USN ☐☐☐☐☐☐☐☐☐☐

08SCS14

First Semester M.Tech. Degree Examination, Dec.09/Jan.10

Computer Systems Performance Analysis

Time: 3 hrs.

Max. Marks:100

Note: *Answer any FIVE full questions.*

1 a. Bring out the steps followed in a systematic approach to performance evaluation. **(10 Marks)**
   b. Explain the different types of tests workloads used to compare computer systems. **(10 Marks)**

2 a. State and explain the criteria for selecting an evaluation technique. **(05 Marks)**
   b. Define the commonly used performance metrics. **(05 Marks)**
   c. Write short notes on the four major considerations in selecting the workload. **(10 Marks)**

3 a. Briefly explain any three techniques used for workload characterization. **(10 Marks)**
   b. Distinguish between hardware monitors and software monitors. **(10 Marks)**

4 a. With the help of a block diagram,
      i)   Explain the layered view of a distributed system monitor. **(04 Marks)**
      ii) Steps in capacity planning process. **(03 Marks)**
      iii) Accounting logs. **(03 Marks)**
   b. Bring out the design issues to be addressed while designing a program execution monitor.
      (10 Marks)

5 a. What is Remote Terminal Emulation (RTE)? Explain the components of an RTE, with a neat diagram. **(10 Marks)**
   b. Explain the types of experimental designs. **(10 Marks)**

6 a. What is Little's law? Explain the different stochastic processes. **(10 Marks)**
   b. Write short notes on M/M/m queue used to model multiprocessor system. **(10 Marks)**

7 Explain : i)   Hierarchical decomposition
            ii) Balanced job bounds
            iii) Convolution algorithm for computing G(N).
            iv) Utilization law. **(20 Marks)**

8 a. What are 2^K factorial designs and general 2^K factorial designs? **(10 Marks)**
   b. State the common mistakes in Benchmarking. **(10 Marks)**