

**BONAM VENKATA CHALAMAYYA INSTITUTE OF TECHNOLOGY & SCIENCE
(AUTONOMOUS)**

**III - B.Tech II-Semester Regular Examinations (BR23), MAY - 2026
REINFORCEMENT LEARNING(AI&ML)**

Time: 3 hours

Max. Marks: 70

*Question Paper consists of Part-A and Part-B
Answer ALL the question in Part-A and Part-B*

PART-A (10X2 = 20M)

	Marks	CO	BL
1. a) What is an agent in RL?	(2M)	CO1	BL 1
b) Mention any two limitations of Reinforcement Learning.	(2M)	CO1	BL 2
c) What is action-value method?	(2M)	CO2	BL 1
d) What is exploration in bandit problems?	(2M)	CO2	BL 2
e) What is value function?	(2M)	CO3	BL1
f) Define optimal value function.	(2M)	CO3	BL2
g) Define Monte Carlo method.	(2M)	CO4	BL1
h) What is variance in MC methods?	(2M)	CO4	BL1
i) What is the Acrobot problem?	(2M)	CO5	BL1
j) What is real-world RL application?	(2M)	CO5	BL2

PART-B (5X10 = 50M)

2 Describe the Reinforcement Learning problem with examples. (OR)	10(M)	CO1	BL2
3. Explain the Tic-Tac-Toe example in detail for RL understanding.	10(M)	CO1	BL3
4. Explain UCB action selection with advantages. (OR)	10(M)	CO2	BL3
5. Describe associative search and contextual bandits.	10(M)	CO2	BL3
6. Explain the components of Finite Markov Decision Process. (OR)	10(M)	CO3	BL2
7. Discuss optimality and approximation in MDPs.	10(M)	CO3	BL3
8. Explain incremental implementation of MC methods. (OR)	10(M)	CO4	BL2
9. Discuss Monte Carlo control without exploring starts.	10(M)	CO4	BL3
10 Explain elevator dispatching using RL techniques. (OR)	10(M)	CO5	BL3
11 Discuss applications of RL in job-shop scheduling and communication systems.	10(M)	CO5	BL4
