JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATIONS-2022

B.Tech-VI Semester (CS&IT)

COURSE CODE: 20B1WCI732   MAX. MARKS: 25

COURSE NAME: From Graph to knowledge Graph

COURSE CREDITS: 2   MAX. TIME: 1Hr 30 Min

Note: All questions are compulsory.

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1. Which of the following is true? Justify your answer? [2+ 2 Marks]

    a) RDF does not uniquely identify instances of relationships of the same type

    b) Labelled property graph have the ability to Qualify Instances of Relationships

2. Why Semantic Annotations are Essential for Business Knowledge Graph? [4 Marks]

3. Give an efficient algorithm to count the total number of paths in a directed acyclic graph. Analyze your algorithm. [4 Marks]

4. Consider a scenario where customer records are kept in a document database. The product catalog is stored in another graph database and billing information is stored in a relational database. The client does not have any knowledge of the multiple backend systems. All of the above database are accessed transparently when a client application or user requests a query. Comment on the role of knowledge graph in building such systems. [4 Marks]

5. Show that the chromatic number of a graph equals the maximum of the chromatic numbers of its components. [3 Marks]

6. Compute the clique number, the independence number, and the chromatic number of the graph shown in Figure A. [3 Marks]

7. Determine the edge chromatic number and draw line graph for the graph shown in Figure B. [3 Marks]
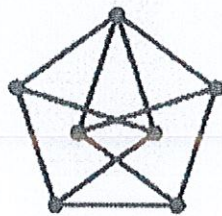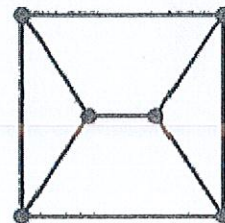

Figure A

Figure B