Machine learning 02

1. What is the concept of human learning? Please give two examples.

Ans:- Many examples of this case are found in case of human learning. Learning to drive a motor-car, typewriting, singing or memorizing a poem or a mathematical table, and music etc. need exercise and repetition of various movements and actions many times.

2. What different forms of human learning are there? Are there any machine learning equivalents?

Ans:-   
Contents Classical and operant conditioning Categories of learning and the problem of definition Representativeness of rote verbal learning Centrality of verbal learning Probability learning Evaluation of stimulus sampling theory Short-term memory and incidental learning

3. What is machine learning, and how does it work? What are the key responsibilities of machine learning?

Ans:- Machine learning provides smart alternatives for large-scale data analysis. Machine learning can produce accurate results and analysis by developing fast and efficient algorithms and data-driven models for real-time data processing.

4. Define the terms "penalty" and "reward" in the context of reinforcement learning.

Ans:- A reinforcement learning algorithm, which may also be referred to as an agent, learns by interacting with its environment. The agent receives rewards by performing correctly and penalties for performing incorrectly. The agent learns without intervention from a human by maximizing its reward and minimizing its penalty.

5. Explain the term "learning as a search"?

Ans:- In *general, we can think of concept learning as a search problem. The learner searches through a space of hypotheses (we will explain what they are), to find the best one. Which* one would be the best one? The answer is the one that fits the training examples the best.

6. What are the various goals of machine learning? What is the relationship between these and human learning?

Ans:- (1) To make the computers smarter, more intelligent. The more direct objective in this aspect is to develop systems (programs) for specific practical learning tasks in application domains. (2) To dev elop computational models of human learning process and perform computer simulations.

7. Illustrate the various elements of machine learning using a real-life illustration.

Ans:- Image recognition is a well-known and widespread example of machine learning in the real world. It can identify an object as a digital image, based on the intensity of the pixels in black and white images or colour images.

8. Provide an example of the abstraction method.

Ans:- A method declared using the abstract keyword within an abstract class and does not have a definition (implementation) is called an abstract method.

9. What is the concept of generalization? What function does it play in the machine learning process?

Ans:- Generalization refers to **your** model's ability to adapt properly to new, previously unseen data, drawn from the same distribution as the one used to create the model

11. What is regression, and how does it work? Give an example of a real-world problem that was solved using regression.

Ans:- Predicting the house price based on the size of the house, availability of schools in the area, and other essential factors. Predicting the sales revenue of a company based on data such as the previous sales of the company.

12. Describe the clustering mechanism in detail.

Ans:- Clustering is the task of dividing the population or data points into a number of groups such that data points in the same groups are more similar to other data points in the same group than those in other groups.

13. Make brief observations on two of the following topics:

i. Machine learning algorithms are used :- machine learning uses programmed algorithms that receive and analyse input data to predict output values within an acceptable range. As new data is fed to these algorithms, they learn and optimise their operations to improve performance, developing 'intelligence' over time.