PG Odd Semester (CBCS) Exam., December—2016

COMPUTER SCIENCE

(9th Semester)

Course No. : CS–901 (O)

(Advanced Computer Architecture)

Full Marks : 75
Pass Marks : 26

Time : 3 hours

The figures in the margin indicate full marks for the questions

Answer **five** questions, selecting **one** from each Unit

UNIT—I

1. *(a)* Draw and explain the space-time diagrams for a pipeline and a non-pipelined processor. 9

(b) What is an instruction cycle? What is a pipeline cycle? How are they related? 6

2. Explain the following with diagrams : 5×3=15

(a) Array processors

(b) Multiprocessor systems

(c) Pipeline computers

UNIT—II

3. Draw and explain the architectures of STAR-100 and TI-ASC. 7+8=15

4. Explain the following : 3×5=15

(a) Clock period

(b) Speedup

(c) Efficiency

(d) Throughput

(e) Handler's classification

UNIT—III

5. Compare the concepts of LCS and TCS with diagrams. 7+8=15

6. Explain the cm architecture in detail with proper diagram. 15

UNIT—IV

7. Explain the different types of multi-processor O/S. 15

8. *(a)* Explain how static coherence check is helpful. 5

(b) How is the problem of cache coherence solved with home memory? 6

(c) Explain *(i)* mutual exclusion and *(ii)* circular wait. 2+2=4

UNIT—V

9. Explain two types of dataflow computers with diagrams. What are the advantages of dataflow computers? 5+5+5=15

10. *(a)* What are the differences between RISC and CISC? 6

(b) Draw an example architecture of RISC and explain it. 9

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