

DATABASE SYSTEM

YEAR 2 SEMESTER 1

CAT 1 2015

ICS 2206

1. Define the following terms as used in database systems

(i) Entity integrity (2 marks)

(ii) Data redundancy (2 marks)

(iii) Serializability (2 marks)

(iv) Database (2 marks)

2. Write SQL statements that will:

i. Create the student table (4 marks)

ii. Update the first name of the student whose student registration number is 0045. (2 marks)

iii. Count the number of female students in the school IT and engineering (2 marks)

iv. Output the names of all students and the names of the courses they pursue. (2 marks)

3. Define the term database design and give the effects of a poor database design. (5 mks)

4. Explain 5 components of a database system (5 mks)

5.a) Differentiate between relational database and relational database management system (4 mks)

b) Give 3 reasons why relation data model is important in data handling (1 ½ mks)

6. What are the three types of database critical events that can trigger the database recovery process? Give some examples for each one. (9 Marks)

7. "Normalization does not eliminate data redundancy; instead it produces the carefully controlled redundancy that let us properly link database tables: Describe when a table is said to be in

i. 1NF (2 mks)

ii. 2NF (2 mks)

iii. 3NF (2 mks)

iv. BCNF (2mks)

8. What is the role of the following in a database environment?

i. File manager (2mks)

ii. Database manager (2mks)