Answer any 2 questions from each module

**MODULE 1**

1. (a) Explain the two approaches of pseudo random number? (5)
   (b) Define random numbers and list out its properties? (5)

2. Explain the different statistical tests for pseudo random generators? (10)

3. (a) Briefly explain the Congruential method and LFG method? (5)
    (b) Discuss about composite generators and its advantages? (5)

**MODULE 2**

4. Explain the different techniques to generate random variates? (10)

5. Explain the queuing theory concepts and characteristics of queuing systems? (10)

6. Give a brief description about
   
   (a) Measures of performance of queuing systems (5)
   (b) Steady state behaviour of Markovian models (5)

**MODULE 3**

7. Draw a flow chart to model vehicle arrival pattern at an uncontrolled intersection and explain its working. (10)

8. Explain the analytical solution of simulating a single server queueing system under steady state conditions. (10)

9. Write short notes on:
    
    (a) Cellar automated constants. (5)
    (b) A typical problem of a queueing system in traffic engineering. (5)