



(Knowledge for Development)

KIBABII UNIVERSITY

(KIBU)

UNIVERSITY EXAMINATIONS

2021/2022 ACADEMIC YEAR

END OF SEMESTER EXAMINATIONS

YEAR FOUR SEMESTER TWO EXAMINATIONS

FOR THE BACHELORS OF SCIENCE IN

COMPUTER SCIENCE

COURSE CODE: CSC 469E

COURSE TITLE: INTERNET OF THINGS

DATE: 5/9/2022

TIME: 2.00 P.M – 4.00 P.M

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTION ONE AND ANY OTHER TWO QUESTIONS

QUESTION ONE (COMPULSORY) [30 MARKS]

- a) Outline **THREE** main challenges for IoT management? [6 marks]
- b) Explain **TWO** main elements of IoT, [4 marks]
- c) Outline any **THREE** advantages and any **THREE** disadvantages of IoT [6 marks]
- d) Discuss any **TWO** IoT technologies that facilitate real-time services. [4 marks]
- e) Describe any **THREE** IoT challenges for streaming real-time applications [6 marks]
- f) Outline the steps necessary for the deployment of IoT project [4 marks]

QUESTION TWO [20 MARKS]

- a) Outline different layers of the IoT protocol stack and write the classification of IoT protocol [8 marks]
- b) With relevant examples outline any **THREE** application areas of IoT [6 marks]
- c) Discuss any **THREE** characteristics of IoT that makes it possible to communicate with different varieties of physical services [6 marks]

QUESTION THREE [20 MARKS]

- a) Discuss any **THREE** areas where the government can focus on to help drive IoT adoption in a country [6 marks]
- b) Discuss any **FOUR** major enabling technologies and protocols for an IoT [8 marks]
- c) Outline any **THREE** network layer routing protocols used in IoT deployment [6 marks]

QUESTION FOUR [20 MARKS]

- a) Discuss **FOUR** scenarios where IoT growth is hindered [8 marks]
- b) Explain the responsibility of the following software applications within the IoT network.
 - i) Data collection [3 marks]
 - ii) Device integration [3 marks]
 - iii) Real-time analytics [3 marks]
- c) Briefly explain the impacts the Internet of Things (IoT) will have on the Transportation Sector.

QUESTION FIVE [20 MARKS]

- a) Suppose you are tasked to provide farm water monitoring system, outline:
- i) IoT solution that you will implement [3 marks]
 - ii) The benefits from such a system [6 marks]
- b) Discuss **SIX** key features of IoT [6 marks]
- c) Differentiate between hard and soft handoff as used in mobile networking [2 marks]
- d) Discuss any **THREE** factors that ensure success in handoff in a wireless system [3 marks]