

U.G. 4th Semester Examination - 2021**STATISTICS****[PROGRAMME]****Skill Enhancement Course (SEC)****Course Code : STAT-G-SEC-T-1B****(Monte Carlo Method)**

Full Marks : 20

Time : 1 Hour

*The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their own words as far as practicable.**Notations and symbols have their usual meaning.*

1. Answer any **two** questions: 5×2=10
- a) Describe importance sampling with an illustration.
 - b) Illustrate how you can find an approximate area of an uneven 2D shape using Monte Carlo method.
 - c) What is Markov chain? What do you mean by burn in period of a Markov chain?
 - d) Write a short note on Monte Carlo error.

2. Answer any **one** question: 10×1=10
- a) Suppose X follows standard normal distribution, Describe a suitable method of finding $P[x > 4]$.
 - b) Narrate a suitable method of drawing random sample from a given continuous distribution. How do you ensure that the obtained sample is actually from that distribution?

[Internal Assessment : 5]
