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

->Learning is basically observing some pattern with the given data , build our theory(model) to explain the pattern and then test our theory (model) to check if this fits most of the observations.

For example

Day or night->

1)we see that we have day time in certain part of the day and night time in certain part of the day

2) we build possible theories to explain these patterns-

Model1/theory1- maybe sun revolves around the earth causing day and night

Model2/theory2- maybe earth revolves around sun

Model 3/theory 3- sun switches its light on and off

3) based on all these theories we try to test the theory which fits most of our observations, which is the second one.

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

->1.concept learning

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

-> as in human learning we observe the pattern, create a theory to explain the pattern and then test our theory based on observations

Same in machine leaning , for a given problem we gather the data, try to understand the data (by defining pattern with minimum error) by creating a model, and then test our model based on unseen data ( to verify If it is behaving correctly or not)

4.define the terms penalty and reward in terms of reinforcement learning.

5.Explain the term “learning as a search”

6.what are the various goals for machine learning? What is the relationship between this and human learning?

The goal of machine learning is to achieve a thorough understanding about the nature of learning process, about the computational aspects of learning behaviors, and to implant the learning capability

Goals

(1) To make the computers smarter, more intelligent.

(2) To develop computational models of human learning process and perform computer simulations. The study in this aspect is also called cognitive modeling.

(3) To explore new learning methods and develop general learning algorithms independent of applications.

In human learning also we try to understand the pattern and build most optimal theory which explains all observations

7.illustrate various aspects of machine learning using real life examples.

8.provide an example of abstraction method.

-> a mobile phone is able to do many things like making a call or playing a game or taking a picture but It does not show us inside process of how It is doing the things. The functionality is hidden.

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

->generalization means how well is a trained model to classify or forecast unseen data. We should always build a generalized model so that it performs well with unseen data

10.What is classification? What is the difference between classification and regression?

-> classification means dividing our dataset into different classes.

Classification problem means predicting the label

Regression problem means predicting a numerical value(quantity)

11.define Regression, How does it work. Give example of real world problem that is solves using regression.

->regression means predicting numerical output which is dependent on independent features.it means deriving a relation between independent features so as to predict Y. like in linear regression we try to create a best fit line which is derives the predict Y based on X keeping errors at a minimum rate.

Real time example-

a. how much money you have to spend on fuel if you travel some specific kms.

b. money spend on ad to predict revenue generation

c. predict BP by drug dosage

d. impact on agricultural yield based on amount of fertilizers used.

12.decribe clustering mechanism in detail

13.make a brief observation on two of the following topics.

1.machine learning algorithms that are used

i)studying under supervision

ii) studying under supervision

2.reinforcement learning is a form of learning based on positive reinforcement.