IV B.Tech II Semester(R07) Regular Examinations, April 2011 COMPUTER ORGANIZATION & ARCHITECTURE (Mechanical Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE questions All questions carry equal marks $\star \star \star \star \star$

- 1. (a) Explain in detail about CISC and RISC instruction set?
 - (b) Mention the different types of Error Detection codes and explain each one with simple example?
- 2. (a) With example explain about logical Micro operations?
 - (b) The 8-bit registers AR, BR, CR and DR initially have the following values.
 - AR=11110010 BR=1111111 CR=10111001 DR=11101010 Determine the 8-bit values in each register after the execution of following sequence micro operations?

Add BR to AR

- i. $AR \leftarrow AR + BR$
- ii. CR \leftarrow CR \cap DR, BR \leftarrow BR+1
- iii. AR←AR-CR

And DR to CR increment BR Subtract CR from AR

- 3. (a) Define instruction format and explain in detail with example?
 - (b) What is need of a addressing mode? Explain Addressing modes?
- 4. Explain the following:
 - (a) Conditional branching.
 - (b) Mapping instructions.
- 5. (a) Explain about virtual memory?
 - (b) Explain about cache memory?
- 6. (a) Explain in detail about Asynchronous communication interface?
 - (b) Discuss about input-output processor?
- 7. In detail explain about vector processing?
- 8. Explain in detail about various inter connection structures?

www.FirstRanker.com

IV B.Tech II Semester(R07) Regular Examinations, April 2011 COMPUTER ORGANIZATION & ARCHITECTURE (Mechanical Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE questions All questions carry equal marks $\star \star \star \star \star$

- 1. (a) Explain how floating-point division is done?
 - (b) Perform the following division operations?
 - i. 110/111
 - ii. 0011/1011
- 2. (a) Write about shift micro operations ?
 - (b) Design a 4-bit combinational circuit decrementer using four full-adder?
- 3. (a) In detail explain about 'Stack organization'?
 - (b) Explain in detail about RISC?
- 4. Explain in detail about Design of control unit?
- 5. (a) Explain Memory hierarchy in a computer system?
 - (b) Discuss various address mappings in cache memory?
- 6. (a) Explain the following:
 - i. Dairy chaining priority interrupt
 - ii. Parallel priority interrupt.
 - (b) Explain about serial communication protocol IEEE 1394?
- 7. (a) Explain about parallel processing?
 - (b) Explain in detail about pipe line processing?
- 8. (a) Write about cache conference?
 - (b) Explain Dynamic Arbitration algorithms?

3

IV B.Tech II Semester(R07) Regular Examinations, April 2011 COMPUTER ORGANIZATION & ARCHITECTURE (Mechanical Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE questions All questions carry equal marks $\star \star \star \star \star$

N.C.Y

- 1. (a) Explain about various functional units of a computer?
 - (b) How the multiprocessors are different from multicomputer?
 - (c) Discuss the procedure to subtract two unsigned memories with example?
- 2. (a) Explain about indirect and direct addresses with diagrams?
 - (b) Explain about arithmetic logic shift unit?
- 3. (a) Discuss about the following:
 - i. Program interrupt
 - ii. Interrupt cycle
 - (b) Explain in detail about RISC?
- 4. (a) Discuss about control memory?
 - (b) Explain about conditional branching?
- 5. Explain the following?
 - (a) Main-memory
 - (b) Cache memory
 - (c) Virtual memory.
- 6. (a) Discuss various modes of data transfer?
 - (b) Explain about DMA?
- 7. (a) Explain about instruction pipeline with example?
 - (b) Write about Array processors?
- 8. (a) Discuss about interprocessor synchronization?
 - (b) Write about shared memory multiprocessors?

4

Max Marks: 80

IV B.Tech II Semester(R07) Regular Examinations, April 2011 COMPUTER ORGANIZATION & ARCHITECTURE (Mechanical Engineering)

Time: 3 hours

Answer any FIVE questions All questions carry equal marks ****

- 1. Discuss about the performance of a computer.
- 2. (a) Explain about Arithmetic logic shift unit in detail?
 - (b) Discuss about instruction cycle with example.
- 3. (a) Explain about various memory reference instructions?
 - (b) Write about "stack organization" in detail?
- 4. (a) Write a short notes on:
 - i. Micro instruction format.
 - ii. Micro operation
 - iii. Micro program
 - iv. Micro code.
 - (b) With diagram explain about control memory?
- 5. What is Virtual memory and explain in detail?
- 6. (a) Explain in detail about DMA?
 - (b) Explain about serial communication protocol RS232?
- 7. (a) Design a six-segment instruction pipeline for a computer specify the operations to be performed in each segment?

rer

- (b) Discuss about Array processors?
- 8. (a) Discuss the differences between Loosely coupled and Tightly coupled multiprocessors?
 - (b) Explain the following:
 - i. Multistage switching networks
 - ii. Hypercube system.
