

Code No: RT41044

R13

Set No. 1

IV B.Tech I Semester Supplementary Examinations, October/November-2019

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 is the difference between the restoring and non-restoring method of division? [4]
- b) What are the types of micro operations? [3]
- c) What is a control word? [3]
- d) What is Memory system? Define Memory refreshing. [4]
- e) Define intra segment and inter segment communication. [4]
- f) What is bus arbitration? Explain. [4]

PART-B (3x16 = 48 Marks)

2. a) Explain the architecture of a basic Computer. [6]
- b) Distinguish between multiprocessors and multi computers. [4]
- c) Explain the Booth's algorithm for multiplication of signed two's complement numbers. [6]
3. a) Explain the Differences between CISC and RISC. [8]
- b) Discuss about Memory Reference Instructions. [8]
4. a) Explain the basic organization of a micro programmed control unit and the generation of control signals using micro program. [8]
- b) Describe the control unit organization with a separate Encoder and Decoder functions in a hardwired control. [8]
5. a) What do you mean by virtual memory? Discuss how paging helps in implementing virtual memory. [8]
- b) Discuss any six ways of improving the cache performance. [8]
6. a) Discuss about priority interrupt. [8]
- b) Explain about Input-output interface. [8]
7. a) What are multiprocessors? Mention the categories of multiprocessors? List the major MIMD Styles. [8]
- b) Describe the data and control path techniques in pipelining. [8]