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Future Vision

By K B Hemanth Raj

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ARTIFICIAL INTELLIGENCE

[As per Choice Based Credit System (CBCS) scheme]

(Effective from the academic year 2017 -2018)

SEMESTER – V

Subject Code **17CS562**

IA Marks **40**

Number of Lecture Hours/Week **03**

Exam Marks **60**

These Questions are being framed for helping the students in the “FINAL Exams” Only (Remember for Internals the Question Paper is set by your respective teachers). Questions may be repeated, just to show students how VTU can frame Questions.

- **ADMIN**

Module 2 –

1. Consider the following set of well-formed formulas in predicate logic:
 - i. $\text{Man}(\text{Marcus})$
 - ii. $\text{Pompeian}(\text{Marcus})$
 - iii. $\forall x: \text{Pompeian}(x) - \text{Roman}(x)$
 - iv. $\text{Ruler}(\text{Caesar})$
 - v. $\forall x: \text{Roman}(x) \rightarrow \text{loyalto}(x, \text{caesar}) \vee \text{hate}(x, \text{caesar})$
 - vi. $\forall x: y \text{loyalto}(x, y)$
 - vii. $\forall x: \forall y \text{Man}(x) \wedge \text{Ruler}(y) \wedge \text{tryassassinate}(x, y) \rightarrow \text{loyalto}(x, y)$
 - viii. $\text{Tryassassinate}(\text{Marcus}, \text{Caesar})$.

- Convert these into clause form and prove that hate (Marcus, caesar) using resolution proof. (10-Marks) (3a) (June/July 2018)
2. What is “Matching” in rule based system? Briefly explain different proposals for matching. (6-Marks) (3b) (June/July 2018)
 3. What are properties of good system for the representation of knowledge? Explain different approaches to knowledge representation. (6-Marks) (4a) (June/July 2018)
 4. Distinguish forward and backward reasoning explain with example. (6-Marks) (4b) (June/July 2018)
 5. List the issues in knowledge representation. (4-Marks) (4c) (June/July 2018)
 6. Explain the frame problem. (6-Marks) (3a) (Dec.2017/Jan.2018)
 7. Write the algorithm for conversion to clause form. (10-Marks) (3b) (Dec.2017/Jan.2018)
 8. Define Horn clause and give the syntactic difference between PROLOG and logic. (4-Marks) (4a) (Dec.2017/Jan.2018)
 9. Write the algorithm to unify (L_1, L_2) . (6-Marks) (4b) (Dec.2017/Jan.2018)
 10. Write a note on conflict resolution. (6-Marks) (4c) (Dec.2017/Jan.2018)
 11. Explain the Forward and Backward Reasoning. (6-Marks)
 12. Consider the following sentences:
 - i. **Raj likes all kinds of food.**
 - ii. **Apples are food.**
 - iii. **Anything anyone eats and isn't killed by is food.**

iv. Sachin eats peanuts and is still alive.

v. Vinod eats everything Sachin eats.

12.1. Translate these sentences into First Order Predicate Logic.

12.2. Use Resolution to answer the question, "What food does Vinod eat?" (mod-2)

13. Consider the following axioms:

- i. Anyone whom Mary loves is a football star.
- ii. Any student who does not pass does not play
- iii. John is a student.
- iv. Any student who does not study does not pass.
- v. Anyone who does not play is not a football star.

Prove using resolution process that "If John does not study, then Mary does not love John".

14. Explain the different approaches to knowledge representation.

**ANSWER SCRIP FOR THESE
QUESTIONS WILL BE UPLOADED ASAP**

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<https://hemanthrajhemu.github.io/AnswerScript>

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