Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 42378

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2018
Fourth Semester
Computer Science and Engineering
CS 2253 – COMPUTER ORGANIZATION AND ARCHITECTURE
(Common to Information Technology)
(Regulations 2008)
(Also Common to PTCS 2253 – Computer Organisation and Architecture for B.E. (Part-Time) Third Semester – CSE – Regulations 2009)

Time : Three Hours | Maximum : 100 Marks

Answer ALL questions

PART – A (10×2=20 Marks)

1. What is meant by an addressing mode ? Mention most important of them.

2. State the rule for floating point addition.

3. Define data path in the processor unit.

4. What is MFC ?

5. What is meant by data hazards in pipelining ?

6. Define pipeline speedup.

7. Write the functionality of memory management unit.

8. Differentiate between EPROM and EEPROM.

9. Differentiate a subroutine and an interrupt – service – routine.

10. What do you mean by cycle stealing ?

PART – B (5×16=80 Marks)

11. a) i) Explain different types of instructions with examples. Compare their relative merits and demerits. (8)

ii) Explain with an example, how to multiply two unsigned binary numbers. (8)

(OR)

b) Explain the design of ALU in detail. (16)

12. a) Explain micro programmed control unit. What are the advantages and disadvantages of it ? (16)

(OR)

b) i) Explain the operation of hardwired control unit. (8)

ii) Explain in detail about multi bus architecture. (8)

13. a) i) Describe the data and control path techniques in pipelining. (10)

ii) Briefly explain the speedup performance models for pipelining. (6)

(OR)

b) i) What is instruction hazard ? Explain in detail how to handle the instruction hazards in pipelining with relevant examples. (10)

ii) Write note on exception handling. (6)

14. a) i) Compare Asynchronous DRAM and Synchronous DRAM. (8)

ii) Write notes on cache memory mapping. (8)

(OR)

b) i) Describe the mapping functions used in cache memory system. (8)

ii) Elaborate the magnetic tape systems. (8)

15. a) What do you mean by bus arbitration ? Explain the different types of arbitration with neat diagrams. (16)

(OR)

b) Write short notes on :

i) DMA. (8)

ii) PCI bus. (8)