

State University of Bangladesh
Department of Computer Science and Engineering
Midterm Exam Summer-2021
CSE-0409 Parallel Processing and Distributed System

Time: 1.5 Hour + 15 minutes for submission

Full Marks: 30

Submit Before: 02.45 PM (17-08-2021)
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Email Subject: Student ID_CSE-0409_Mid-Summer-2021
Email attachment: PDF only (Only one PDF file)
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Answer all the following questions

1.
 - a) Briefly **explain** Flynn's hardware taxonomy of processor organization in case of parallel computing. 4
 - b) **Analyze** taxonomy of parallel computing paradigm with proper explanation. 4
 - c) **Draw** the SIMD architecture of parallel computing. 2

2.
 - a) How can you **use** parallel processing in numeric weather prediction and genetic engineering applications? 3
 - b) **Explain** why multi core processor is beneficial over multi-processor. 3
 - c) **Apply** instruction level parallelism and simultaneous multi-threading (SMT) in a processor and explain the circumstances of using both of them simultaneously in a processor? 4

3.
 - a) **What** are the basic ideas of pipelined processing and show the mechanism of data dependency in it. 2
 - b) How does a single physical CPU core with hyper-threading appear as two logical CPUs to an operating system briefly **explain** this phenomenon? 4
 - c) **Analyze** the memory hierarchy of a fish machine with diagram in the context of using multi-core and simultaneous multi-threading (SMT). 4