

S.No. 26

17PCS02

(For the candidates admitted from 2017 – 2018 onwards)

M.Sc. DEGREE EXAMINATION, APRIL/MAY 2018.

First Semester

Computer Science

ADVANCED COMPUTER ARCHITECTURE

Time : Three hours

Maximum : 75 marks

PART A — (5 × 5 = 25 marks)

Answer ALL questions.

1. (a) What is parallel processing? Explain the challenging levels of parallel processing.

Or

- (b) Compare and contrast parallel and distributed processing.

2. (a) Write a short note on synchronous pipeline model.

Or

- (b) Explain the fixed-point and floating-point arithmetic operations with examples.

3. (a) Write a brief note on SIMD computer organization.

Or

(b) Explain the single stage and multistage dynamic networks.

4. (a) Explain the use of cross point switches in a cross bar network.

Or

(b) Explain the concept of virtual channel.

5. (a) Explain the software requirements for multiprocessors.

Or

(b) Write a note on conditional critical section.

PART B — (5 × 10 = 50 marks)

Answer ALL questions.

6. (a) What is parallel computer? Explain the three types of parallel computer structures.

Or

(b) Discuss the parallel processing mechanisms in uniprocessor computers.

7. (a) Explain the mechanism for instruction pipelining.

Or

(b) Discuss the reservation and latency analysis on dynamic pipeline.

8. (a) Explain the associative memory organization in SIMD computers.

Or

(b) Describe the Mesh-connected Illiac network for SIMD machines.

9. (a) Explain the multicast routing algorithms.

Or

(b) Describe the directory based protocols for network-connected multiprocessors.

10. (a) Explain the classifications of a multiprocessor operating system.

Or

(b) Describe the monitor representation for shared data with multiple concurrent processes.