MURANG'A UNIVERSITY OF TECHNOLOGY

SCHOOL OF COMPUTING AND INFORMATION TECHNOLOGY

DEPARTMENT OF INFORMATION TECHNOLOGY

UNIVERSITY ORDINARY EXAMINATION

2018/2019 ACADEMIC YEAR

FOURTH YEAR **FIRST** SEMESTER EXAMINATION FOR, BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY

SIT 404 – CLIENT SERVER SYSTEMS

DURATION: 2 HOURS

DATE:
TIME:

Instructions to candidates:

1. Answer question One and Any Other Two questions

2. Mobile phones are not allowed in the examination room.

3. You are not allowed to write on this examination question paper.

SECTION A: ANSWER ALL QUESTIONS IN THIS SECTION

QUESTION ONE (30 MARKS)

a) Define the following terms in relation to client server computing.   (4 Marks)
   i. Client
   ii. DHCP
   iii. Remote Procedure call
   iv. Dynamic Data Exchange

b) In the modern World Organization that range in size from Microsoft, Barclays bank and Boeing to local art/craft and flower shops are shifting their conduct of business to online platform. There are driving forces towards this shift and are in relation to business and technological perspective. Explain Four (iv) business and Three (iii) technological driving forces towards this move.   (6 Marks)

c) The components of the client/server architecture must conform to some basic principle if they are to interact properly. Describe five (5) principles that client/server systems that most current generation client/server systems are built upon.   (6 Marks)

d) Client/server database computing is preferred to other types of database computing. Explain FIVE reasons why their popularity has risen over time.   (5 Marks)

e) Client/ server application can be distinguished by the nature of the service or type of solutions they provide. Explain the five (5) most common types of solutions that they offer.
(5 Marks)

f) In three-tier client/server system the client requests are handled by intermediate servers which coordinate the execution of the client request with subordinate servers. With the help of suitable diagram describe three-tier architecture.   (4 Marks)

SECTION B – ANSWER ANY TWO QUESTIONS IN THIS SECTION

QUESTION TWO (20 MARKS)

a) Computing in client server architecture over mainframe architecture has certain advantages and disadvantages. Describe at least two advantages and disadvantages for each architecture. (8 Marks)

b) Interaction between client and server is in the form of transaction in which client makes database request and receives a database response. In the architecture of such a system, server is responsible for maintaining the database, for that purpose a complex database management system software module is required. With aid of diagrams describe the three client/server database architecture that are available today.
   i.   Process-per-client architecture.   (3 Marks)
   ii.   Multi-threaded architecture   (3 Marks)
   iii. Hybrid architecture.   (3 Marks)

c) List any three (3) advantages associated with use of transaction processing monitors.
                                                                   (3 Marks)

QUESTION THREE (20 MARKS)

a) A client/server topology refers to the physical layout of the client/server network in which all the client and server are connected to each other. Describe the three existing topologies for client server systems using diagrams.   (9 Marks)

b) Compare and contrast the system administrator training, database administrator training and end user training.   (6 Marks)

c) The enabling technologies for client/server computing have evolved over time. Explain the following technologies that make it possible to create different kinds of client/server applications.   (5 Marks)
   i.   Expert systems
   ii.   Point-of-services (POS)
   iii. Imaging
   iv.   Intranet
   v.   Extranet

QUESTION FOUR (20 MARKS)

a) A plan is normally developed before starting the design and development of client server system. The objective of the plan is to build and obtain end user and managerial support for the future client/server environment. Describe the six main phases that are part of the plan to enable development of client/server systems. (10 Marks)

b) There are various types of characterizing client/server application depending on the database applications. With aid of diagrams explain the four classes of client/server application processing. (10 Marks)