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Total No. of Questions : 09] [Total No. of Pages : 02

Paper ID [A0518]

(Please fill this Paper ID in OMR Sheet)

B.Tech. (Sem. - 5th)

PARALLEL ARCHITECTURE AND COMPUTING (IT - 309)

Time : 03 Hours **Maximum Marks : 60**

Instruction to Candidates:

1) Section - A is **Compulsory**.
2) Attempt any **Four** questions from Section - B.
3) Attempt any **Two** questions from Section - C.

Section - A

Q1) *(10 × 2 = 20)*

a) Explain Hndler's classification for parallel computers briefly.

b) Why pipelining helps in improving the throughput of the system?

c) What are Array Processors?

d) What do you mean by load balancing in multi-processor systems?

e) Define Cost optimal algorithm.

f) What are control hazards in parallel processors?

g) What steps you would require to be considered for the simulation of an array processor?

h) What is parallel prefix computing?

i) How can you design a system architecture which leads to higher speed and minimal silicon area.

j) Briefly describe the difference between SIMD and MIMD?

Section - B

(4 × 5 = 20)

Q2) Discuss the various methods for data routing through networks.

Q3) Describe the Brent's theorem with suitable examples.

Q4) Describe how the optimum scheduling is achieved in multi processor systems.

Q5) Explain the load balancing in multi processor systems.

Q6) Describe the various interconnection networks in array processors.

Section - C

(2 × 10 = 20)

Q7) What are SIMD and MIMD processor systems? Explain the design issues involved in their architectures.

Q8) Describe the NC of parallel algorithms. Explain with the help of suitable examples.

Q9) Write short notes on the following :

(a) Scheduling in multiprocessor systems.

(b) Instruction pipelining.

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