



PIONEER INTERNATIONAL UNIVERSITY

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UNIVERSITY EXAMINATIONS

ACADEMIC YEAR: 2020/2021

UNIT NAME: COMPUTER NETWORK ARCHITECTURE AND PROTOCOLS

SEMESTER: SEPTEMBER - DECEMBER 2021

UNIT CODE: BSSC 4230

DATE: DECEMBER 2021

TIME: 2 HOURS

INSTRUCTIONS: Answer question one (30 marks) and any other two

IMPORTANT NOTICE !!!!!!!!!!!!!

The following are the possible consequences if found guilty of an Examination Offence:

a) Expulsion from the University.

b) Academic Leave.

QUESTION ONE (COMPULSORY 30 MARKS)

a. Define the following terms;

i. Routing Tables [1 Mark]

ii. Network Protocols [1 Mark]

iii. Protocol Data Unit [1 Mark]

iv. Network edge [1 Mark]

v. MPLS [1 Mark]

b. i. What is the response of upper and lower sublayers? [3 Marks]

ii. Describe the upper and lower sub-layers. [6 Marks]

c. Wireless communications and mobile information systems is an emerging field. What are any FOUR building blocks of wireless communications and mobile information systems. [4 Marks]

d. Briefly discuss FOUR reasons when UDP can be chosen over TCP. [4 Marks]

e. Describe the Data Center architecture. [5 Marks]

f. In particular, an application-layer protocol defines a number of things. Explain any THREE.

[3 Marks]

QUESTION TWO (20 MARKS)

- a. Describe the TCP structure. [5 Marks]
- b. Give categorization of the knowledge dimension that the revised taxonomy places major emphasis on. [6 Marks]
- c. What THREE categories is cloud infrastructure generally categorized into in order to create a cloud service? [3 Marks]
- d. List any THREE dangers of a centralized DNS design. [3 Marks]
- e. Differentiate between multiplexing and demultiplexing. [3 Marks]

QUESTION THREE (20 MARKS)

- a. When deploying an Out of band Management network, what THREE practices should be realized when it is deployed? [3 Marks]
- b. i. What is BGP? [2 Marks]
- ii. How does BGP work? [3 Marks]
- c. Briefly discuss THREE types of routing algorithms. [6 Marks]
- d. Briefly explain SIX levels of the revised taxonomy. [6 Marks]

QUESTION FOUR (20 MARKS)

- a. i. What is an access network? [2 Marks]
- b. Differentiate between Tier 1, Tier 2 and Tier 3 network. [6 Marks]
- c. i. What is iSCSI traffic. [2 Marks]
- ii. Differentiate between a console and an auxiliary port. [4 Marks]
- d. What are any crucial THREE components that support a cloud-based infrastructure? [3 Marks]

QUESTION FIVE (20 MARKS)

- a. Describe components of a data center. [5 Marks]
- b. Explain how the router performs If the destination IP address is part of a different network. [4 Marks]
- c. i. Differentiate between Wireless communication and Mobile communication. [4 Marks]
- ii. Give an example of each of the i. above. [2 Marks]
- d. i. What is Edge Computing? [2 Mark2]
- ii. Enumerate any THREE components of the core network. [3 Marks]

