

# UGANDA MARTYRS UNIVERSITY

## NKOZI

### UNIVERSITY EXAMINATIONS

#### FACULTY OF SCIENCE

### DEPARTMENT OF COMPUTER SCIENCE AND INFORMATION SYSTEMS

Advanced Information Systems and E-commerce (3204)

**BAM III Nkozi & Rubaga**

DATE: Tuesday 3<sup>rd</sup> May 2016

TIME: 9.30am - 12.30 pm

DURATION: 3 hrs

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**Instructions:**

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1. Carefully read through ALL the questions before attempting
  2. **ANSWER ALL QUESTIONS IN SECTION A**
  3. **ANSWER ANY THREE (3) QUESTIONS IN SECTION B**
  4. No names should be written anywhere on the examination book.
  5. Ensure that your **Registration Number** is indicated on all pages of the examination answer booklet.
  6. Ensure your work is **clear and readable**. Untidy work shall be penalized
  7. Any type of examination Malpractice will lead to automatic disqualification
  8. Do not write anything on the questions paper.
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## SECTION A

(40 MARKS - ATTEMPT ALL QUESTIONS)

### Question 1

\_\_\_\_\_ is a property of an object

- A. DBMS      B. Attribute      C. Table      D. Entity

### Question 2

\_\_\_\_\_ is a candidate key that is not selected as a primary key

- A. Alternate key      B. Primary key      C. super key      D. Composite key

### Question 3

A candidate key that is not selected to be a primary key is a

- A. Alternate key      B. Primary key      C. Candidate key      D. Composite key

### Question 4

The number of rows in a table is known as the

- A. Binary      B. Participation      C. Cardinality      D. Degree

### Question 5

The following is an example of a topology

- A. IMAP      B. HTTP      C. BUS      D. BLOG

### Question 6

A computer that is served by another computer is known as the

- A. Client      B. de-centralized      C. Server      D. LAN

### Question 7

A network used to share data among employees and several trusted third parties is

- A. An extranet      B. An intranet      C. LAN      D. WAN

### Question 8

A father booking travel tickets for his son is an example of which form of e-commerce

- A. B2G      B. B2C      C. B2B      D. C2C

### Question 9

The school administration does not know the birth-date of a student neither the age. What type of value should be stored in the database?

- A. Today's date      B. Null value      C. Derived value      D. Composite value

### Question 10

A major dis-advantage of an organisation building rather than buying a software system is it

- A. Costs less      B. Quicker to deploy      C. Meets all requirements      D. None of these

### Question 11

"Get me the date attribute of the third tuple in the sales order relation." What is being requested?

- A. the third table related to sales order      B. the value in the date field of the third sales order  
A. the value in the date field in the third row of the sales order item table      D. None of the above

### Question 12

In the OSI model the \_\_\_\_\_ is the layer furthest from the presentation medium

- A. physical      B. data link      C. network      D. transport

**Question 13**

In the OSI model the \_\_\_\_\_ lies between the session layer and network layer

- A. physical      B. Data link      C. network      D. None of these

**Question 14**

In a network when data is transmitted from computer A to computer B the data added by A's OSI layer four (5) is read by B's \_\_\_\_\_ layer

- A. session      B. transport      C. application      D. None of these

**Question 15**

In the OSI model as data packets move from upper layer to lower layer headers are

- A. added      B. removed      C. modified      D. re-arranged

**Question 16**

E-commerce is defined as

- A. Electronic supporting of business transactions      B. Buying and selling of goods and services electronically  
C. Supporting business processes electronically      D. Buying and selling of goods and services

**Question 17**

This is an example of a tag in HTML

- A. <Title>      B. <head>      C. <B>      D. All of these

**Question 18**

In relational algebra displaying the desired columns only is achieved by

- A. selection      B. projection      C. Cartesian product      D. set difference

**Question 19**

The attribute *total* could be structured as an attribute holding the sum of six numbers stored in a database.

This type of attribute is known as

- A. Multi-valued      B. Simple attribute      C. Derived attribute      D. Composite attribute

**Question 20**

The attribute holding the name of a district is best defined in a database as

- A. Multi-valued      B. Simple attribute      C. Derived attribute      D. Composite attribute

**Question 21**

Which of the following cannot be a multivalued attribute?

- A. Course units      B. Hobby      C. Date\_of\_birth      D. All of the mentioned

**Question 22**

A sale in a supermarket database can be identified as a \_\_\_\_\_

- A. Physical Entity      B. Conceptual entity      C. Identifier      D. Relationship

**Question 23**

Which of these is not an entity?

- A. staff      B. book      C. borrows      D. student

**Question 24**

Pick the meaningful process in terms of data flow diagrams

- A. vendor supplies goods      B. Generate sales report      C. Customer details  
D. prices of goods

**Question 25**

Entity type that is not existence-dependent on some other entity type is a \_\_\_\_\_ entity

- A. weak      B. conceptual      C. strong      D. none of these

**Question 26**

The columns in a relation \_\_\_\_\_

- A. must be in specified order      B. may be in any order      C. in ascending order of key  
D. in descending order of key

**Question 27**

Given two relations, the \_\_\_\_\_ operation allows find tuples that are in both relations

- A. Union      B. Set-difference      C. Difference      D. Intersection

**Question 28**

A context diagram shows:

- A. The overview of the system      B. Processes in a system      C. Data stored in the system      D. Issues in a system

**Question 29**

If E1 and E2 are relations, then which of the following represents a set difference operation?

- A.  $E1 \cup E2$       B.  $E1 \cap E2$       C.  $E1 - E2$       D. All

**Question 30**

An operation on relation X, produces relation Y, such that relation Y contains only selected columns of relation X. This operation is:

- A. Projection      B. Intersection      C. Union      D. Set Difference

**Question 31**

Which of the following is not a valid binary operation in the relational algebra

- A. Projection      B. Union      C. Set difference      D. Cartesian product

**Question 32**

A \_\_\_\_\_ is a device that forwards packets between networks by processing the path information included in the packet.

- A. Bridge      B. Firewall      C. Router      D. All of the mentioned

**Question 33**

A computer network is

- A. Collection of hardware components and computers      B. Interconnected communication channels  
C. Computers sharing resources and information      D. All the above

**Question 34**

\_\_\_\_\_ is a minimal super key but not a primary key

- A. Candidate key      B. Super key      C. Alternate key      D. All mentioned

**Question 35**

A \_\_\_\_\_ is not a Super Key

- A. Primary Key      B. Candidate key      C. Alternate key      D. None of these

**Question 36**

The first step in the systems development life cycle (SDLC) is:

- A. Analysis.      B. Design.      C. Problem/Opportunity Identification      D. Development and Documentation.

**Question 37**

\_\_\_\_\_ is a network that connects people within the organisation only

- A. Internet      B. Intranet      C. Extranet      D. Routers

**Question 38**

Technical writers generally provide the \_\_\_\_\_ for the new system.

- A. Programs      B. Network      C. Analysis      D. documentation

**Question 39**

Data store in a DFD represents.

- A. a sequential file      B. a disk store      C. a repository of data      D. a random access memory

**Question 40**

A common reason for changing an information system is

- A. New requirements      B. New technology      C. Problems in the existing system      D. All of these

**SECTION B**

**(60 MARKS - ATTEMPT ONLY THREE (3) QUESTIONS)**

**Question One**

In a given electronic commerce system, company are required to register their businesses with the system before they use it. These owners need to provide information about their businesses like name, type, id and so on. The owners of the businesses are also supposed to present their name, gender, qualification and so on. After registration of the business, then the system allows customers to access it and know the services provided by the registered businesses. The customers can make payments, view products, request for a receipt and so on using the system. The business that owns this system can view sales made, products displayed, registered businesses and so on.

Use the above information only to answer the questions that follow:

- Identify all the entities and their attributes in the above paragraph. (5 marks)
- Identify the processes in made by the system in order to provide services to its users. (5 marks)
- Identify external entities (those people that interact with the system) (5 marks)
- Identify any relationships in the above system. (5 marks)

(10 marks)

**Question Two**

- Every e-business is e-commerce and every e-commerce is e-business. Disagree with this assertion. (10 marks)
- Differentiate between an Information system for e-commerce and an information system for e-business. (10 marks)

**Question Three**

- What do you understand by the term systems Development lifecycle? (7 marks)
- State and briefly explain the tasks that are done in the systems analysis stage of the systems development life cycle. (7 marks)
- Why is a mobile money system an information system? (6 marks)

**Question Four**

- State and explain what an information system created to support sales and marketing would help top management to accomplish. (7 marks)
- State what such a system in (a) above would help operational managers to do. (7 marks)
- Draw a sample sales report that such a system in (a) above would provide. (6 marks)

### Question Five

Define the following terms in relation to information systems

- a) Database Management System    b) alternate key    c) Computer Network    d) Duplex communication

Given the relation TB1 below answer the given questions

TB1

sNo	gender	yOB	mStatus	district
K89	M	1978	Married	Gulu
P67	F	2008	Single	Kampala
R45	M	1998	Single	Wakiso
Y32	M	1998	Married	Kampala
J23	F	2002	Single	Masaka
F65	M	1980	Widow	Jinja
T88	F	2004	Devorced	Jinja
T57	F	2000	Married	Wakiso
P88	M	2004	Single	Kampala
K11	M	1975	Widow	Gulu
T42	M	1999	Married	Kampala
R78	F	2001	Single	Jinja

Give the relations that will result from the following Relational Algebra expressions

- a)  $\Pi_{sNo, district}(\sigma_{yOB < 2000 \text{ and } mStatus = Single}(TB1))$     b)  $\sigma_{yOB > 2002 \text{ and } district = Kampala}(TB1)$   
c)  $\Pi_{gender, mStatus}(\sigma_{gender = M}(TB1))$     ( 12 marks)

### Question Six

Explain the characteristics and suitable deployment and use of the following

- a) Executive support Systems (5 marks)  
b) Knowledge work systems (5 marks)  
c) With examples give the difference between Management Information Systems and Decision Information Systems (5 marks)  
d) Briefly explain the benefits of introducing computer information systems in an organisation (5 marks)

END