

(Pages : 3)

H – 3410

Reg. No. :

Name :

Eighth Semester B.Tech. Degree Examination, November 2019

(2008 Scheme)

08.802 : COMPUTER SYSTEM ARCHITECTURE (R)

Time : 3 Hours

Max. Marks : 100

PART – A

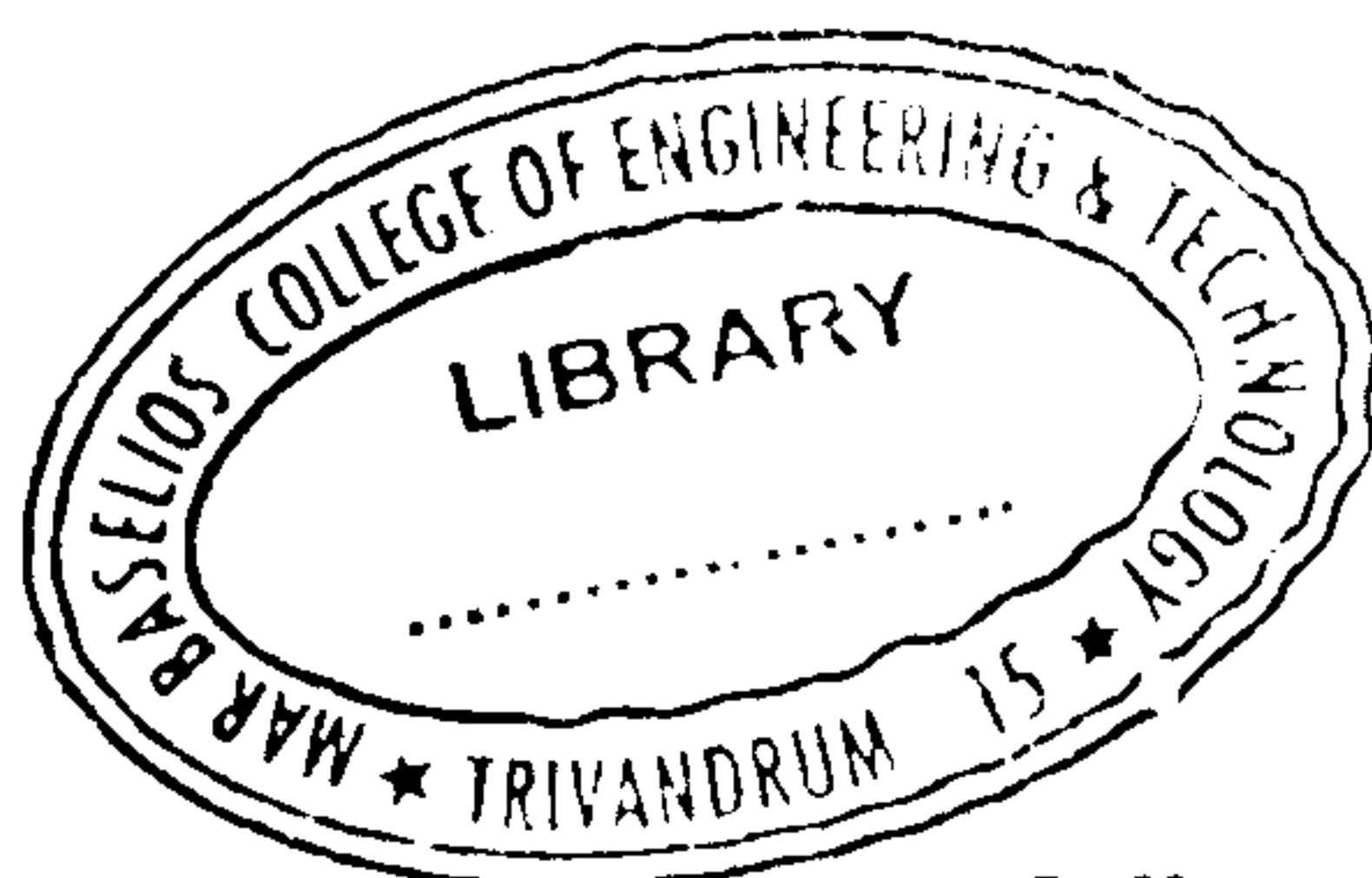
Answer **all** questions :

1. Define CPU time and CPI List the factors contributing to measure CPU time.
2. Differentiate implicit and explicit parallelism.
3. Compare the features of NUMA and COMA models.
4. What are the features of parallel random access machines?
5. What is TPS and KLIPS rating?
6. What is random parallelism? How is it exploited in VLWI computers?
7. What is a backplane bus? What is its use?
8. What is the need for cache coherence mechanisms?
9. What is scoreboarding? How this technique improves pipeline performance?
10. What are hot spots? How they degrade system performance?

(10 × 4 = 40 Marks)

P.T.O.





PART – B

Answer **any one full** questions from **each** Module. Each question carry **20** marks

Module – I

11. (a) Explain the generic model of a message passing multiprocessor. **8**
- (b) Discuss about the Bell's Taxonomy of MIMD computers. **12**

OR

12. (a) Explain how dependency graph analysis contributes to identify the relation between parallelism and various dependences. **12**
- (b) Identify and explain the dependences in the following code segment. **8**
- S1: LOAD R1,A
S2: ADD R2,R1
S3: MOVE R1,R3
S4: STORE B,R1

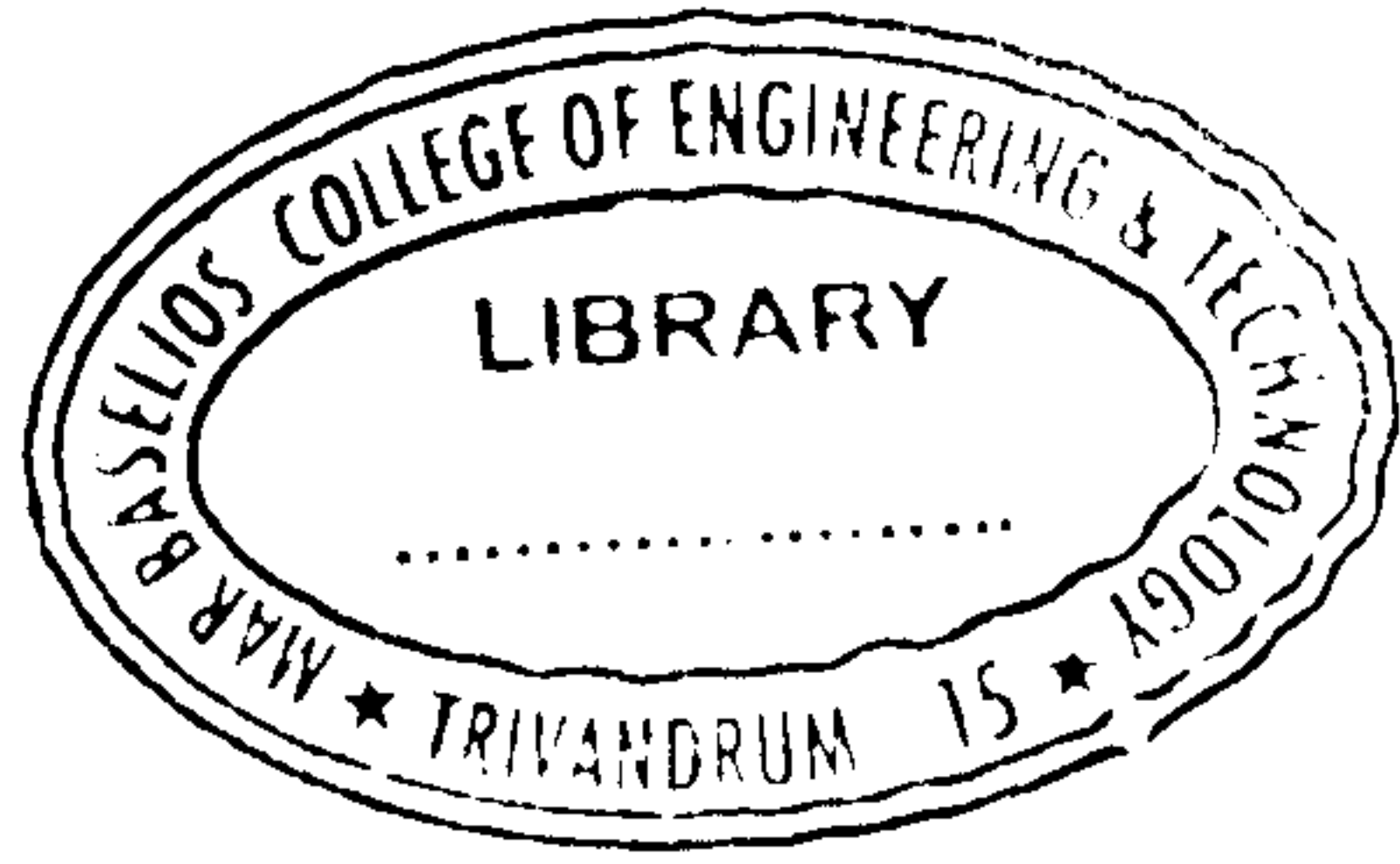
Module – II

13. (a) Explain the concept of overlapping register windows in SPARC superscalar machines. **8**
- (b) Explain the working of asynchronous and synchronous bus timing protocols. **12**

OR

14. (a) Discuss about the multiway interleaving memory organizations with a neat sketch. **8**
- (b) Explain the weak and sequential consistency models of shared memory systems. **12**





Module – III

15. (a) What are the advantages of using vector processors? Discuss briefly about the vector processing principles. **8**
- (b) Discuss briefly about multi-vector multi processing. **12**

OR

16. (a) Explain the implementation models of SIMD computers. **10**
- (b) Discuss briefly about scalability issues of SVM architectures. **10**

(3 × 20 = 60 Marks)

