M. Tech. –II (Computer Engineering) (CBCS – 2015 Course) :
SUMMER - 2019
SUBJECT: HIGH PERFORMANCE COMPUTING

Day : Monday
Date : 03/06/2019

S-2019-3401

Time: 11.00 AM TO 02.00 PM
Max. Marks: 60

N.B.

1) All questions are **COMPULSORY**.
2) Figures to the **RIGHT** indicate **FULL** marks.
3) Answer to both the sections should be written in **SAME** Answer book.

SECTION – I

Q.1 **a)** What is the role of system calls in user's view of operating system? **(05)**
b) Explain the various fields in process control block. **(05)**

OR

a) How programming strategies are influenced by pipeline hazards.
b) Explain the necessity of program profiling.

Q.2 **a)** Demand driven computing can handle bursty loads in client-server architecture. Justify. **(05)**
b) Explain SIMD architecture for parallel processing. **(05)**

OR

a) What are the challenges in compilation of a parallel program?
b) Explain the various data representation techniques used by compiler in code representation.

Q.3 Divide and conquer algorithms are easy for parallelization. Justify with an example. **(10)**

OR

Write a parallel algorithm for matrix addition using threads?

SECTION - II

Q.4 How global address space is handled among the parallel programs in massively parallel programming? **(10)**

OR

Explain the measures used for synchronization of parallel programs while accessing the shared resource?

Q.5 Explain superscalar computing architecture in detail? **(10)**

OR

How combined architecture of ASICs and multi-core processors help in neural network processing?

Q.6 How CASE tools are useful in identifying bottleneck components in a multiprocessor system? **(10)**

OR

What are the measures used for benchmarking a parallel processing application?

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