

[Total No. of Questions - 9] [Total No. of Printed Pages - 3]
(2064)

14647

B. Tech 4th Semester Examination
Computer Organisation & Architecture (N.S.)
IT-222

Time : 3 Hours

Max. Marks : 100

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Attempt five questions in all selecting one question from each of sections A, B, C and D of questions paper. Section E is compulsory.

SECTION - A

1. (a) Explain Booth Multiplication Algorithm with flow diagram and example? (10)
- (b) Explain Floating point arithmetic operations. (5)

OR

2. (a) Draw the block diagram of a dual 4-to-1 Line multiplexers and explain its operation by means of a function table. (8)
- (b) Explain the functioning of 3×8 Decoder (Block diagram) with two 2×4 decoders with truth table. (7)

SECTION - B

3. (i) Explain major components of CPU in Short? (3)
- (ii) Explain General Register Organization in detail, with example of Micro operations? (12)

14647/70

[P.T.O.]

OR

4. What do you understand by RISC and CISC. Explain with examples of each Mention at least Six characteristics of RISC and CISC. (15)

SECTION - C

5. Explain functioning of DMA in detail with diagram. (15)

OR

6. (i) Explain Cache Memory with characteristics. (2)
(ii) Explain (a) Associative mapping (b) Direct Mapping (c) set Associative mapping in detail. (12)
(iii) Which of these is better and why. (1)

SECTION - D

7. (i) Explain Arithmetic Pipeline for floating point addition or subtraction (10)
(ii) Explain Instruction pipeline (four segment CPU pipeline). (5)

OR

8. (i) Explain Computer Architecture objectives? (2)
(ii) Explain Classification of Computer Architecture with Flynn Taxonomy in detail. (13)

SECTION - E (Compulsory)

9. (i) Explain about the various address Modes.
(ii) Describe structure of Pipeline with example.
(iii) Write a short note on Computer Boot up.

- (iv) Explain Control Unit of basic computer with timing and control functionality.
- (v) Explain Bi-Directional Shift registers with function table.
- (vi) Explain Input output Processor (IOP)
- (vii) Explain basic Computer instruction formats i.e. (Memory-reference instruction, Register Reference instruction, Input Output Instruction).
- (viii) Explain concept of Virtual Memory with diagram.
- (ix) How the different types of hazards that arise in a pipeline can be minimized.
- (x) Write a short note on Communication on "Intel Pentium Architecture". (10×4=40)