Attempt #1

Jul 29, 11:21 AM

Marks: 30

**Question 1**

Correct Answer

Marks: 3/3

Which of the following is true about recommendation systems?

They can help item providers promote their items to right user

They can help identify products most relevant to the user

They can help websites improve user engagement and increase online sales

All of the above

You Selected

Recommendation systems help to recommend the products and increase user engagement by considering certain factors. It can help to identify the products most relevant to the user, help websites improve user engagement, and increase online sales. It also helps item providers promote their items to the right user.

**Question 2**

Correct Answer

Marks: 3/3

Which of the following could be the challenge(s) of recommendation systems?

A) They can end up creating an information bubble   
B) Feedback loops

Only A

Only B

Both A and B

You Selected

Neither A nor B

Information from a few users can limit the performance of the recommendation engine. It will end up creating a less flexible, and less reliable recommendation system.

Popularity bias is well-known in recommendation algorithms; a few popular items are regularly recommended while the rest of the other items are ignored. The consumers will then consume these recommendations, and their responses will be recorded and added to the system, creating a feedback loop.

**Question 3**

Correct Answer

Marks: 3/3

State whether the following statement is True or False:

Content-based recommender systems can use both user and item features for the recommendations.

True

You Selected

False

The idea of content-based recommender methods is to try to build a model, based on the available **features,** that explain the observed user-item interactions.

**Question 4**

Correct Answer

Marks: 3/3

Which of the following is an example of content-based recommendation systems?

A) Recommending movies to a user based on the information (tags, genre, description etc )of movies rated by that user in the past  
B) Recommending the most popular movies  
C) Randomly recommending movies from a list of movies

Only A

You Selected

Only B and C

Only A and C

Only B

A user-provided data is used by a content-based recommender. On the basis of this information, a user profile is created, which is subsequently used to provide recommendations to the user. Recommending movies based on previously seen movies is an example of a content-based recommendation system.

Recommending popular movies comes under the averaging recommender system.

Recommending movies randomly from a list of movies doesn't take the user input data, it will recommend based on the available movies (random choice).

**Question 5**

Correct Answer

Marks: 3/3

Which of the following are fundamental intuitions behind collaborative filtering?

A) Similar users will rate the items similarly  
B) Similar users will not rate the items similarly  
C) Similar items will be rated similarly

Only A and B

Only B and C

Only A and C

You Selected

Only A

Similar users will rate the items similarly and Similar items will be rated similarly are the fundamental intuitions behind collaborative filtering. It looks at the items they like and combines them to create a ranked list of suggestions.

Ratings for an item depending on its popularity is an example of Averaging Recommender system.

**Question 6**

Correct Answer

Marks: 3/3

Recommending items using matrix factorization can be helpful in \_\_\_\_\_:

A) Providing personalized recommendations

B) Capturing latent features of items from the user-item interaction matrix

Only A

Only B

Both A and B

You Selected

Neither A nor B

Recommending items using matrix factorization can be helpful in providing personalized recommendations. Also, matrix estimation helps to capture the latent features of items from the user-item interaction matrix.

**Question 7**

Correct Answer

Marks: 3/3

SVD can decompose a matrix A (of size m x n) into three components, namely U, V, and S, where U is an orthogonal matrix, S is a diagonal matrix, and V is an orthogonal matrix in such a way that A = U \* S \* VT. Read the below statements:

A) Dimension of U is m x r  
B) S is a square matrix of dimension r x r  
C) Dimension of VT is r x r  
D) Dimension of VT is r x n

Here, r is the rank of matrix A. Which of the above statements are correct?

Only A, B, and C

Only A and B

Only A, B, and D

You Selected

Only A and D

The dimensions of components of U, S, and V are m x r, r x r, and r x n, respectively. Here, S is a square matrix of size r x r. The dimensions of the constituent matrices are in such a way that the dimension of the product matrix is m x n, which is the same as the dimension of the original matrix.

**Question 8**

Correct Answer

Marks: 3/3

Recommending items that are similar to the items that the user has already purchased. This is an example of:

A) Item-based Collaborative Filtering

B) User-based Collaborative Filtering

Only A

You Selected

Only B

Both A and B

Neither A nor B

Item-Item Collaborative Filtering is a technique used to predict the items that a user likes based on finding similarities between items that the user had rated with that of the target items. Example: Recommending items that are similar to the items that the user has already purchased.

User-based collaborative filtering needs the data of other users who have similar tastes to that of the target user.

**Question 9**

Correct Answer

Marks: 3/3

Which of the following statements is/are true about hybrid based recommendation systems?

A) It combines both content and collaborative filtering method  
B) It usually gives good results as compared to only content-based or collaborative filtering based recommendation systems

Only A

Only B

Both A and B

You Selected

Neither A nor B

A hybrid-based recommendation system combines both content and collaborative filtering methods. It usually gives good results as compared to only content-based or collaborative filtering based recommendation systems.

Hybrid-based recommendation systems are personalized, recommend the users based on their content as well as similar users having the same taste. It is an effective technique.

**Question 10**

Correct Answer

Marks: 3/3

What is the correct order of steps to perform matrix estimation using the content-based approach?

1. Combine both estimates Lobs and LME  
2. Compute difference matrix Ldiff, where Ldiff = L - Lobs  
3. Learn a function (regressor or classifier) Fobs and obtain Lobs  
4. Use matrix estimation on Ldiff to obtain LME

Where, L is the original user-item matrix.

1, 2, 3, 4

2, 3, 1, 4

3, 2, 4, 1

You Selected

4, 3, 1, 2

The correct order of steps to perform matrix estimation using a content based approach is:

1. Learn a function (regressor or classifier) fobs and obtain Lobs  
2. Compute difference matrix Ldiff, Where Ldiff = L - Lobs  
3. Use matrix estimation on Ldiff to obtain LME  
4. Combine both estimates Lobs and LME