



देव संस्कृति विश्वविद्यालय

शान्तिकुन्ज, हरिद्वार

आन्तरिक मूल्यांकन परीक्षा - INTERNAL EVALUATION TEST

उत्तर-पुस्तिका

परीक्षार्थी अनुक्रमांक (अंकों में)
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1824020

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परीक्षार्थी अनुक्रमांक (शब्दों में)
Student's Roll No. (in words)

Eighteen

नामांकन संख्या
Enrollment Number

कक्षा
Class

BAC 6th Sem


विषय
Subject


दिनांक
Date

25/02/2021

दिन
Day

प्रश्न पत्र संख्या
Examination Paper Number


परीक्षार्थी के हस्ताक्षर
Signature of student's


परीक्षक के हस्ताक्षर
Signature of Examiner

लघुसूचीय		योग/Total
A) Short Answer Type		
1	2	
दीर्घ उत्तरीय		
B) Long Answer Type		
1		
कुल योग अंकों में / TOTAL IN DIGITS		
कुल योग शब्दों में/TOTAL IN WORDS		

Short Answer

Ques 1)
A

Define AI & Pattern Recognition?

- Artificial intelligence (AI) refers to the simulation of human intelligence in machines that are programmed to think humans and mimic their actions.
- The term may also be applied to any machine that exhibits traits associated with a human mind such as learning and problem-solving.
- The ideal characteristic of artificial intelligence is its ability to rationalize and take actions that have the best chance of achieving a specific goal.
- Artificial intelligence refers to the simulation of human intelligence machine.
- AI is being used across different industries including finance and health care.

Pattern Recognition:-

A pattern is an entity, vaguely defined, that could be given a name eg fingerprint image, handwritten word, human face, speech signal, DNA sequence.

- Pattern recognition involves finding the similarities or patterns among small, decomposed problems that can help us solve more complex problems.
- The most significant difference between AI and Patterns Recognition is that AI focuses on the reasoning part and pattern Recognition on the observations derived from any data.
- The term artificial intelligence is applied when a machine mimics cognitive functions that humans associate with the human minds, such as learning and problem solving.
- Using:- Google (Google Analytic, Voice Search, Reverse image search), Ada Health.

Q2.

What is production system? Briefly explain its parts.

- Search forms the core of many intelligent processes it is useful to structure AI programs in a way that facilitates describing and performing the search process
- Production system provided such structures
- A production system consists of few basic components:
 - a. A set of rules of the form $C_i \rightarrow A_i$ where C_i is the condition part and A_i is the action part.
 - b. One or more knowledge databases that contains whatever information is relevant for the given problem.
 - c. A control strategy that determines the order in which the rules are applied to the database

(4)

- A rule applier which is the computational system that implements the control strategy and applies the rules.

The major components of production system in Artificial Intelligence are:

- Set of production Rules:- The production rules operate on the global database. Each rule usually has a condition that is either satisfied or not by the global database.
- Global Database:- The global rules operate on the central data structure used by the production system in Artificial Intelligence.
- A control system:- The control system then chooses which applicable rule should be applied and ceases computation when a termination condition on the database is satisfied. If multiple rules are to fire at the same time, the control system resolves the conflict.

Long Answer type Question

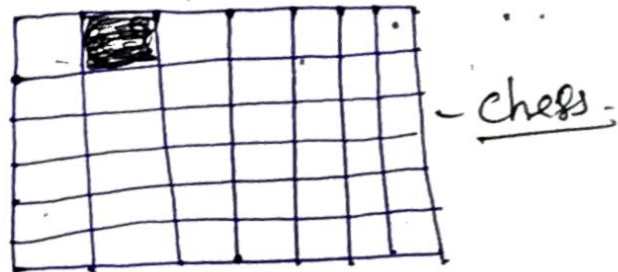
1. A Problem formulation:-

- i) Define the problem precisely. The definition must comprise of precise specification of the initial situations as well the final situation with acceptable solutions to the problem.
- ii) Analyse the problem.
- iii) Isolate and represent the task knowledge which is required to solve the problem.
- iv) Choose the best problem-solving technique(s) and apply it (them) to the particular problem.
- v) Transition Model: - It describes what each action does.
- vi) Goal test: - It determines if the given state is a goal state.

Problem Definition:-

Chess Game.

- Legal Moves.
- Position that represents a win.
- It is not only the play but also the winning condition which terminates the game.



Goal:- Opponent does not have a legal move.

- King is under attack.

Practical Difficulties:- No person could ever supply a complete set of such rules. It would take too long and could certainly not be done without mistakes.

(7)

- No program could easily handle all those rules. Although a hashing scheme could be used to find the relevant rules. for each move fairly quickly storing in fact a difficulty.

White pawn at

Square (file e, rank 2)

Square (file e, rank 3)
is empty



Move pawn from
Square (file e, rank 2)

Square (file e, rank 4)
is empty!

to Square (file e, rank 4)

- It permits us to define the process of solving a particular problem as combination of known techniques and search.