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Roll No.

TCS-421

**B. TECH. (CSE)
(FOURTH SEMESTER)
MID SEMESTER**

EXAMINATION, April, 2023

FUNDAMENTALS OF STATISTICS AND AI

Time : 1½ Hours

Maximum Marks : 50

Note : (i) Answer all the questions by choosing any *one* of the sub-questions.

(ii) Each sub-question carries 10 marks.

1. (a) "Artificial Intelligence is a branch of science that deals with helping machines find the solutions to complex problems in a more human like fashion." Justify the above statement and explain the various foundation of AI. (CO1)

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OR

- (b) "In the current scenario, Artificial Intelligence is almost used in every aspect of our life". With respect to the above statement explain the impact of artificial intelligence in various fields with the help of an examples. (CO1)
2. (a) "Artificial Intelligence, as used in current scenario, is not developed in few days rather it has to undergo from various phases and development since its inception". Justify the above statement by specifying all the development within various years since 1945. (CO1)

OR

- (b) What do you mean by agents in artificial intelligence ? Explain any *two* types of agents with its architectural diagram and limitations. (CO1)
3. (a) What do you mean by Problem Solving in Artificial Intelligence ? Explain the

algorithm of Problem Solving. Also specify how AI approach of problem solving is different from traditional methods of solving a problem. (CO2)

OR

- (b) What is the difference between DFS and BFS form implementing searching ? Give the step-by-step values of both using an example. (CO2)
4. (a) Why searching is an important aspect of Artificial Intelligence ? Explain different categories of search algorithms in AI. Discuss with the help of an example. (CO2)

OR

- (b) "The simplest strategy in game theory used in Artificial Intelligence in MinMax Algorithm". Explain the working of MinMax algorithm by specifying any example and specify its algorithm also. (CO2)

5. (a) Explain the problems and issues related to the development of any AI based application in detail. Also give some solutions to overcome these problems.

(CO1, CO2)

OR

- (b) Explain the following algorithm with the help of an example (Algorithm or Code is mandatory) :

(CO1, CO2)

(i) Uniform Cost Search

(ii) A* Search