

5E5101

Roll No.

5E5101

B. Tech V Sem. (Main/Back) Exam. Nov-Dec. 2015

Computer Science & Engineering

5CS1A Computer Architecture

Common with IT

Time: 3 Hours

http://www.rtuonline.com

Maximum Marks: 80

Min. Passing Marks Main: 26

Min. Passing Marks Back: 24

Instructions to Candidates:

Attempt any five questions, selecting one question from each unit. All questions carry equal marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly.

Units of quantities used/calculated must be stated clearly.

Use of following supporting material is permitted during examination.

1. NIL

2. NIL

UNIT-I

- Q.1 (a) Explain Flynn's classification with suitable examples. [8]
(b) Explain direct and indirect register addressing modes with suitable examples. [8]

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- Q.1 (a) Explain basic design of a simple computer system. [8]
(b) Is there any difference among software, hardware & firmware? Explain. [8]

UNIT-II

- Q.2 (a) Is there any difference between RISC & CISC computers? Explain. [8]
(b) What is the advantage of pipelining? Explain instruction pipeline in detail. [8]

OR

- Q.2 (a) What do you understand by speedup and efficiency? What are bottlenecks? Explain. [8]
- (b) Explain arithmetic pipeline with a suitable example. Draw diagram also. [8]

UNIT-III

- Q.3 (a) Explain array multiplier with a suitable example. [8]
- (b) Explain stack organization of Central Processing Unit. [8]

OR

- Q.3 Multiply and steps of $(-37) \times (21)$ multiplication are to be shown using Booth's multiplier algorithm. [16]

UNIT-IV

- Q.4 Design 4×3 RAM. Also explain basic cell. [16]

OR

- Q.4 What are the 3 different cache memory schemes? Explain in detail with suitable examples. [16]

UNIT-V

- Q.5 Write short notes on -
- (a) IOP [8]
- (b) DMA [8]

OR

- Q.5 Write short notes on
- (a) Priority interrupts [8]
- (b) I/O Interface. [8]
