VIT
Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

REG.NO.:

School of Computer Science and Engineering (SCOPE)
CONTINUOUS ASSESSMENT TEST - II
FALL SEMESTER 2024-2025

SLOT: E2 + TE2

Programme Name & Branch: B. Tech. (BCB, BCE, BCI, BCT, BDS & BKT)
Course Code and Course Name : BSCE306L / Artificial Intelligence
Faculty Name(s) : Prof. Priyadharsini M, Prof. Monash P, Prof. Jaisankar N, Prof. Jyotismita Chaki, Prof. Anindita Kundu, Prof. Geraldine Bessie Amali D, Prof. Saravanaguru RA.K, Prof. Mohana CM, Prof. Priyanka N, Prof. Rajakumar K, Prof. Lijo V.P, Prof. Shashank Mouli Satapathy, Prof. Gladys Gnana Kiruba B, Prof. Arpan Garai, Prof. Anand Bihari, Prof. Viswanathan P, Prof. Sivanesan S, Prof. Karthik K,Prof. Sudhakara Pandian R
Class Number(s) : VL2024250101495, 5795, 1424, 1468, 1472, 1453, 1428, 1484, 1487, 1433, 1480, 1458, 1478, 1503, 1482, 1437, 1476, 1492, 3566
Date of Examination : 17-Oct-2024
Exam Duration : 90 minutes **Maximum Marks: 50**

General instruction(s):

- Answer All Questions

Q. No	Question	M
1.	Consider a complete binary tree with the leaf nodes 5, 4, 3, 2, 8, 9, 10, 11, 3, 12, 2, 13, 15, 10, 14, 17 (left to right). Consider that tree as the game tree. By Applying mini-max search, show the backed-up values in the tree. Assume min takes the first call. If the nodes are expanded from left to right, analyze the efficiency if alpha-beta pruning is applied?	10
2.	Consider the following story of the "Successful candidate": "Anyone good at coding or having an innovative mind or having recommendations will get a job. Anyone who practices coding or works in a research project becomes a good coder and innovative. Rahul is too lazy to practice code or work in a research project. However, his uncle will give him a letter of recommendation." Prove using resolution that "Rahul will get a job".	10
3.	A. Convert the following English Statements into First Order Logic (FOL) (5) i. Any house in Bhopal costs less than any apartment in Pune. ii. Any 3 star washing machine costs less but consumes more power than a 5 star washing machine. iii. There is exactly one person whose JEE rank is 14. iv. There is a Villa in Mumbai which costs more than any other villa. v. A person who loves his mother is loved by everyone. B. Convert above First Order Logic (FOL) statements to Conjunctive Normal Form (CNF). (5)	10
4.	A. There are three students, Anjali, Braian, and Chenna. One of them is a topper. When asked, they said the following. Anjali: "I am not the topper." Braian: "I am not the topper." Chenna: "Braian is the topper." If only one person is telling the truth; Who is the topper? Formalize the puzzle in Propositional Logic and find the solution using a truth table. (3+2) B. Explain how Modus Ponen and Modus Tollens can be used to infer logic with a real world example. (5)	10
5.	A. Explain Bayes' rule with a suitable example. (3) B. In a reputed engineering college, there are 1000 students. Among them, 700 students got placement offers. Overall, it is seen that 82% of the candidates are strong in 'C language' among the selected candidates. In the class, 660 students are strong in 'C language'. Sweta is strong in 'C language'. How likely is she to get the placement offer? Map the scenario into a set of propositions and apply Bayes' rule to solve the problem. (7)	10

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