**1. Which of the following is a filter method for feature selection?** A) Recursive Feature Elimination (RFE)  
 B) Lasso Regression  
 C) Chi-Square Test  
 D) Random Forest Feature Importance  
 **✅ Answer: C) Chi-Square Test**

**2. Which feature selection technique uses a wrapper method approach?** A) Variance Threshold  
 B) PCA  
 C) Recursive Feature Elimination (RFE)  
 D) Correlation Matrix  
 **✅ Answer: C) Recursive Feature Elimination (RFE)**

**3. Which command is used to start the Flask development server?**

A) flask create-app  
 B) python flask run  
 C) flask run   
 D) python app.run()

**✅ Answer: C) flask run**

**4. Which of the following is NOT a benefit of feature selection?** A) Reduces overfitting  
 B) Improves model accuracy  
 C) Increases training time  
 D) Simplifies models  
 **✅ Answer: C) Increases training time**

**5. What is the main idea behind the "Variance Threshold" feature selection method?** A) Selects features based on correlation  
 B) Removes features with low variance  
 C) Removes features with high p-values  
 D) Selects top-k features based on accuracy  
 **✅ Answer: B) Removes features with low variance**

**6. Which of the following is a content-based filtering approach?** A) User-User Collaborative Filtering  
 B) Matrix Factorization  
 C) TF-IDF Vector Similarity  
 D) K-Means Clustering  
 **✅ Answer: C) TF-IDF Vector Similarity**

**7. In collaborative filtering, what is the key assumption?** A) Users prefer the most popular items  
 B) Users who agreed in the past will agree in the future  
 C) Items with similar content are interchangeable  
 D) Users always rate items explicitly  
 **✅ Answer: B) Users who agreed in the past will agree in the future**

**8. Which algorithm is commonly used in matrix factorization-based recommender systems?** A) KNN  
 B) PCA  
 C) SVD  
 D) Decision Tree  
 **✅ Answer: C) SVD**

**9. The cold start problem in recommendation systems refers to:** A) High computation time  
 B) Lack of user ratings for new items or users  
 C) Overfitting the model  
 D) Poor clustering of users  
 **✅ Answer: B) Lack of user ratings for new items or users**

**10. Hybrid recommendation systems combine:** A) Only content-based methods  
 B) Only collaborative methods  
 C) Content-based and collaborative filtering  
 D) Neural networks and clustering  
 **✅ Answer: C) Content-based and collaborative filtering**

**11. In which situation is feature selection least effective?** A) When the dataset has many irrelevant features  
 B) When model interpretability is important  
 C) When all features are highly informative  
 D) When dimensionality reduction is needed  
 **✅ Answer: C) When all features are highly informative**

**12.Which file must be present in a Django project to run commands like runserver or makemigrations?**

**A) main.py  
 B) init.py  
 C) manage.py   
 D) server.py**

**✅ Answer: C) manage.py**

**13. What is the main limitation of using correlation for feature selection?** A) It can’t be used on numerical features  
 B) It only works on binary classification problems  
 C) It only captures linear relationships  
 D) It is computationally expensive  
 **✅ Answer: C) It only captures linear relationships**

**14. What kind of data is primarily used in collaborative filtering systems?** A) Item metadata  
 B) User-item interaction data  
 C) Product descriptions  
 D) Image embeddings  
 **✅ Answer: B) User-item interaction data**

**15. Which of the following is true about item-based collaborative filtering?** A) It finds similarity between users  
 B) It recommends popular items to everyone  
 C) It compares items based on user ratings  
 D) It uses product categories for recommendations  
 **✅ Answer: C) It compares items based on user ratings**