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II/IV B.Tech (Regular/Supplementary)DEGREE EXAMINATION

August, 2021 — **Computer Science & Engineering**

Fourth Semester — **Computer Organization**

Time: Three Hours — **Maximum:** 50 Marks

Answer Question No. 1 Compulsorily. (10X1 = 10 Marks)

Answer ANY ONE question from each Unit. (4X10=40 Marks)

1. Answer the following: (10X1=10 Marks)
   a) List different types of computers.
   b) Perform the subtraction of 1110 and 1100 in 2's complement form.
   c) Define the interrupt.
   d) How to identify the instruction is memory-reference instruction?
   e) Define effective address.
   f) What is two address instruction?. Give one example.
   g) What is the purpose of BSA program control instruction?.
   h) Differentiate SRAM and DRAM.
   i) Define miss ratio.
   j) Give some examples of peripheral devices.

Unit - I

2. a) Explain briefly about different number systems with examples — 5 M
   b) What is register transfer language? Explain the basic symbols used in register transfer. — 5 M

(OR)

3. a) Discuss the advantages, dis advantages, and applications of — 6 M
      i) Excess-3 code ii) Gray Code
   b) Explain the common bus system with four registers. — 4 M

Unit - II

4. a) Explain the Input-output and interrupt instructions. — 5 M
   b) Explain the design of micro programmed control unit in detail. — 5 M

(OR)

5. a) Explain about the instruction cycle. — 5 M
   b) Discuss the role of micro program sequencer in reading and executing micro instruction. — 5 M

Unit - III

6. a) Explain the basic computer instruction formats. — 5 M

   b) Multiple $(-7)_{10}$ with $(3)_{10}$ by using Booth's multiplication. Give the flow table of the Multiplication. — 5M

(OR)

7. Explain briefly about different addressing modes with examples — 10 M

Unit - IV

8. a) What is virtual memory? With the help of neat sketch explain the method of virtual to physical address translation. — 5 M
   b) Draw the block diagram of a DMA controller and explain its functioning? — 5 M

(OR)

9. Explain briefly about Cache Memory with memory mapping techniques — 10 M