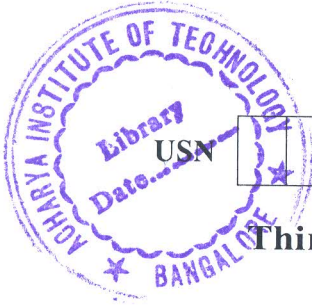


CBCS SCHEME



18SCN321

Third Semester M.Tech. Degree Examination, Dec.2019/Jan.2020 Computer System Performance Analysis

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. List and explain any 10 common mistakes in performance evaluation. (10 Marks)
- b. Explain all the steps to avoid common mistakes in performance evaluation. (10 Marks)

OR

- 2 a. What are the different techniques for performance evaluation? Explain the considerations that help decide the techniques to be used. (10 Marks)
- b. What are the commonly used performance metrics? Explain in detail. (10 Marks)

Module-2

- 3 a. Explain briefly the following Benchmarks:
i) Sieve ii) Ackermann's function. (08 Marks)
- b. Explain the following considerations in selecting workload:
i) Level of detail
ii) Representativeness
iii) Timeliness. (12 Marks)

OR

- 4 a. Explain single parameter and multiparameter histograms. (10 Marks)
- b. What are the steps involved in clustering? Explain the Minimum spanning tree method. (10 Marks)

Module-3

- 5 a. What are Monitors? Explain briefly the issues in software monitor design. (10 Marks)
- b. Give the comparison of hardware and software monitors. (10 Marks)

OR

- 6 a. Explain distributed system monitors. (10 Marks)
- b. What are program execution monitors? Briefly explain the issues in designing program execution monitors. (10 Marks)

Module-4

- 7 a. With a block diagram, explain the steps in capacity planning. (06 Marks)
- b. Explain the various problems in capacity planning. (08 Marks)
- c. What are the common mistakes in experimentation? (06 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

OR

- 8 a. Explain briefly the three frequently used experimental designs. (10 Marks)
 b. Analyze the 2^3 factorial design in the following table:

	A ₁		A ₂	
	C ₁	C ₂	C ₁	C ₂
B ₁	100	15	120	10
B ₂	40	30	20	50

- i) Quantity main effects of all interactions
 ii) Quantity percentages of variation explained. (10 Marks)

Module-5

- 9 a. State and prove Little's Law. (10 Marks)
 b. On a network gateway, measurements show that the packets arrive at a mean rate of 125 packets per second and the gateway takes about 2 milliseconds to forward them. Using an M/M/1 model, analyze the gateway. What is the probability of buffer overflow if the gateway had only 13 buffers? How many buffers do we need to keep packet loss below one packet per million? (05 Marks)
 c. What is queuing network? Explain open and closed queuing networks. (05 Marks)

OR

- 10 a. Write a short note on queuing network models of computer systems. (06 Marks)
 b. State the following operational laws:
 i) Utilization law
 ii) Forced flow law
 iii) General response time law
 iv) Interactive response time law. (08 Marks)
 c. Explain the steps involved in Chandy-Herzog-woo decomposition method. (06 Marks)
