**1. Which of the following methods selects features by evaluating the impact of each on a model’s accuracy?** A) Variance Threshold  
 B) Recursive Feature Elimination  
 C) Pearson Correlation  
 D) Mutual Information  
 **✅ Answer: B) Recursive Feature Elimination**

**2. Which unsupervised technique is commonly used to reduce dimensionality but not considered feature selection?** A) PCA  
 B) RFE  
 C) Chi-Square  
 D) Lasso  
 **✅ Answer: A) PCA**

**3. The main drawback of using wrapper methods for feature selection is:** A) They are inaccurate  
 B) They require data scaling  
 C) They are computationally expensive  
 D) They don’t work on categorical data  
 **✅ Answer: C) They are computationally expensive**

**4. Which method is used in Flask to accept data from a frontend via POST JSON?**

A) request.data['input']  
 B) request.input\_json()  
 C) request.form.get('input')  
 D) request.get\_json()

**✅ Answer:**  **D) request.get\_json()**

**5. What is the goal of feature selection in machine learning?** A) To select features with the highest variance  
 B) To increase the number of features  
 C) To remove redundant and irrelevant data  
 D) To increase dimensionality  
 **✅ Answer: C) To remove redundant and irrelevant data**

**6. Which technique ranks features based on how useful they are for predicting the target variable?** A) PCA  
 B) Feature Scaling  
 C) Feature Importance (from trees)  
 D) Normalization  
 **✅ Answer: C) Feature Importance (from trees)**

**7. The difference between dimensionality reduction and feature selection is:** A) Dimensionality reduction creates new features; feature selection selects existing ones  
 B) Feature selection creates new features  
 C) Both are the same  
 D) Feature selection cannot be used for model training  
 **✅ Answer: A) Dimensionality reduction creates new features; feature selection selects existing ones**

### **8. In a recommendation system, what does "implicit feedback" mean?** A) Numerical product rating B) Clicks, views, and purchase history C) User surveys D) Item description **✅ Answer: B) Clicks, views, and purchase history**

**9. Which metric is NOT commonly used to evaluate recommendation systems?** A) Precision  
 B) Recall  
 C) RMSE  
 D) F1 Score  
 **✅ Answer: D) F1 Score**

**10. In content-based filtering, recommendations are based on:** A) Items liked by similar users  
 B) Features of items the user liked before  
 C) Average item popularity  
 D) User demographics  
 **✅ Answer: B) Features of items the user liked before**

**11. Which type of recommender system is more prone to the “popularity bias”?** A) Content-based filtering  
 B) Collaborative filtering  
 C) Knowledge-based filtering  
 D) Context-aware filtering  
 **✅ Answer: B) Collaborative filtering**

**12. Which of the following is a disadvantage of content-based recommendation systems?** A) Cold start for new users  
 B) Cold start for new items  
 C) Dependency on metadata  
 D) Lack of scalability  
 **✅ Answer: C) Dependency on metadata**

**13. What is the correct route decorator for handling GET requests in Flask?**

A) @app.get('/endpoint')  
 B) @app.route('/endpoint', methods=['GET'])   
 C) @app.url('/endpoint', method='get')  
 D) @flask.route('/endpoint', 'GET')

**✅ Answer: B) @app.route('/endpoint', methods=['GET'])**

**14. In collaborative filtering, similarity between users or items is often calculated using:** A) Cosine similarity  
 B) Euclidean distance  
 C) Jaccard similarity  
 D) All of the above  
 **✅ Answer: D) All of the above**

**15. Which recommendation approach uses rule-based logic rather than machine learning or statistics?** A) Content-based filtering  
 B) Knowledge-based filtering  
 C) Collaborative filtering  
 D) Deep learning recommender  
 **✅ Answer: B) Knowledge-based filtering**