Recommender Systems

Assignment- Week 4

TYPE OF QUESTION: MCQ/MSQ

Number of questions: 10 **Total marks: 2×10**

QUESTION 1:

In model-based methods user ratings are used to learn a model to predict rating. Here, salient characteristics of users and items are captured by a set of model parameters, which are learned from training data and later used to predict new ratings. Association rule based approach to this category. In this approach which of model is designed to learn

a) **Which items are likely to be bought together**
b) Which items are supposed to be liked by the user
c) Rating behaviour of the user
d) Demographic profile of a user

Correct Answer: a

Explanation: Refer to Week 4 lecture 1 slide 3-7

QUESTION 2:

Which of the following interestingness represents the probability that two items are likely to be purchased together

a) Association
b) Frequency
c) Confidence
d) Support

Correct Answer: d

Explanation: Refer to Week 4 lecture 1 slide 8-9

QUESTION 3:

The SVD of a matrix M relates to the eigenvalues and vectors of which of the following matrix

a) M^TM
b) MM^T
c) Both
d) None

Correct Answer: c

Explanation: Refer to Week 4 lecture 2 slide 6

QUESTION 4:

Suppose we have rating matrix M with rows as the items and columns as the people. Suppose we get the singular value decomposition as M=PQR, where Q is the diagonal matrix containing singular values. Which of the following matrix represents the latent item features.

a) P
b) Q
c) R
d) M

Correct Answer: a

Explanation: Refer to Week 4 lecture 2 slide 4

QUESTION 5:

What is Frobenius norm of a matrix?

a) sum of all its elements squared.
b) Square root of the sum of all its elements squared
c) Square root of sum of all its elements
d) sum of all its elements

Correct Answer: b

Explanation: Refer to Week 4 lecture 3 slide 3

QUESTION 6:

While solving the error minimization function of Unconstrained Matrix Factorization problem using Stochastic Gradient Descent Algorithm, the objective is the following:

a) To capture all the error terms together for minimization
b) To consider sequentially any *n* error terms together for minimisation
c) To randomly choose a few components of the error term to for minimization.
d) To take only error term at a time for minimization

Correct Answer: c

Explanation: Refer to Week 4 lecture 3 slide 9

QUESTION 7:

Which of the following is true for a baseline predictor model.

a) It incorporates user bias, item bias, use and item latent factors
b) It incorporates user bias, user latent factor, and item bias
c) It incorporates user bias and item bias
d) It incorporates user and item latent factors

Correct Answer: c

Explanation: Refer to Week 4 lecture 4 slide 3, 4

QUESTION 8:

How can you derive a feedback matrix from the rating matrix?

a) By converting it to a matrix by making the available rating to '0' and 'NAN' wherever entries are not available.
b) By converting it to a binary matrix by making the available rating to '1' and '0' wherever entries are not available.
c) By converting it to diagonal matrix by taking assigning row average to the diagonal.
d) By converting it to diagonal matrix by taking assigning column average to the diagonal.

Correct Answer: b

QUESTION 9:

In time aware factor model which of the following variable is assumed to be invariant of time?

a) Item bias
b) User bias

c) Item characteristic

d) User characteristic

Correct Answer: c

Explanation: Refer to Week 4 lecture 5 slide 3

QUESTION 10:

How does the item-item similarity is computed in Global neighborhood model?

a) Using some distance measure

b) Learnt from the data

c) It is random value drawn from a standard normal distribution.

d) It is set as a constant

Correct Answer: b

Explanation: Refer to Week 4 lecture 5 slide 9-11

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