



WEST BENGAL STATE UNIVERSITY

B.Sc. Honours 6th Semester Examination, 2022

CMSACOR13T-COMPUTER SCIENCE (CC13)

Time Allotted: 2 Hours

Full Marks: 40

*The figures in the margin indicate full marks.
Candidates should answer in their own words and adhere to the word limit as practicable.*

GROUP-A

1. Answer any **four** questions from the following 2×4 = 8
- (a) Define the term “Artificial Intelligence”.
 - (b) What is adversarial search?
 - (c) State the difference between tautology and contradiction with an example.
 - (d) State the main advantage of any heuristic search algorithm over blind search algorithm.
 - (e) What is an “agent” in AI?
 - (f) What are the various issues in knowledge representation?
 - (g) What is inferential knowledge?

GROUP-B

Answer any four questions from the following

8×4 = 32

2. (a) What is heuristic search? 2+2+4
- (b) What do you mean by Ridge?
- (c) Explain the concept of Best-First Search with example.
3. (a) Compare Database and Knowledgebase. 3+5
- (b) Consider the following axioms-
- $P, (P \wedge Q) \rightarrow R, (S \vee T) \rightarrow Q, T$
- Prove that R is true by resolution.
4. (a) What kind of knowledge is represented by the semantic nets? 2+(3+3)
- (b) Write short notes on:
- (i) Scripts (ii) Frames

5. (a) What do you understand by a task environment? Differentiate between the following environments with example: 1+2+2
(i) Fully observable vs. partially observable
(ii) Discrete vs. continuous
(b) What is the state-space model of a search problem? Design the state-space model for the 8-Queen problem. 1+2
6. (a) Convert the following sentences into predicate logic expressions and then its clause form: 6
(i) All people who are smart but not poor are happy.
(ii) Sam eats everything Mary Eats.
(iii) Every person in the party loves every child.
(iv) If it is a bird, it can fly.
(b) What is Skolemisation? 2
7. Write short notes on the following (any **two**): 4+4
(a) MINIMAX algorithm
(b) A* algorithm
(c) Water jug problem.

N.B. : Students have to complete submission of their Answer Scripts through E-mail / Whatsapp to their own respective colleges on the same day / date of examination within 1 hour after end of exam. University / College authorities will not be held responsible for wrong submission (at in proper address). Students are strongly advised not to submit multiple copies of the same answer script.

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