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Course code: CSI-241

Course Title: Artificial Intelligence.

①

Answers to the question no: 1(a)

1. (a) Ans: AI: Artificial intelligence is the simulation of human intelligence processes by machines, especially computer systems. Specific applications of (AI) include expert systems, natural language processing, speech recognition and machine vision.

The applications of (AI): Artificial intelligence is used to identify defects and nutrient deficiencies in the soil. This is done using computer vision, robotics, and machine learning applications, (AI) can analyze where weeds are growing. (AI) bots can help to harvest crops at a higher volume and faster than human laborers.

2 :

Answer to the question no: 1(b)

1. (b) Ans: NLP: Natural language processing (NLP) is a machine learning technology that gives computers the ability to interpret, manipulate and comprehend human language.

#(NLP) in expert systems: (NLP) can improve the functionality of many different systems such as search engines, question answering systems, translation systems, text summarization tools, and machine translation tools. It also plays a role in image captioning and text-to-speech synthesis, which converts written text into audio files.

(3)

Answer to the question no: 2 (a)

2. (a) Ans: Difference type of (AI): 4 main difference types of artificial intelligence:

① Reactive machines: Reactive machines are (AI) systems that have no memory and are task specific, meaning that an input always delivers the same output.

② Limited memory: The next type of (AI) in its evolution is limited memory.

③ Theory of mind.

④ Self-awareness.

Answer to the questions no: 2 (b)

2. (b) Ans: Russell and Googles Peter Norvig broke (AI) into five distinct research areas originating from the total Turing test:

① Machine Learning.

② Expert Systems.

③ Computer Vision.

④ Natural Language Processing.

⑤ Robotics.

P.T.O.

(4)

Answer to the question no:2 (c)

2(c): Ans: An Agent is anything that can perceive its environment through sensors and acts upon that environment through effectors. A human agent has sensory organs such as eyes, ears, nose, tongue and skin parallel to the sensors, and other organs such as hands, legs, mouth, for effectors. An agent observes its environment through sensors.

Actuators: Actuators are the component of machines that converts energy into motion. The actuators are only responsible for moving and controlling a system. An actuator can be an electric motor, gears, rails, etc.

(5)

Answer to the question no: 3 (c)

3. (c) Ans: PEAS descriptor for automated Teller Machine. Performance Measure: Safety: Automated system should be able to drive the teller machine safely without dashing anywhere. Optimum speed: Automated system should be able to maintain the optimal speed depending upon the situation.