Code No.: CS8202PC | R20 | H.T.No. | | | 8 | R | | | | | | |

CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS
I–M.TECH–II–Semester End Examinations (Supply) - March- 2023
ADVANCED COMPUTER ARCHITECTURE
(CSE)

[Time: 3 Hours] **[Max. Marks: 60]**

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 20 marks. Answer all questions in Part A.
Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART-A **(20 Marks)**

1. a) What are the important factors to be considered when scheduling the program? [2M]
   b) Differentiate multicomputer and multiprocessor. [2M]
   c) What is a vector processor? [2M]
   d) What is scalability in the context of computer systems? [2M]
   e) What are some common types of backplane bus systems? [2M]
   f) What is a shared memory? [2M]
   g) What is cache coherence? [2M]
   h) What are the key characteristics of first-generation multicomputers? [2M]
   i) Explain any two limitations of data flow architectures? [2M]
   j) Give examples of hybrid architectures. [2M]

PART-B **(50 Marks)**

2. What is parallelism in computer architecture? What are the conditions of parallelism? [10M]

OR

3. What is the VLSI model and explain its key features? [10M]

4. How would you evaluate the performance of a parallel processing system for a particular application, and what metrics would you use? [10M]

OR

5. Explain the difference between RAM and cache memory, and how they are used in modern computer systems. [10M]

6. Explain the operation of associative cache memories. [10M]

OR

7. What are the key components of an arithmetic pipeline, and how do they work together? [10M]

8. List and explain different interconnection structures used in multiprocessors. [10M]

OR

9. Explain about SIMD computer organization and message passing mechanism. [10M]

10. Compare and contrast different types of scalable architectures. [10M]

OR

11. What is multithreading? Explain the principles of multithreading. [5M]
    List out the key features of fine grain multi computing? [5M]

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