

School of Computing Science and Engineering

Department of Computer Application

Mid Term Examination

Exam Date: 30 Sep 2023

Time : 90 Minutes

Marks : 50

Sem III - MCAN2320 - Artificial Intelligence

Your answer should be specific to the question asked

Draw neat labeled diagrams wherever necessary

- 1) Compare various local searching techniques. K2 (2)
- 2) Name the various types of informed search. K1 (3)
- 3) Show that $(p \wedge q) \rightarrow (p \rightarrow q)$ conditional statements is a tautology by using truth tables. K2 (4)
- 4) Explain the concept of inference in first-order logic. How does it differ from propositional logic? K2 (6)
- 5) Compare and contrast production systems and control strategies used in AI. K3 (6)
- 6) Translate the following sentences in quantified expressions of predicate logic. K3 (9)
 - i) All students need financial aid.
 - ii) Some cows are not white.
 - iii) if water is hot, then shyam will swim in pool.
- 7) Evaluate the effectiveness of uniformed search strategies in finding solutions. K4 (8)
- 8) Prove the equivalence $(p \rightarrow r) \vee (q \rightarrow r) \equiv (p \wedge q) \rightarrow r$. K4 (12)

OR

Explain whether $(\neg p \wedge (p \rightarrow q)) \rightarrow \neg q$ is a tautology. K4 (12)