

UGANDA MARTYRS UNIVERSITY

UNIVERSITY EXAMINATIONS

FACULTY OF SCIENCE

BSC (IT, FM) FINAL EXAMINATION

DEPARTMENT OF COMPUTER SCIENCE AND INFORMATION SYSTEMS

DATABASE PLANNING, DESIGN AND MANAGEMENT

SECOND YEAR EXAMINATION FOR BSC (Information Technology & Financial Maths)

DATE: Thursday December 12th, 2013

TIME: 2.00 – 5.00 PM

Instructions:

Attempt five questions only. All questions carry 20 marks each.

DO NOT OPEN THIS BOOKLET UNTIL TOLD TO DO SO

1. (a) What is an Information System (IS)? (2 marks)
- (b) Explain in what ways the following Systems qualify as major types of ISs widely used in business organizations today.
- i. Transaction Processing Systems (4 marks)
 - ii. Management Information Systems (5 marks)
 - iii. Decision Support Systems (5 marks)
 - iv. Executive Information Systems (4 marks)
2. (a) What is a Database and how does it increase the productivity of workers? (5 marks)
- (b) Explain five uses of database applications in business organizations. (15 marks)
3. (a) What is a Database Management System (DBMS)? (2 marks)
- (b) Describe the main type of functions that can be provided by any DBMS. (18 marks)
4. Explain the advantages of a DBMS approach over a File Based System (FBS) approach with respect to the following:
- (a) Data redundancy (4 marks)
 - (b) Data Integrity (4 marks)
 - (c) Data sharing (4 marks)
 - (d) Security (4 marks)
 - (e) Backup and Recovery (4 marks)
5. (a) Describe the two tier and three tier database architectures. (12 marks)
- (b) Point out the advantages of the three tier database architecture over the two tier database architecture. (8 marks)
6. (a) Compare the Client-Server Architecture and File-Server Architecture as a way of distributing work between machines. (12 marks)
- (b) Point out four advantages of the Client-Server Architecture over the File-Server Architecture. (8 marks)
7. Outline the activities associated with each of the following stages of the Database Application Lifecycle. (3 marks)
- (a) Database Planning

- (b) Requirements Collection and Analysis (5 marks)
 - (c) Database Design (5 marks)
 - (d) Application Design (3 marks)
 - (e) Implementation (4 marks)
8. Explain the role of the following people during the development of a Database Application.
- (a) Data Administrator (5 marks)
 - (b) Logical Database Designer (4 marks)
 - (c) Physical Database Designer (5 marks)
 - (d) Database Administrator (3 marks)
 - (e) Application developer (3 marks)

END