



GOKARAJU RANGARAJU INSTITUTE OF ENGINEERING AND TECHNOLOGY

[Autonomous]

Department of Computer Science and Engineering

I M.Tech I SEMESTER I MID EXAMINATIONS

COMPUTER SYSTEM DESIGN (Subjective)

Duration: 75 Min

Max Marks: 15 Marks

Code: GR20D5099

Date: 18.03.2021

Answer all the Questions. Each Question carries 5 Marks.

1. a) Demonstrate Von- Neumann Architecture? (CO1)

OR

b) Discuss IA-32 Instruction Format and Construct IA-32 program for dot product of two vectors? (CO1)

2. a) Discuss about Control Sequence for execution of the instruction

ADD (R3), R1 (CO2)

OR

b) Demonstrate Hardwired Control Unit Design? (CO2)

3. a) Design Four Stage-Instruction Pipeline? (CO2)

OR

b) Discuss about Memory Hierarchy? (CO3)

Paper Set by Faculty of CSE



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1. Which of the following is Volatile ? []

a) ROM b) EPROM c) DRAM d) RAM

2.1 Gigabyte(1GB)= _____ bytes []

a) 2¹⁰ b) 2²⁰ c) 2³⁰ d) 2⁴⁰

3. In _____ addressing mode, the instruction contains operand. []

a) Immediate b) Register Indirect c) Direct d) Register direct

4. In IA-32, Which of the following is not shift operation []

a) SHL b) SHR c) SAR d) SOR

5. The number of general purpose registers In IA-32 are _____ []

a) 4 b) 8 c) 6 d) 10

6. _____ register contains the address of instruction to be executed. []

a) IR b) MAR c) MDR d) PC

7. In Multiple bus organization, general purpose registers are combined into a single block called as _____ []

a) register b) register file c) register data d) none

8. In _____ Control signals are generated by program. []

a) Hardwired control b) Micro programmed control c) both d) none

9. Any condition that causes the pipeline to stall is called as _____ []

a) Exception b) Error c) hazard d) overflow

10. Operand forwarding is used in _____ hazards []

a) Instruction b) Data c) Structural d) none

Course Objectives: The Objectives of this course is

1. Understand the components of the computer and its working and also basic concepts of the number system.
2. Understand the concepts of Input-Output interface and its organization.
3. Understand the concepts of memory management, i.e cache, associative and virtual, auxiliary memory and its organization.
4. Understand different approaches to memory management.
5. Learn and understand the security aspects of a UNIX

Course Outcomes:

At the end of the course, the student will be able to

1. Demonstrate IA-32 Pentium processor architecture and Computer I/O operations
2. Compare hardwired control and micro programmed control in the processing unit.
3. Illustrate the management of different type of memories in the computer system
4. Determine the reasons for deadlocks and understand the different types of IPC mechanisms.
5. Compare and analyze different file systems being used in different operating systems