# [07 – 2219]

II/IV B.Tech. DEGREE EXAMINATION

Second Semester

Computer Science and Engineering

COMPUTER ORGANIZATION

(Common with information Technology)

(With effective from the admitted batch 2007–2008)

Time : Three hours Maximum : 70 marks

First question is compulsory.

Answer any FOUR for the remaining questions.

All questions carry equal marks.

1. (a) Define sequential circuit and combinational circuit.

   (b) Differentiate register transfer and memory transfer.

   (c) Define the terms mask and clear.

   (d) What are the different addressing modes?

   (e) What is the difference between a direct and an indirect address instruction?

   (f) What are the four computer instructions?

   (g) Define serial and parallel communication.

2. (a) Explain logic and shift micro operations.

   (b) Draw and Explain bus line with three state–buffers.

3. A computer uses a memory unit with 256k words of 32 bits each. A binary instruction code is stored in one word of memory. The instruction has four parts: an indirect bit, an operation code, a register code part to specify one of 64 register and an address part.

   (a) How many bits are there in the operation code, the register code part and the address part?

   (b) Draw the instruction word format and indicate the no.of bits in each part.

   (c) How many bits are there in the data and address inputs of the memory?

4. (a) Write a short notes on decoding of micro operation fields with neat sketch.

   (b) Write a short notes on micro program sequence for a control memory.

5. (a) Explain general register organization.

   (b) Explain different type of instruction formats with suitable examples.

6. (a) Give the flow chart for add and subtract operations.

   (b) Explain the booths multiplication algorithm with the help of an example.

7. (a) Explain input–output interface.

   (b) Explain handshaking in asynchronus data transfer.

8. (a) Explain the concept of memory hierarchy.

   (b) Explain the concept of associative memory.

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