

Code No: **RT41044****R13****Set No. 1**

IV B.Tech I Semester Supplementary Examinations, February/March - 2018
COMPUTER ARCHITECTURE AND ORGANIZATION
(Common to Electronics and Communication Engineering and Electronics and Instrumentation Engineering)

Time: 3 hours**Max. Marks: 70***Question paper consists of Part-A and Part-B**Answer ALL sub questions from Part-A**Answer any THREE questions from Part-B*

PART-A (22 Marks)

1. a) What are different types of computers? Mention their applications. [4]
- b) Define microinstruction and microprogram. [4]
- c) What is a control memory? [4]
- d) Compare between static RAMs and dynamic RAMs. [4]
- e) What is the need for input output ports? [3]
- f) What is cache coherence? [3]

PART-B (3x16 = 48 Marks)

2. a) Perform the $(+21)+(-16)$ and $(-23)+(+13)$ arithmetic operations using 2's complement representation for negative numbers [8]
- b) What are multiprocessors? Discuss their characteristics. [8]
3. a) What is register transfer language? With suitable examples, explain the representation of instructions in register transfer language and assembly language. [8]
- b) What is a stack? Discuss its organization. [8]
4. a) Define *microinstruction* and *microprogram*. Write an example for microprogram. [8]
- b) What is hardwired control? Discuss its advantages and disadvantages. [8]
5. a) What is the need for memory in computers? Discuss different types of memories. [8]
- b) Explain the memory hierarchy in computers. [8]
6. a) List and briefly explain various input-output data transfer schemes. [8]
- b) What is an Input-Output Processor (IOP)? Discuss its use. [8]
7. a) What is parallel processing? What are its advantages? Explain. [8]
- b) Explain the implementation of instruction pipelining. [8]