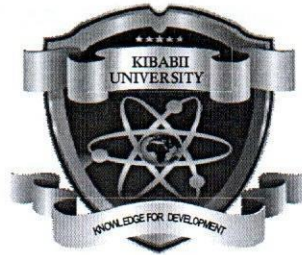


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(Knowledge for Development)

KIBABII UNIVERSITY

UNIVERSITY EXAMINATIONS

2019/2020 ACADEMIC YEAR

END OF SEMESTER EXAMINATIONS

YEAR FOUR SEMESTER TWO

FOR THE DEGREE OF

COMPUTER SCIENCE

COURSE CODE: CSC 469E

COURSE TITLE: INTERNET OF THINGS

DATE: 09/11/2020

TIME: 9.00 A.M – 11.00 A.M

INSTRUCTIONS:

ANSWER QUESTION ONE AND ANY OTHER TWO QUESTIONS

QUESTION ONE [COMPULSORY] [30 MARKS]

- a) With relevant examples discuss the importance of IoT [3 marks]
- b) With a comprehensive definition of IoT, outline **TWO** main elements [4 marks]
- c) Discuss any **FOUR** advantages and any **FOUR** disadvantages of IoT [8 marks]
- d) Outline any **TWO** IoT technologies that facilitate real-time services. [4 marks]
- e) Discuss any **THREE** IoT challenges for streaming real-time applications [6 marks]
- f) With a suitable example describe the steps necessary for the deployment of IoT project [5 marks]

QUESTION TWO [20 MARKS]

- a) Discuss any **FOUR** main differences between IoT services and traditional services [4 marks]
- b) With relevant examples outline any **FOUR** application areas of IoT [8 marks]
- c) Discuss any **FOUR** characteristics of IoT that makes it possible to communicate with different varieties of physical services [8 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 [2 marks]
 - ii) Device integration [2 marks]
 - iii) Real-time analytics [2 marks]
- c) Outline any **THREE** challenging key issues that the dilemma of current Internet architecture requires great effort to change [6 marks]

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]