



PRESIDENCY UNIVERSITY

BENGALURU

Roll No.														
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Mid - Term Examinations – October 2025

Date: 08-10-2025

Time: 09.30am to 11.00am

School: SOIS	Program: BCA	
Course Code: CSA3074	Course Name: REINFORCEMENT LEARNING	
Semester: V	Max Marks:50	Weightage:25%

CO - Levels	C01	C02	C03	C04	C05
Marks	26	24			

Instructions:

- (i) Read all questions carefully and answer accordingly.
- (ii) Do not write anything on the question paper other than roll number.

Part A

Answer ALL the Questions. Each question carries 2marks.

5Q x 2M=10M

1	What is meant by a positive reward and a negative reward?	2 Marks	L2	C01
2	Differentiate Supervised Learning and Reinforcement Learning.	2 Marks	L2	C01
3	Define a deterministic environment in Reinforcement Learning and give an example.	2 Marks	L2	C01
4	Write the incremental mean update formula used in Monte Carlo prediction.	2 Marks	L2	C02
5	Why is Off-Policy MC control considered more flexible than On-Policy MC control?	2 Marks	L2	C02

Part B

Answer the Questions.

Total Marks 40M

6.	a.	Explain Markov Decision Process (MDP). Explain its key components with an example.	10 Marks	L4	CO1
Or					
7.	a.	Compare deterministic policy and stochastic policy in terms of their effect on value functions.	10 Marks	L4	CO1

8.	a.	Discuss the role of policies, value functions, and the Bellman equation in solving MDPs, along with the limitations and scope of RL.	10 Marks	L3	CO1
Or					
9.	a.	Differentiate model-based vs. model-free learning with Example.	10 Marks	L3	CO1

10.	a.	Explain Off-Policy Monte Carlo (MC) Control in reinforcement learning. How does it differ from On-Policy MC Control?	10 Marks	L4	CO2
Or					
11.	a.	Explain the Monte Carlo control method with an epsilon-greedy policy for reinforcement learning.	10 Marks	L3	CO2

12.	a.	Compute final value of states for the given policy.	10 Marks	L3	CO2
Or					
13.	a.	Illustrate MC prediction Algorithm with Suitable Example.	10 Marks	L4	CO2