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

B.Tech. (Sem. - 5th)

PARALLEL ARCHITECTURE AND COMPUTING

SUBJECT CODE : IT - 309

Paper ID : [A0518]

[Note : Please fill subject code and paper ID on OMR]

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) What are control hazards?

b) What is the difference between multiprocessor and multicomputer architecture of parallel computers?

c) What are different ways of exploiting parallelism in parallel computer architecture?

d) Discuss the four memory update options in PRAM model.

e) What are dynamic connection networks?

f) Discuss the advantages of vector processor.

g) Discuss the difference between SIMD and MIMD processors.

h) What is Hndler's classification of parallel computers?

i) What are non uniform access multiprocessors?

j) What do you mean by parallel merge?

Section - B

(4 × 5 = 20)

Q2) Explain load balancing in multiprocessor systems.

Q3) Discuss various PRAM models and their relative powers.

Q4) What are different components of MIMD architecture? How it is different from SIMD architecture?

Q5) Describe the Brent's theorem with suitable examples.

Q6) What is the difference between uniform and non uniform memory access multiprocessors?

Section - C

(2 × 10 = 20)

Q7) Explain different parallel algorithms for SIMD architectures?

Q8) Discuss any cost optimal algorithm or parallel merge algorithm.

Q9) Write short notes on the following :

(a) Parallel List ranking.

(b) Flynn's Classification of Parallel computers.

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