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**35116**

# BT–5 / D-19

# COMPUTER ORGANISATION AND ARCHITECTURE

## Paper–CSE-307N

*Time allowed : 3 hours]* *[Maximum marks : 75*

***Note:-*** *Attempt Five questions in all, selecting at least One question from each unit.*

### Unit–I

1. (a) What is computer architecture? Discuss the evolution of computer architecture. 7

   (b) Devise an algorithm for division of two integers using restoring method. 8

2. (a) Devise an algorithm for addition and subtraction of two integers represented in sign-magnitude representation. 7

   (b) What is normalized floating-point representation of numbers? Explain IEEE standard for representing floating-point numbers. 8

### Unit–II

3. (a) What are typical registers in a computer organization? Explain their purpose. 7

   (b) What is microinstruction? Explain different formats-for microinstructions along with pros and cons. 8

4. (a) What are register reference instruct[illegible]? Explain their fetch-decode-execute cycle. 7









   (d) What is control unit? Explain the working of microprogrammed control unit with its block diagram. 8

### Unit–III

5. (a) Explain GPR based CPU organization with suitable diagram. Also explain the instruction formats of this organization. 7

   (b) What are indirect and register indirect addressing modes? Also explain their applications. 8

6. (a) What is instruction level parallelism? Explain the working of instruction pipeline with time-space diagram. 7

   (b) What is vector processing? Explain any four vector instructions with examples. 8

### Unit–IV

7. (a) Why do you need separate I/O interface? Draw the block diagram of I/O interface and explain its working. 7

   (b) What is handshaking? Explain source-initiated handshaking with timing diagram. 8

8. (a) What is priority interrupt? Explain working of daisy chain with suitable diagram. 7

   (b) What is IOP? Explain its working with suitable diagram. 8