IT106405

B.Tech.-4th Semester Examination Apr-May 2022

Branch: Information Technology

Course: Database Management System

Maximum Marks: 100

Time Allowed: 3 Hours **Minimum Marks: 35**

Note: ***Attempt all questions. Part (a) from each question is compulsory and carries 4 marks, attempt any two parts from part (b), (c) and (d) carrying 8 marks each. Write UNIT NUMBER and QUESTION NUMBER for each answer clearly.***

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Q. No		Questions	Marks	CO	BL	PI
Q.1	a)	Define primary key and candidate key?	4	CO1	L1	1.7.1
	b)	Differentiate between file system and database system?	8	CO2	L2	1.2.1
	c)	What is ER model? Design an ER model for hospital management system?	8	CO1	L2	2.5.2
	d)	Write a short notes on : (i) Aggregation (ii) Generalization (iii) Extended ER model	8	CO1	L2	1.2.1
Q.2	a)	Write about 4 DDL command?	4	CO2	L2	1.2.1
	b)	Differentiate between Relational algebra and Relational Calculus with example?	8	CO2	L5	1.2.1
	c)	Explain cursor, trigger and index in brief?	8	CO2	L1	2.8.2
	d)	What do you mean by constraints in DBMS? Write about various constraints use in DBMS?	8	CO2	L1	1.3.1
Q.3	a)	What is functional dependency (with example)?	4	CO3	L3	5.4.1
	b)	What is normalization? Explain different normal forms?	8	CO3	L1	1.3.1
	c)	Write a short notes on: (i) MVD (ii) Lossless join decompositions	8	CO3	L4	1.2.2
	d)	Normalize the following relation till 3NF? SID CID S_name C_name Grade Faculty F_phone 1 IS318 Adams Database A Howser 60192 1 IS301 Adams Program B Langley 45869 2 IS318 Jones Database A Howser 60192 3 IS318 Smith Database B Howser 60192 4 IS301 Baker Program A Langley 45869 4 IS318 Baker Database B Howser 60192	8	CO3	L2	1.3.1
Q.4	a)	What are ACID properties of a transection?	4	CO4	L4	1.2.1
	b)	Explain about conflict serializability and view serializability?	8	CO4	L2	1.2.1
	c)	Write is log-based recovery techniques? Describe immediate update technique for database recovery?	8	C04	L1	1.2.1
	d)	Write short notes on: (i) Checkpoints (ii) Deadlock handling	8	CO4	L4	1.2.1
Q.5	a)	What do you mean by multiple granularity?	4	CO5	L5	1.1.1

	b)	**What do you mean by concurrency control in DBMS? Explain different types of concurrency control techniques?**	**8**	**CO5**	**L1**	**1.3.1**
	c)	**Explain timestamp ordering protocol for concurrency control and Multi version techniques?**	**8**	**CO5**	**L1**	**1.3.1**
	d)	**What are the different indexing techniques uses in DBMS?**	**8**	**CO5**	**L5**	**3.1.6**

CO- Course Outcomes, BL– Bloom's Taxonomy, PI– Performance Indicator

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