

**LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034**



**M.Sc. DEGREE EXAMINATION – DATA SCIENCE**

**FOURTH SEMESTER – APRIL 2022**

**PDS 4601 – REINFORCEMENT LEARNING**

Date: 15-06-2022

Dept. No.

Max. : 100 Marks

Time: 01:00 PM - 04:00 PM

**PART – A**

**Q. No** **Answer ALL questions** **(10 x 2 = 20 Marks)**

- 1 List out the limitations of Monte Carlo Method.
- 2 Define Rollout Policy.
- 3 What is Temporal Difference Learning?
- 4 Define Afterstates.
- 5 State the term Eligibility Traces.
- 6 Define Watkins's  $Q(\lambda)$ .
- 7 List out the Model Free Reinforcement Learning algorithms.
- 8 What is Fitted Iteration Algorithm?
- 9 What are the two types of non-associative learning?
- 10 State the term A3C.

**PART – B**

**Answer ALL questions** **(5 x 8 = 40 Marks)**

- 11 (a) Explain the concept of importance sampling in off-policy prediction.  
or  
(b) Describe the perception on rollout algorithms in detail with an example
- 12 (a) Explain the SARSA – On Policy Temporal Difference Learning method with backup diagram  
or  
(b) Describe the idea on Maximization of Bias and Double Learning in detail.
- 13 (a) Explain the concept of n-step TD prediction method with backup diagram.  
or  
(b) Describe the concept of TD ( $\lambda$ ) method with backup diagram.

