B. N. BANDODKAR COLLEGE OF SCIENCE, THANE

F.Y.B.Sc. (INFORMATION TECHNOLOGY) SEMESTER – II EXAMINATION; APRIL 2015

COURSE CODE– USIT204

Duration: 2½ Hrs **Total Marks: 75**

N.B. 1. All questions are compulsory.

Q. 1 **Answer *any two* out of following** **10**

a What is database system? What is the purpose of building database management system?

b Differentiate between database systems and file system.

c Explain the different types of database users.

d Define the following terms

i. Tuple ii. Primary Key iii. Foreign key iv. Attribute v. Domain

Q. 2 **Answer *any two* out of following** **10**

a Explain the Hierarchical database model in detail.

b Discuss merits and demerits of relational model.

c Write note on Business Rules.

d Explain the Network database model in detail.

Q. 3 **Answer *any two* out of following** **10**

a Write note on Activity diagram.

b Explain the features of relational database design.

c Discuss entity integrity and referential integrity in brief.

d Explain normal form? What are the types of Normal forms?

Q. 4 **Answer *any two* out of following** **10**

a With an example, explain Selection operation and projection operation.

b Explain any two Binary operations with example.

c Explain the Join operator with an example.

d Give comparison between relational algebra and relational calculus.

Q. 5 **Answer *any two* out of following** **10**

a What is constraint? What are the types of constraints?

b What is view? Give the comparison between tables and views.

c What is SQL? Explain the features of SQL.

d Explain the following aggregate functions in SQL

i. AVG() ii. COUNT() iii. MAX() iv. MIN() v. SUM()

Q. 6 **Answer *any two* out of following** **10**

a What is transaction? Explain Commit and Rollback statements with an example.

b Explain Atomicity and consistency of transaction

c Draw and explain transaction state diagram.

d Write note on Serializability.

Q. 7 **Answer *any three* out of following** **15**

a Write in detail about SQL.

b Explain the need for data model.

c Write note on Normalization.

d Write note on Domain Relational Calculus.

e Write SQL statement to Create, modify and delete the table.

f Explain durability and isolation of transaction.

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