# 322741(22)

APR-MAY2022

## B. E. (Seventh Semester) Examination, ~~2020~~

### (New Scheme)

### (CSE & IT Engg.)

## ADVANCED COMPUTER ARCHITECTURE

*Time Allowed : Three hours*

*Maximum Marks : 80*

*Minimum Pass Marks : 28*

*Note : Attempt all the questions. Part (a) from each question is compulsory. Attempt any **two** parts from parts (b), (c) and (d) of each question.*

### Unit-I

1. (a) Draw the seven-stage instruction pipeline.        2

   (b) Why is used Tomasula's Algorithm, explain it.        7

(c) What is hazard in the pipeline? Explain hazard avoidance methods in brief. 7

(d) Write a note on VLIW Architecture. 7

## Unit-II

2. (a) What is you mean IEEE standard? 2

(b) Explain the physical and virtual address caches? 7

(c) Where is use page-replacement policy? Explain any two policies in detail. 7

(d) What is memory interleaving? Explain low-order m-way interleaving. 7

## Unit-III

3. (a) Write the Bernstein's conditions for parallelism. 2

(b) What is system performance? Explain its attributes in details. 7

(c) What are data dependencies? Explain different types of dependencies with suitable example. 7

(d) Explain demand-driven mechanism in detail. 7

## Unit-IV

4. (a) Write different between CISC and RISC processors. 2

(b) Explain SIMD computer organisations. 7

(c) Explain different types of vector access memory schemes, which is better and why? 7

(d) Explain vector instructions types in brief. 7

## Unit-V

5. (a) What is network performance? How to improve it? 2

(b) What is static connection network? Explain any two types in brief. 7

(c) Explain the hot-spot problem in the network? 7

(d) What is dynamic connection network? Explain any two types in brief. 7