

Seat No. **MAR_APR 2025 SUMMER EXAMINATION****11731 Bachelor of Technology (NEP-2.0)****Sub. Name: High Performance Computing****Sub. Code: 56534/109803****Day and Date: MAY ,23-05-2025****Total Marks: 70****Time: 10:30 AM To 01:00 PM**

Instructions: 1. Assume suitable data wherever necessary and mention it boldly
 2. Draw neat labelled diagrams wherever necessary
 3. Figures to the right indicate full marks

Special Inst.: Solve any four questions from Q. No. 1 to Q. No. 5
 Question no. 6 is compulsory

- Q1)** Answer the following question [15]
- a. Explain Cluster Computing Architecture [8]
- b. What is the need for pipelining and Scheduling [7]
- Q2)** Answer the following question [15]
- a. Explain the Xpress Transport Protocol in detail [8]
- b. What does Resource Management do in Clustering? Explain in detail [7]
- Q3)** Answer the following question [15]
- a. What is the impact on programming of pipelining [8]
- b. Draw and explain CUDA architecture [7]
- Q4)** Answer the following question [15]
- a. Explain memory management in CUDA [8]
- b. what is use Cache Memory explain in detail [7]
- Q5)** Answer the following question [15]
- a. What is the need for load balancing over networks? explain in detail [8]
- b. Explain data hazards and control hazards [7]
- Q6)** Write a short note on: **(Any 2)** [10]
- a. Mission Critical Vs Business Critical Applications [5]

- b.** Parallel programming in CUDA-C [5]
- c.** Check pointing and Heartbeats [5]

End Of Question Paper

Important Note for Chief Exam Officer / SRPD Coordinator / Sr Supervisor/ Student -

This Question Paper may be distributed for following Subjects as common code.

सदरची प्रश्नपत्रिका खालील विषयांकरिता वितरित करता येईल.

- 1] (1154) B.Tech. CBCS (56534) High Performance Computing Part 4 SEM 8