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MCA DEGREE V SEMESTER EXAMINATION DECEMBER 2014

CAS 2502 SIMULATION AND MODELLING
(Regular & Supplementary)

Time: 3 Hours

Maximum Marks: 50

PART A
(Answer *ALL* questions)

(15 x 2=30)

- I. (a) What is meant by simulation?
(b) What is meant by the state of a system? Explain with an example.
(c) Explain the simulation of queuing systems?
- II. (a) What is a discrete random variable?
(b) Explain Bernoulli trials and Bernoulli distribution?
(c) What are the features of simlib simulation software?
- III. (a) What is the use of uniform distribution?
(b) Explain poker test for random numbers?
(c) What is weibull distribution?
- IV. (a) What are queuing models? What are its applications?
(b) What are the different classifications under continuous distribution?
(c) Explain discrete random variables, with the help of an example.
- V. (a) What are the different methods in selecting the statistical distribution?
(b) What is validation process? What are the steps in validation process?
(c) What is the use of Chi-square test?

PART B

(5 x 4 = 20)

- VI. Explain the advantages and disadvantages of simulation.
OR
- VII. Explain Monte-carlo simulation method with an example.
- VIII. Compare simulation packages with programming languages?
OR
- IX. Explain the concepts in discrete event simulation.
- X. Explain in detail the features of queuing systems.
OR
- XI. Explain different statistical models?
- XII. Explain any three steps in the development of a useful model of input data?
OR
- XIII. What are the different techniques for generating random numbers? Explain any two techniques.
- XIV. Explain the verification and validation of simulation models.
OR
- XV. Explain different types of simulation with respect to output analysis for terminating simulations?