

M. Tech. Computer Science & Engineering (CBCS Pattern) Semester-I
PCSS11 - Advanced Computer Architecture

P. Pages : 1

Time : Three Hours



GUG/S/25/10940

Max. Marks : 70

- Notes :
1. Solve **any five** questions.
 2. All questions carry equal marks.
 3. Due credit will be given to neatness and adequate dimensions.
 4. Assume suitable data wherever necessary.
 5. Illustrate your answers wherever necessary with the help of neat sketches.

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| 1. | a) | Explain the role, structure and impact of compiler on performance of program execution. | 7 |
| | b) | Explain the quantitative principles of computer design. | 7 |
| 2. | a) | How the pipeline is implemented. | 5 |
| | b) | What is dynamic scheduling? How does it help to avoid data Hazards. | 9 |
| 3. | a) | Explain the basic VLTW approach for exploiting ILP, using multiple issues. | 6 |
| | b) | Explain in detail how the pipelining is implemented with reference to a MIPS Processor? | 8 |
| 4. | a) | What is Multi-threading? How do you define thread-level parallelism? How spin locks be implemented using coherence mechanism? | 7 |
| | b) | Differentiate between centralized shared Memory Multiprocessor and Distributed Memory Multiprocessor Systems. | 7 |
| 5. | a) | Write a note on vector super computers. | 6 |
| | b) | Explain Hierarchical Bus System with suitable diagram. | 8 |
| 6. | a) | What are different addressing modes and explain each one with suitable example. Also discuss displacement addressing mode. | 14 |
| 7. | a) | With suitable example, explain blocking and non-blocking networks. | 6 |
| | b) | Discuss hardware based speculations and compare it with software based speculation. | 8 |
| 8. | a) | Write a note on flash memory. | 6 |
| | b) | Discuss multiprocessor Architecture & its issues and approaches. | 8 |
