



KENYATTA UNIVERSITY
UNIVERSITY EXAMINATIONS 2010/2011
FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF
SCIENCE (COMPUTER ENGINEERING)
SCE 212: DATABASE MANAGEMENT SYSTEMS

DATE: FRIDAY 26TH NOVEMBER 2010 TIME: 8.00 A.M. - 10.00 A.M.

INSTRUCTIONS

Answer Questions ONE and any other 2 Questions.

Question 1

- (a) Define the following terms
 - i) Database
 - ii) Database Management System
 - iii) Data Mining
 - iv) Data warehousing **(4 Marks)**
- (b) What is normalization? Describe the various normalization forms and reason why normalization is important. **(8 Marks)**
- (c) Outline and explain six advantages of databases. **(6 Marks)**
- (d) State and explain the advantages and disadvantages of distributed databases. **(10 Marks)**
- (e) Discuss four applications of data mining. **(2 Marks)**

Question 2

- (a) Explain the benefits of data warehousing in an organization. **(3 Marks)**
- (b) Identify the problems of data warehousing. **(5 Marks)**
- (c) Discuss five possible threats of a database. **(5 Marks)**
- (d) State and explain two design issues in distributed DBMS. **(2 Marks)**

Question 3

- (a) Below is an internal jobsheet used by DEMICO company Ltd.
Produce the relations.

Job number	A1199
Customer number	11233
Customer name	P. Adams
Customer address	111 West Avenue Newtown
Customer's order number	B1246
Customer's order date	28 th January
Required by	28 th february

Department	Department code	Time for this job	Department cost per hour	Department total cost
Typesetting	T	3hrs	4.00	12.00
Printing	P	1hr	3.50	3.50
Binding	B	2hrs	2.00	4.00
Cutting	C	1hr	1.00	1.00
Finishing	F	2hrs	1.50	3.00

Total job cost 23.50

(10 Marks)

- (b) Write SQL statements which be used to create the relations.

(5 Marks)

Question 4

- (a) Describe the functions of a database administrator. **(6 Marks)**
 (b) Distinguish between data mart and data warehousing. **(4 Marks)**
 (c) With of a suitable diagram differentiate between hierarchical and a network database model.

(5 Marks)

Question 5

Patients are treated in single ward by doctors assigned to them. Usually each patient will be assigned a single doctor but in rare cases 2. Health assistants also attend to the patients a number of these are associated with each ward. Initially the system will be concerned solely with drug treatment. Each patient is required to take a variety of drugs a certain number of times per day and for varying lengths of time. The system must record details concerning patients' treatment and staff payment. Some staff are paid part time and doctors and care assistants work varying amounts of overtime at varying rates. The system will also need to track what treatments required for each patient and should be capable of calculating the cost of treatment per week for each patient.

Required:

- i) Identify the entities
 ii) Define the relationships
 iii) Develop an ERD(entity relationship diagram) **(15 Marks)**