

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
ME – SEMESTER – III (New) • EXAMINATION – WINTER - 2020

Subject Code: 3730210

Date:02/01/2021

Subject Name: Compiler for HPC

Time: 10:30 AM TO 12:30 PM

Total Marks: 56

Instructions:

- 1. Attempt any FOUR questions out of EIGHT questions.**
- 2. Make suitable assumptions wherever necessary.**
- 3. Figures to the right indicate full marks.**

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|-----|-----|---|-----------|
| Q.1 | (a) | Explain structure of compiler for high performance systems. | 07 |
| | (b) | Describe Data Dependency in loop with Example | 07 |
| Q.2 | (a) | Describe Data Dependence in Conditions with Example. | 07 |
| | (b) | Explain Procedure call Transformation with Diagram | 07 |
| Q.3 | (a) | Explain Loop Transformation with Method in Detail. | 07 |
| | (a) | Explain Cache Coherence in Multiprocessor. | 07 |
| Q.4 | (a) | Describe Latency Tolerance Machine in Details. | 07 |
| | (b) | Explain Round OFF Error with Example | 07 |
| Q.5 | (a) | Explain Nested loop in HPC Compiler with example. | 07 |
| | (b) | Write short note on Multi-Vector Computers. | 07 |
| Q.6 | (a) | Describe FUD chain for array with example. | 07 |
| | (b) | Explain Data dependence in parallel loop with example. | 07 |
| Q.7 | (a) | Write a short note on Inter-procedural Transformation. | 07 |
| | (b) | Explain Fission and Fusion for Locality in details. | 07 |
| Q.8 | (a) | Describe Exception and Debugger in detail. | 07 |
| | (b) | Write a different data layout in Message-Passing Machine. | 07 |