

**M. TECH. –II (COMPUTER ENGINEERING) (C̄B̄C̄S – 2015  
COURSE) : WINTER - 2017**

**SUBJECT: HIGH PERFORMANCE COMPUTING**

Day: **Monday**  
Date: **27/11/2017**

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

**W-2017-2804**

N.B.:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate full marks.
- 3) Assume suitable data wherever necessary.

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**Q.1** What is hazards? What are the different types of hazards? Explain in detail. [10]

**OR**

What is operating system? What is the necessity of system calls in a system? Explain. [10]

**Q.2** Discuss in detail architecture of Cluster Computing Network. [10]

**OR**

Explain in detail the concept of parallel processing. [10]

**OR**

**Q.3** Discuss in detail the ideal and real frameworks of parallel models. [10]

**OR**

Explain in detail Monte-Carlo techniques with suitable example. [10]

**SECTION-II**

**Q.4** What are the parallel primitives used in parallel programming? Explain in detail. [10]

**OR**

Discuss in detail the synchronization methods used in parallel programming. [10]

**Q.5** Explain in detail the memory hierarchies used in high performance computing. [10]

**OR**

Discuss Homogeneous and Heterogeneous high-end computer systems. [10]

**Q.6** Discuss the term performance metrics and measurements of a HPC system [10]

**OR**

How will you partition applications for heterogeneous resources to achieve performance? Explain. [10]

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