

(3 Hours)

Total Marks: 80

- N.B :**
1. Question No. 1 is compulsory
  2. Attempt any **three** questions from remaining five questions
  3. Assume suitable data if **necessary** and justify the assumptions
  4. Figures to the **right** indicate full marks

- Q1 Answer the Following. 20**
- A How do recommendation systems handle the cold-start problem? **05**
  - B Explain bandwagon attack with an example. **05**
  - C Explain issues in the Hybridization method of the recommendation system. **05**
  - D Show a scenario where Knowledge based recommender would be useful rather than collaborative and content RS. **05**
  - E How are knowledge-based recommender systems different from collaborative and content based recommender system? **05**
- Q2 10**
- A Summarize eleven popular tasks that are normally associated with a Recommendation System. **10**
  - B Explain User-based nearest-neighbor with an example? **10**
- Q3 10**
- A Demonstrate Architecture of content-based systems along with an example. **10**
  - B State and explain various similarity based retrieval methods for content based recommendation. **10**
- Q4 10**
- A Describe Feature combination hybrid recommendation system with an example. **10**
  - B Demonstrate constraint based recommendation problem with respect to how it is represented and solved. **10**
- Q5 10**
- A Explain different evaluation design goals for the recommender system. **10**
  - B Explain error metrics and decision support metrics in the recommendation system. **10**
- Q6 20**
- Write Short Notes. (any 4)
- A Covariance matrix. **5**
  - B Conversational Recommendation with help of an example. **5**
  - C Advantages and Disadvantages of Content based recommendation. **5**
  - D Matrix factorization and latent factors. **5**
  - E Pipelined hybridization design **5**