Architecture ? Explain the limitations of Stored Program Architecture.   6

     (b) What are combinational blocks ? Explain the working of a 3-to-8 line decoder with the help of logic symbol, logic diagram and truth table.   7

2. (a) What is a flip-flop ? What is the use of flip-flops ? Explain the working of any two flip-flops.   6

     (b) Multiply–12 and –9 using Booth's algorithm.   7

SECTION–B

3. (a) What is addressing mode ? Explain Direct, Indirect, Displacement and Register addressing modes.   7

(b) What are microinstructions ? Explain various Arithmetic and Logic microinstructions. 6

4. (a) What is instruction Cycle ? Explain with the help of a flowchart. 7

(b) Explain Strobe based and handshake based communication. 6

SECTION–C

5. (a) What is memory hierarchy ? Explain different types of memories used in a computer. 7

(b) Explain the working of Virtual Memory with the help of a diagram. 6

6. (a) What are the differences between Assembly Language and Machine Language ? What is the use of pseudo instructions in Assembly Language ? 6

(b) Write an Assembly Language program using subroutines to perform multiplication of two numbers. 7

SECTION–D

7. (a) What is motherboard ? List and explain various components attached on a motherboard. 5

(b) What is an Expansion card ? Explain any three expansion cards. 8

8. (a) What are the various diagnostics performed on a Personal Computer for its maintenance? 6

    (b) What is a computer virus? What are the various symptoms that indicate infection of a PC by a virus? How virus can be removed from an infected computer? 7

SECTION–E

9. Attempt **all** questions:

    (a) What is a half adder? 2

    (b) Define Cache Initialization 2

    (c) Perform $(12)_{10} + (27)_{10}$ using 2's complement. 3

    (d) What is an instruction set? 2

    (e) What is cycle stealing in DMA? 2

    (f) What is boot sector virus? 2