Fill in the Blanks (Units 3, 4, 5)

Unit III

1. Bayes theorem calculates _____ in probabilistic models. Answer: probabilities

2. The Naive Bayes classifier assumes _____ between features. Answer: independence

3. The principle that prefers the simplest hypothesis is called _____. Answer: Occam's Razor

4. In Bayesian learning, the belief before seeing the data is called the _____. Answer: prior

5. The term PAC stands for _____ learning. Answer: Probably Approximately Correct

6. The EM algorithm involves two steps: Expectation and _____. Answer: Maximization

7. The Vapnik-Chervonenkis (VC) dimension measures the _____ of a model. Answer: capacity

8. In instance-based learning, predictions are based on the _____ data points. Answer: nearest

9. The term "likelihood" in Bayesian learning refers to the _____ of the data given the model. Answer: probability

10. Instance-based learning stores _____ training examples for future use. Answer: all

Unit IV

1. Genetic algorithms are based on the concept of _____. Answer: natural selection

2. The process of combining parts of two parent solutions in genetic algorithms is called _____. Answer: crossover

3. In reinforcement learning, the feedback received after performing an action is called a _____. Answer: reward

4. In genetic algorithms, mutations introduce _____ into the population. Answer: diversity

5. A reinforcement learning agent aims to maximize its _____ over time. Answer: reward

6. Genetic algorithms use a _____ function to evaluate the quality of solutions. Answer: fitness

7. The _____ tradeoff in reinforcement learning involves choosing between exploring new actions or exploiting known ones. Answer: exploration-exploitation

8. Reinforcement learning typically involves interacting with a _____ environment. Answer: dynamic

9. In genetic algorithms, _____ helps introduce diversity into the population. Answer: mutation

10. Reinforcement learning algorithms aim to find the _____ strategy for a task. Answer: optimal

Unit V

1. Analytical learning emphasizes the use of _____ knowledge. Answer: prior

2. The integration of inductive and analytical learning enhances _____. Answer: performance

3. A significant advantage of analytical learning is its ability to handle _____. Answer: complexity

4. The process of refining knowledge based on examples is known as _____. Answer: explanation-based generalization

5. In analytical learning, the term "explanation-based learning" involves _____. Answer: reasoning

6. Combining analytical and inductive approaches results in _____ models. Answer: robust

7. Analytical learning is particularly beneficial in _____ domains. Answer: complex

8. One key feature of analytical learning is its reliance on _____ knowledge. Answer: expert

9. The integration of different learning approaches can lead to improved _____ performance. Answer: predictive

10. Analytical learning can assist in making _____ decisions. Answer: complex