HPC - Term End Exam (A.Y. 2020-21-Sem-I)

* Required

Q1 to Q5

1. The parallel runtime of a program depends on * 2 points

Mark only one oval.

- the input size
- the number of processors
- the communication parameters of the machine
- all of the above

2. Speedup (S) is equal to * 2 points

Mark only one oval.

- Ts/ Tp
- Ts * Tp
- Ts + Tp
- Ts - Tp

3. Efficiency is equal * 2 points

Mark only one oval.

- S / p
- S * P
- S + p
- S - p

4. Scaling down of the parallel system means * 2 points

Mark only one oval.

- ◯ Using larger than the actual number of processing elements to execute a parallel algorithm
- ◯ Always use the maximum possible number of processing elements to execute a parallel algorithm
- ◯ Using fewer than the maximum possible number of processing elements to execute a parallel algorithm
- ◯ Use the exact same number of processing elements to execute a parallel algorithm

5. cost-optimal parallel systems have an efficiency of * 2 points

Mark only one oval.

- ◯ Θ(n *n).
- ◯ Θ(n).
- ◯ Θ(0).
- ◯ Θ(1).

Q6 to Q10

6. For a given problem size, as we increase the number of processing elements, the overall _____of the parallel system goes down for all systems. * 2 points

Mark only one oval.

- ◯ Speed
- ◯ Cost
- ◯ Efficiency
- ◯ Total overhead

7. In compare-split operation, each process sends its block of size _____ to the other process * 2 points

Mark only one oval.

- n
- n/p
- n * p
- n + p

8. Luby's MIS Algorithm executes in * 2 points

Mark only one oval.

- 1 phase
- 2 phases
- 3 phases
- 4 phases

9. Sparse algorithms use * 2 points

Mark only one oval.

- adjacency matrix
- adjacency list
- both A & B
- None of the above

10. mykernel<<<1,1>>>(); call from * 2 points

Mark only one oval.

- host code to device code
- host code to host code
- device code to device code
- device code to host code

Q11 to Q15

11. CUDA API for handling device memory * 2 points

Mark only one oval.

- cudaMalloc()
- cudaFree()
- cudaMemcpy()
- all of the above

12. add<<<N,1>>>(d_a, d_b, d_c); where N indicates * 2 points

Mark only one oval.

- Number of threads
- Number of blocks
- Number of grids
- Number of GPU

13. A processor, assigned with a thread block, that executes a code, which we usually call a * 2 points

Mark only one oval.

- Multithreaded DIMS Processor
- Multithreaded SIMD Processor
- Multithreaded queue
- Multithreaded Stack

14. A code, known as Grid, which runs on a GPU consisting of a set of * 2 points

Mark only one oval.

- 32 Thread
- Unit block
- 32 Block
- Thread Block

15. How many different kinds of memories are in a GPU ? * 2 points

Mark only one oval.

- 1
- 2
- 3
- 4