Question 1. Marks: 2.00

Fill your answer within the blanks provided below

If a boosting model has 15 stages and each stage classifier has an error rate of 0.25, what is the final boosted model's error rate? (upto 4 decimal points)

0.0053

Question 2. Marks: 2.00

Fill your answer within the blanks provided below

For a Gradient Boosting model, if the base learner's error is 0.4 and you use 50 rounds with a learning rate of 0.2, what is the cumulative error reduction?(upto 4 decimal points)

0.0002

Question 3.	Marks : 2.00

Fill your answer within the blanks provided below

The gamma parameter in XGBoost is used to prevent overfitting by

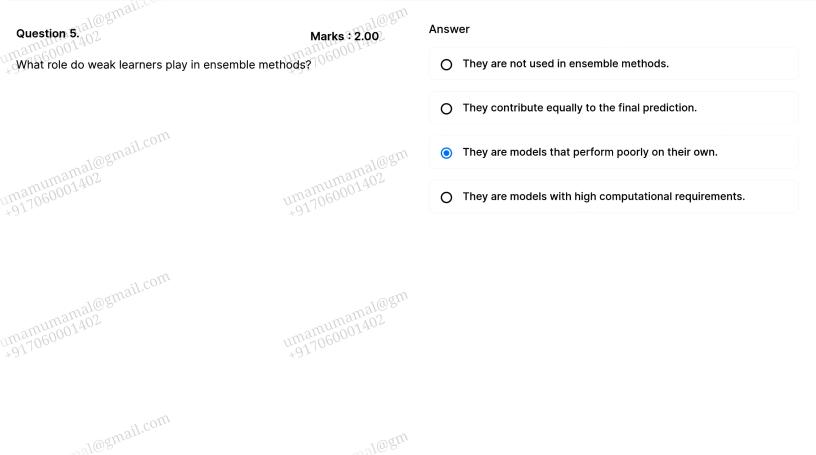
controlling the complexity of the model.

Question 4. Marks : 2.00

What is the primary difference between model-based and modelfree reinforcement learning?

umamumamal@gs*

- Model-based learning is only applicable to episodic tasks, while model-free learning can be used for continuous tasks. Next
- Model-based learning uses a trial-and-error approach, while model-free learning uses a model of the environment to find the optimal policy.
- O Model-free learning is a type of supervised learning, while model-based learning is a type of unsupervised learning.
- Model-based learning requires a model of the environment (states, rewards, transitions) to find an optimal policy, while model-free learning derives an optimal policy directly from interactions with the environment.

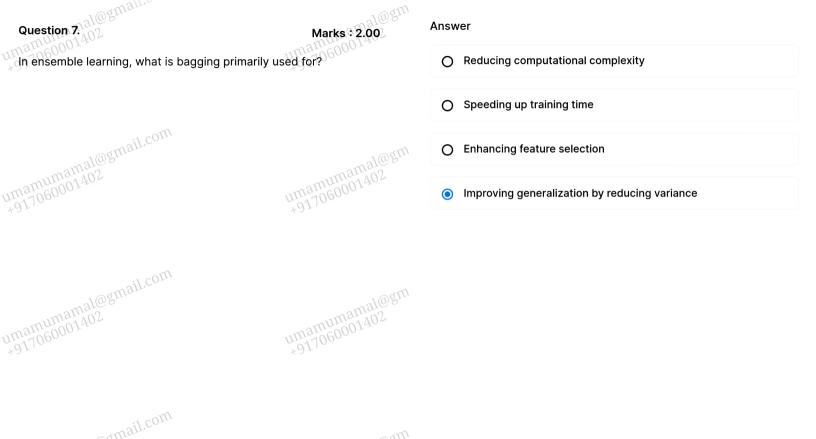


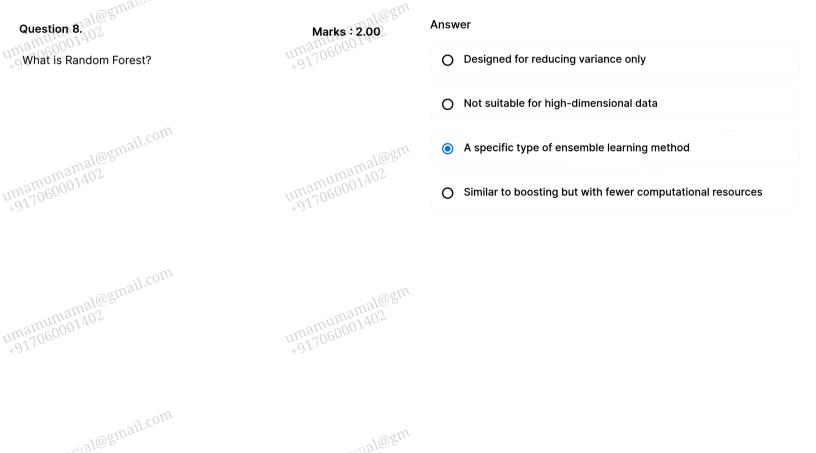
Question	6.
----------	----

Marks : 2.00

Fill your answer within the blanks provided below

To prevent overfitting, ensemble methods often use techniques like regularization and cross-validation





Question 9. a1@gmail.

Marks 2.00

Which of the following best describes the exploration-exploitation trade-off in reinforcement learning?

umamumamate +917060001402

> umamumamal@gm 017060001402

- The decision of how much to discount future rewards.
- The trade-off between exploring the environment to find new states and exploiting known states to get rewards.
- O The choice between using a model-based or a model-free learning approach.
- The balance between training the agent for a longer or shorter period of time. Back Done

Question 10.31@gmail.c

Marks: 2.00

In Q-learning, what is the purpose of the Q-function (Q(s, a))?

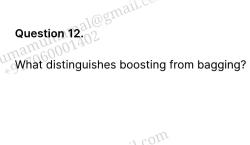
02 1@gman.

umamumamare +917060001402

umamumamal@ghi ug17060001402

- To estimate the maximum discounted future reward an agent can expect by taking action 'a' in state 's' and acting optimally thereafter.
- O To calculate the immediate reward received after taking action 'a' in state 's'.
- O To store a history of all actions taken by the agent in the environment.
 - To determine the probability of transitioning to a new state 's' after taking action 'a'.

Question 11 al@gman. Marks 2.00 Answer Which ensemble learning method is known for its feature importance Boosting calculation? Bagging Stacking Random Forest



warks & umam(106000)

Marks: 2.00

- Boosting focuses on reducing variance, while bagging focuses on reducing bias
- Boosting trains models sequentially, while bagging trains them in parallel
- Boosting combines models of different types, while bagging uses identical models
- Boosting requires a larger dataset than bagging

Question 13. Marks: 2.00

Fill your answer within the blanks provided below

An XGBoost model is trained with the hyperparameters eta=0.1, max_depth=4, subsample=0.9, and 200 rounds. How many trees are created?(round off to closest integer)

200

