

Code No: 07A81201

R07**Set No. 2**

IV B.Tech II Semester Examinations, April/May 2012
MULTIMEDIA DATABASES
Information Technology

Time: 3 hours**Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

1. (a) What is a constraint language? Explain temporal constraints.
 (b) Explain the terms retrieval scheduler and constraint relation in multimedia databases. [8+8]
2. (a) Explain the structured multimedia database system.
 (b) Write short notes on TC-SMDS. [8+8]
3. Write Short notes on the following:
 - (a) Latent Semantic Indexing
 - (b) TV-Trees. [8+8]
4. (a) Draw the class diagram of the state-park example.
 (b) Differentiate primary key and foreign key with an example. [8+8]
5. (a) Explain about Video Segmentation. What are the various video composition operations?
 (b) Explain about Video Standards. [8+8]
6. (a) Briefly explain about Transformation approach with suitable example.
 (b) Write notes on Raw Images. [8+8]
7. Express the following queries in SQL.
 Country(Name: varchar(35),Cont: varchar(35), Pop: integer,GDP: integer, Life-Exp: integer,Shape: char(13))
 City(Name: varchar(35),Country: varchar(35), Pop: integer,Capital: char(1),Shape: char(9))
 River(Name: varchar(35),Origin: varchar(35), Length: integer, Shape: char(13))

Country	Name	Cont	Pop (milliond)	CDP (billions)	Life-Exp	Shape
	Canada	NAM	30.5	658	77.08	Polygonid-1
	Mexico	NAM	107.5	694.3	69.36	Polygonid-2
	Brazil	SAM	183.3	1004	65.6	Polygonid-3
	Cuba	NAM	11.7	16.9	75.95	Polygonid-4
	USA	NAM	270	8003.4	75.75	Polygonid-5
	Argentina	SAM	36.3	348.2	70.75	Polygonid-6

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City	Name	Country	Pop (milliond)	Capital	Shape
	Havana	Cuba	2.1	Y	Pointid-1
	Washington, D.C.	USA	3.2	Y	Pointid-2
	Monterrey	Mexico	2	N	Pointid-3
	Toronto	Canada	3.4	N	Pointid-4
	Brasilia	Brazil	1.5	Y	Pointid-5
	Rosario	Argentina	1.1	N	Pointid-6
	Ottawa	Canada	0.8	Y	Pointid-7
	Mexico City	Mexico	14.1	Y	Pointid-8
	Buwnos Aires	Argentina	10.75	Y	Pointid-9

RIVER	Name	Origin	Length (kilometers)	Shape
	Rio Parana	Brazil	2600	LineStringid-1
	St. Lawrence	USA	1200	LineStringid-2
	Rio Grande	USA	3000	LineStringid-3
	Mississippi	USA	6000	LineStringid-4

- (a) List all countries that are in North America or whose capital cities have a population of less than 5 million.
- (b) Find the country with the second highest GDP. [8+8]
8. Explain the range queries of MX- Quad tree also write its algorithm. [16]

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1. (a) Explain the 3 key steps for inserting a new vector V into a TV - tree.
(b) How do we say documents are similar based on Frequency Table? Explain. [8+8]
2. Write in ODL, a definition for a class called Word document. Mention the attributes and relationships. [16]
3. (a) Explain Object-Relational SQL?
(b) Explain Object-Relational Schema with example? [8+8]
4. Explain the simple and structured multimedia database? [16]
5. (a) Explain Directional, Metric Space, Euclidean for Topological Operations?
(b) Explain Focal operations and Zonal operations in Field based model? [8+8]
6. (a) Explain about Homogeneity predicate with example.
(b) Write about Metric Approach. [8+8]
7. Give the detailed iterations for the intermediate steps during the execution of Bellman Ford algorithm. [16]
8. (a) Give a sample audio data segments.
(b) Explain how using Metadata to represent Audio Content. [8+8]

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1. (a) What is the use of presentation engine in multimedia databases.
 (b) Define multimedia querying and explain. [8+8]
2. (a) Discuss pictogram, shape & derived shape.
 (b) Discuss spatial data types. [8+8]
3. (a) What is a retrieval scheduler in multimedia databases? Explain.
 (b) What is a constraint relation in multimedia databases? Explain. [8+8]
4. Explain k-d trees with examples. [16]
5. Express the following queries in SQL
 Country(Name: varchar(35),Cont: varchar(35), Pop: integer,GDP: integer, Life-Exp: integer,Shape: char(13))
 City(Name: varchar(35),Country: varchar(35), Pop: integer,Capital: char(1),Shape: char(9))
 River(Name: varchar(35),Origin: varchar(35), Length: integer, Shape: char(13))

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- (a) List the name, population, and area of each country listed in the country table.
- (b) List the length of the rivers in each of the countries they pass through. [8+8]
6. (a) Write notes on Homogeneity predicate.
- (b) Explain about Alternative Image DB paradigms. [8+8]
7. (a) How to perform indexing Audio Data? Explain.
- (b) Audio data plays an important role in many applications. Explain with an example. [8+8]
8. (a) Write about Nearest Neighbor Retrievals in TV-Trees?
- (b) Using suitable example explain the insertion procedure in TV-Trees. [8+8]

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1. How to specify multimedia documents with temporal constraints? Explain. [16]
2. Explain the following terms:
 - (a) Frame sequence
 - (b) Well - ordered Frame sequence
 - (c) Solid Frame sequence
 - (d) Partial Ordering. [4+4+4+4]
3. How to represent image DBs with R-trees? Explain with example. [16]
4. "The content of multimedia data source is often independent of source itself". Explain. [16]
5. (a) What do you mean by Precision and Recall? Explain.
 (b) What is text database? Give example. [8+8]
6. Express the following queries in relational algebra.
 Country(Name: varchar(35), Cont: varchar(35), Pop: integer, GDP: integer, Life-Exp: integer, Shape: char(13))
 City(Name: varchar(35), Country: varchar(35), Pop: integer, Capital: char(1), Shape: char(9))
 River(Name: varchar(35), Origin: varchar(35), Length: integer, Shape: char(13))

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- (a) Find all cities that are either in South America or whose population is less than two million.
- (b) List all cities which are not in South America. [8+8]
7. Spatial data is sometimes consider a special case of multidimensional data that is, data embedded in multi dimensional space.compare and contrast spatial data embedded in Euclidean space with other multi dimensional data. [16]
8. Describe the algorithms for Insertion and Search in case of 2-d trees. [16]
