

**B.Tech. – VIEP – COMPUTER SCIENCE AND
ENGINEERING (BTCSEVI)**

Term-End Examination

June, 2016

00226

BICS-022 : COMPUTER ARCHITECTURE

Time : 3 hours

Maximum Marks : 70

Note : Attempt any *seven* questions. All questions carry equal marks.

1. Convert the following arithmetic expressions from reverse polish notation to infix polish notation : 10
 - (a) $A B C D E + * - /$
 - (b) $A B C D E * / - +$
 - (c) $A B C D E F G + * + * + *$
 - (d) $A B C * / D - E F / +$

2. What are the problems faced by superscalar architecture ? How are these problems removed in VLIW architecture ? 10

3. Explain computer classification based on the following : 10
- (a) SISD
 - (b) SIMD
 - (c) MISD
 - (d) MIMD
4. (a) Why is it important to differentiate between the peak bandwidth of a memory system and the actual bandwidth achieved during program execution ? 5
- (b) Discuss the various types of pipelining hazards. 5
5. (a) Describe in words and by a block diagram, how multiple matched words can be read out from an associative memory. 5
- (b) Describe static scheduling with an example. 5
6. (a) Discuss the difference between tightly coupled multiprocessors and loosely coupled multiprocessors. 5
- (b) List the various memory issues in multicore processor based systems. 5

7. (a) What is mapping ? Name the various types of mapping. Discuss direct mapping in brief. 5
- (b) Write a short note on memory hierarchy. 5
8. Discuss the problems faced by superscalar 10 architecture. 10
9. What is Virtual Memory ? Discuss the protection of a segmented virtual memory in the Pentium. 10
10. Explain any *two* of the following : $2 \times 5 = 10$
- (a) Multithreading
- (b) RISC and CISC
- (c) Multicore Architecture
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