ARTIFICIAL INTELLIGENCE (CS304)

Tutorial-3

Questions:

1. What do you mean by task environment? For following given problems/Situation, identify each task environment characteristics (Refer Table-1 below) along with justification. (Refer section-2.3.2- of AI by Russell Book)

    a. **Auto Crane-Driving -** Consider a self-driving crane: the crane is supposed to drive in campus of a MNC. The car is used to purpose of transferring raw materials from Warehouse to Shop Floor

    b. **Animal Detection in Image** – Consider a Traffic signal having camera, Camera takes pictures of Road in specified time intervals. The objective is to detect frequent animals arrival on road.

Table-1

Task Environment	Characteristics
Observable	Fully, Partially, Unobservable
Agent	Single-Agent, Multi-agent
Deterministic	Deterministic, stochastic, uncertain
Episodic	Sequential, Episodic
Static	Static, Dynamic, Semi-Dynamic
Discrete	Discrete, Continuous

2. Compare Goal Based and Model-based reflex agents (Refer: 2.4 AI by Russell Book).

3. Consider WordNet as an example of semantic-nets. Represent Following paragraph in form of wordNet. (Refer 9.1 in AI by Rich & Knight Book)

    A virus is software. A virus can spread quickly from one computer to another and result in abnormal performance. A virus is a sort of malware. A virus replicates itself by creating files and attaching itself to genuine software, allowing the user to run the virus. A virus can only spread with human interaction. A computer virus is a program that disrupts the normal working of a computer without the user's knowledge. A computer virus attaches itself to the files stored on the computer and damages them. When the replication succeeds, the affected areas are said to be infected with a computer virus. A computer virus is a malicious piece of software or malware that, once it gets inside your computer, replicates and infects other computers in your network, stealing passwords, data, logging keystrokes, corrupting files, spamming your contacts, or even taking over your machine.