CHUKA   **UNIVERSITY**

UNIVERSITY EXAMINATIONS

**EXAMINATION FOR THE AWARD OF DEGREE OF
BACHELOR OF SCIENCE COMPUTER SCIENCE**

COSC 475: SPECIAL TOPICS IN COMPUTER SCIENCE

STREAMS: BSC (COSC)   **TIME: 2 HOURS**

DAY/DATE: TUESDAY 07/04/2020   **2.30 PM – 4.30 PM**

INSTRUCTIONS:

ANSWEER QUESTION ONE AND ANY OTHER TWO

SECTION A:

QUESTION ONE :30 MARKS

a) Explain the following in details giving example in each case: (6 marks)

    i)   Network Forensics
    ii)   Forensic data analysis
    iii)   Mobile device forensic

b) Why is big data here to stay and even take predominance in the future?   (4 marks)

c) Discuss the Hadoop Distributed File System (HDFS)   (4 marks)

d) Why is Digital Crime Scene Preservation and Documentation phase very important in achieving successful digital crime investigation   (4 marks)

e) Blockchain has drawn attention as the next-generation financial technology due to its Security that suits the informatization era. Justify the statement and also explain its challenges with appropriate examples.   (4 marks)

f) Define IoT Testing . Explain 5 types of IoT testing .   (5marks)

g) While Big Data offers a ton of benefits, it comes with its own set of issues. This is a new set of complex technologies, while still in the nascent stages of development and evolution. Discuss the top Three critical challenges that enterprises are likely to face, if they are planning on implementing Big Data (3 marks)

SECTION B

QUESTION TWO: 20 MARKS

a) How Might Cybersecurity affect the Development and Implementation of the Internet of Things (IoT), especially in the Kenya (4 marks)

b) What is Big data analytics ? Describe at least Five Top big data analytics tools. (5 marks)

c) Discuss the characteristics of cloud computing in detail (3 marks)

d) Explain the following problems that Bitcoin technology must overcome:
   i) No intrinsic value (2mark)
   ii) Creation of Huge hardware competition (2marks)
   iii) No recovery to stolen or lost bitcoins (2marks)
   iv) Taxation and legal challenges for regulators (2marks)

QUESTION THREE:20 MARKS

a) Block chain has drawn attention as the next-generation financial technology due to its Security that suits the informatization era. Justify the statement and also explain its challenges with appropriate examples (10 marks)

b) Discuss "internet minute " in relation to Big data by use of relavant examples (5 marks)

c) "I think [block chain] is a fascinating area to keep an eye out for, but I think it's being over-hyped right now… from the aspect of its short-term impact because there are still technical things that you need to solve and scale and there are still counter-aspects – business model wise – that aren't necessarily fully clear."

What is your take on the statement by bringing out a proper and deep support for or against the statement with clear and well explained examples (5marks)

QUESTION FOUR:20 MARKS

a) What are the likely problems that cryptocurrency poses to the financial sector in the future? (5 marks)

b) How is Hadoop related to Big Data? Describe its components (3 marks)

c) It's important for companies to formally establish and publish their policies regarding forensic investigations.

i) Give 4 (four) aspects or areas where these policies should address   (4marks)
ii) Give 4 (four) benefits that the company can get from establishing these(4 marks)

d) Discuss Trust issues in the cloud computing and explain how they can be addressed .
(4marks)

QUESTION FIVE:20 MARKS

a) Discuss the Digital Investigation Process Model (DIPM)   (10 marks)

b) What are users' incentives to switch from traditional banking system to public blockchain?
(5 marks)

c) Discuss the main components of IoT architecture. Use a diagram to show the relationship and coordination between them   (5 marks)