



*(Knowledge for Development)*

**KIBABII UNIVERSITY**

**UNIVERSITY EXAMINATIONS  
2019/2020 ACADEMIC YEAR**

**END OF SEMESTER EXAMINATIONS  
YEAR TWO SEMESTER TWO**

**FOR THE DEGREE OF  
COMPUTER SCIENCE**

**COURSE CODE : CSC 226**

**COURSE TITLE : CLIENT-SERVER  
COMPUTING**

**DATE: 03/02/2021 TIME: 2.00 P.M – 4.00 P.M**

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**INSTRUCTIONS TO CANDIDATES**

**ANSWER QUESTIONS ONE AND ANY OTHER TWO.**

### QUESTION ONE [COMPULSORY] [30 MARKS]

- a) Differentiate between the following terms
- i. Centralized and distributed computing [2 marks]
  - ii. Database schema and database state [2 marks]
- b) Describe important characteristics of client server computing model [5 marks]
- c) Is it always beneficial to go for client-server computing? Identify applications where it is not recommended to use client-server computing. [8 marks]
- d) Discuss some of the ways to improve performance in a client server developed applications. [6 marks]
- e) Explain any two- prominent distributed object technologies applied in computing today. [2 marks]
- f) Write a javascript program to display a page with the following output using min ( ) method. [5 marks]

Output

First Test Value : -1
Second Test Value : -40
Third Test Value : -1
Fourth Test Value : 100

### QUESTION TWO [20 MARKS]

- a) What is CORBA? [3 marks]
- b) CORBA can deal with homogeneous and heterogeneous environments. Identify the main characteristics in support of heterogeneous systems. [5 marks]
- c) Describe the RPC model, highlighting its advantages over the ordinary procedure call model. [5 marks]
- d) Describe relative merits and demerits of networks operating system as compared to the centralized operating system. [7 marks]

### QUESTION THREE [20 MARKS]

- a) What is meant by object linking and embedding (OLE)? [2 marks]
- b) Describe the common object request broker architecture. [8 marks]
- c) Explain the CORBA event, notification and security services. [6 marks]
- d) A Transaction Processing Monitor is a program that controls data transfer between client and server in order to provide consistent environment, particularly for online transaction processing (OLTP). Identify and explain any four advantages associated with TP monitors. [4 marks]

### QUESTION FOUR [20 MARKS]

- a) Differentiate between Servlet and LiveScript? [2 marks]
- b) Write a program to demonstrate how to play a sound using an applet image using getAudioClip(), play() & stop() methods of AudioClip() class. [9 marks]
- c) Why would one opt to use Servlets over CGI programs? [5 marks]
- d) Access modifier is used to determine the visibility and scope of the java elements. Outline the types of access modifiers. [4 marks]

### QUESTION FIVE [20 MARKS]

- a) Discuss the following protocols:
  - (i) Token Ring protocol [2 marks]
  - (ii) FDDI [2 marks]
- b) Discuss the functionality of any six application protocols of the TCP/IP model that provide exchange of user information with the associated port numbers. [6 marks]
- c) Describe how Domain Name System works. [4 marks]
- d) HTTP specifies a request/response protocol. When a client, typically a web browser, sends a request message to a server, the HTTP protocol defines the message types the client uses to request the web page and the message types the server uses to respond. Discuss the three common message types. [6 marks]