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Question Paper Code : X 60387

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2020
Sixth Semester

Computer Science and Engineering

CS 2351/10144 CS 601 –ARTIFICIAL INTELLIGENCE

(Common to Seventh Semester –Electronics and Instrumentation

Engineering, Instrumentation and Control Engineering and Information Technology)

(Regulations 2008/2010)

(Also common to PTCS 2351 – Artificial Intelligence for B.E. (Part-Time)

Sixth Semester – CSE – Regulations 2009)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions

PART – A

(10×2=20 Marks)

1. What are the four components to define a problem ? Define them.
2. Define basic agent programs.
3. Define the first order definite clause.
4. State the expressiveness extension.
5. Give the elements of a search-based problem-solver with their meaning.
6. Define Contingency planning.
7. Define the Bayes rule.
8. What do you mean hybrid Bayesian network ?
9. What are the methods of Statistical learning ?
10. State the advantages of Inductive learning.

PART – B

(5×16=80 Marks)

11. a) i) What is uninformed search? Explain depth first search with example. (8)
ii) Give the algorithm for recursive best first search. (8)
- (OR)
- b) i) Explain the nature of heuristics with an example. What is the effect of heuristic accuracy on performance ? (8)
ii) Write a simple back tracking algorithm for constraint satisfaction problems. (8)



12. a) Explain the forward chaining process and efficient forward chaining with example. State its usage.

(OR)

b) State and explain the various steps in knowledge engineering process.

13. a) Explain the concept behind partial order planning with suitable examples. (16)

(OR)

b) Explain the use of planning graphs in providing better heuristic estimates with suitable examples. (16)

14. a) Explain the inferences in Bayesian network. (16)

(OR)

b) State and compare Temporal model and Hidden Markov model. (16)

15. a) The following table consists of training data from an employee database.

The data have been generalized. Let status be the class label attribute.

Construct Decision tree from the given data

Department	Age	Salary	Count	Status
Sales	31...35	46K...50K	30	Senior
Sales	26 ...30	26K...30K	40	Junior
Sales	31...35	31K...35K	40	Junior
Systems	21...25	46K...50K	20	Junior
Systems	31...35	66K...70K	5	Senior
Systems	26...30	46K...50K	3	Junior
Systems	41...45	66K...70K	3	Senior
Marketing	36...40	46K...50K	10	Senior
Marketing	31...35	41K...45K	4	Junior
Secretary	46...50	36K...40K	4	Senior
Secretary	26...30	26K...30K	6	Junior

(OR)

b) Explain in detail about Active and Passive Reinforcement learning. (16)
