



KLE DR. M. S. SHESHGIRI COLLEGE OF ENGINEERING AND TECHNOLOGY,
BELAGAVI
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
INTERNAL ASSESSMENT TEST – 1 (CBCS FORMAT)



Code: 15CS72
Date: 19-9-19

Subject: Advanced Computer Architecture
Duration: 75 minutes

Semester: VII Max. Marks: 30
Staff: Dr. V.S. Mallemath / Geeta N

NOTE: Answer 3 full Questions (Question no 1 is compulsory).

- Q 1 a. List and briefly explain the system attributes that affect the performance factors of a Computing System.
b. A 600 MHz processor is used to execute a benchmark program with the following instruction mix and clock cycle counts: 6 mks.

Instruction type	Instruction count	Clock cycle count
Integer Arithmetic	550000	1
Data transfer	300000	2
Floating Point	100000	2
Control Transfer	80000	2

Determine the effective CPI, MIPS rate, and execution time for this program. 4 mks.

- Q 2 a. With neat block diagrams, explain the Flynn's classification of Computer Architecture. 6 mks.
b. What are the conditions of parallelism? 4 mks.

Q 3. Explain the different types of Data dependence with an example for each. 10 mks.

- Q 4. a. What are the metrics affecting scalability of a computer system? 6 mks.
b. What are the important characteristics of parallel algorithms? 4 mks.



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INTERNAL ASSESSMENT TEST – 2 (CBCS FORMAT)



Code: 15CS72 Subject: Advanced Computer Architecture Semester: VII Max. Marks: 30
Date: 24-10-19 Duration: 75 minutes Staff: Dr. V.S. Mallemath / Geeta N

NOTE: Answer 3 full Questions (Question no 1 is compulsory).

Q. No.	QUESTIONS	MARKS
1.	List out the characteristics of a typical RISC and CISC architecture and bring out the architectural distinctions.	5 + 5
	a. With a neat sketch, explain the hierarchical memory technology.	5
2.	b. What a neat sketch explain the inclusion property and data transfer between adjacent levels of memory hierarchy.	5
3.	What is arbitration? Explain Central and Distributed arbitration schemes	2 + 8
4.	Explain the Direct mapping cache organization with an example of modulo 4 mapping.	10

Internal Assessment 3

Subject: Advanced Computer Architecture (15CS72)

Sem: VII Sem.

NOTE: Answer 3 full Questions with Question no 1 compulsory

1. a. Compare sequential and weak consistency models. ----- 5 marks
b. State the conditions required to maintain Sequential Consistency. ----- 5 marks
2. a. Differentiate Linear Pipeline processors from Nonlinear Pipeline processors. ----- 5 marks
b. With respect to Instruction pipelining, explain internal data forwarding, pre-fetch buffer and possible hazards between read and write operations. ----- 5 marks
3. a. Explain cache coherence problem. ----- 5 marks
b. Explain Snoopy bus protocols. ----- 5 marks
4. a. With a neat diagram explain Tomasulo's algorithm & give advantages of the approach- 5 marks
b. Explain directory-based protocols in brief. ----- 5 marks