

07/10/2017

F.Y. I T Sem-II 2017-18

FYIT-SEMII-DBMS - 2^{1/2} Hrs. - 75marks

Note: i) All questions are compulsory.

ii) Figures to the right indicates full marks.

Q.1 Attempt any two.

[10]

- a) Explain the three-tier client/server architecture. Where it is used?
- b) What do you mean by data abstraction? Also explain different views of data.
- c) What is the role of DBA?
- d) Explain all types of database users.

Q.2 Attempt any two.

[10]

- a) Explain the importance of data model.
- b) Explain different types of data models.
- c) What is the process of evolution of data model?
- d) What are the different degrees of data abstraction?

Q.3 Attempt any two.

[10]

- a) What is Unified Modelling Language? Explain Class Diagram and Use Case Diagram.
- b) Write a short note on Primary Key Constraint and Foreign Key Constraint.
- c) Explain different types of mapping cardinalities used in ER model.
- d) What are the features of good relational database design.

Q.4 Attempt any two.

[10]

- a) Explain tuple relational calculus.
- b) How to perform a join and renaming using relational algebra?
- c) Differentiate calculus versus algebra.
- d) Write a short note on Relational Algebra.

Q.5 Attempt any two.

[10]

- a) What do you mean by a subquery? Give query example of it.
- b) What are views? How views provide security of data?
- c) Explain all aggregate functions used in SQL.
- d) Consider following tables:

Student (rollno, sname, marks, city, classid)

Class(classid, classname, capacity)

Solve following queries:

- i) Display student details having marks is in the range of 70 to 80.
- ii) Create a view showing the details of student enrolled in each class.
- iii) Display student details along with their class details in which they enrolled.

Q.6 Attempt any two.

[10]

- a) Write a short note on Transaction state.
- b) Explain Timestamp Ordering Protocol.
- c) What do you mean by serializability? Explain view serializability.

d) Explain Two Phase Locking protocol.

[15]

Q.7 Attempt any Three.

- a) How a database approach differs from the traditional file system?
- b) Write a short note on Business Rules.
- c) Construct an E-R diagram for a hospital with a set of patients and a set of medical doctors. Associate with each patient a log of the various tests and examinations conducted.
- d) Write a short note on domain relational calculus.
- e) What do you mean by Join? Explain Right Outer Join and Full Outer Join with proper example.
- f) Write a short note on deadlock. Explain deadlock prevention schemes.

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