School of Computing Science and Engineering
Master of Computer Applications
Semester End Examination - Nov 2023

Duration : 180 Minutes
Max Marks : 100

Sem III - MCAN2320 - Artificial Intelligence

General Instructions
Answer to the specific question asked
Draw neat, labelled diagrams wherever necessary
Approved data hand books are allowed subject to verification by the Invigilator

1) What is the primary goal of artificial intelligence? — K1 (2)

2) Explain first-order logic and provide an example of a first-order logic statement. — K2 (4)

3) Illustrate the three main types of machine learning — K2 (6)

4) Check the validity of the following arguments. Show with the use of symbolic notation: — K3 (9)

$x^2=y^2$ only if $x=y$

$(x=y)$

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$x^2=y^2$

5) Show that $p \lor (q \land r)$ and $(p \lor q) \land (p \lor r)$ are logically equivalent. — K3 (9)

6) Discuss online search agents using DFS — K5 (10)

7) Critique the performance of a natural language processing model for sentiment analysis. — K4 (12)

8) Design an original machine learning project that addresses a real-world problem, such as predicting stock prices. — K5 (15)

9) Assess the trade-offs between model complexity and generalization performance in machine learning. — K5 (15)

10) Show and evaluate $\neg(p \leftrightarrow q)$ and $p \leftrightarrow \neg q$ are logically equivalent. — K6 (18)