



TECHNICAL UNIVERSITY OF KENYA

FACULTY OF APPLIED SCIENCES AND TECHNOLOGY

SCHOOL OF COMPUTING & INFORMATION TECHNOLOGY

END OF SEMESTER MAY 2017 EXAMINATION SERIES

FIRST SEMESTER EXAMINATIONS 2016/2017

THIRD YEAR EXAMINATIONS FOR THE DEGREE OF

BACHELOR OF TECHNOLOGY IN COMPUTER TECHNOLOGY

BACHELOR OF TECHNOLOGY IN INFORMATION TECHNOLOGY

BACHELOR OF TECHNOLOGY IN COMMUNICATION AND COMPUTER NETWORKS

ECSI 4204/ ECII 4204/ /ECCI 4204: EMERGING TECHNOLOGICAL TRENDS IN ICT AND
SOCIETY

TIME: 2 Hours

MAY 2017

Instructions to candidates:

This paper consists of FIVE Questions.

Answer Question ONE [30 Marks] and any other TWO Questions [20 Marks Each].

Mobile phones and any written materials are prohibited in the examination room.

Programmable calculators are prohibited

Write your college number on the answer sheet.

This paper consists of 3 printed pages

Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.

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QUESTION 1 (30 Marks)

- a) Define the following terminologies using two relevant examples each:-
(i) Emerging Technology. [6 marks]
(ii) Trend [5 Marks]
(iii) Society [5 Marks]
- b) Discuss the link between emerging trends in ICT and traditional models of computer application areas in the context of a society's history [5 Marks]
- c) For each of the following emerging computer mediated technologies briefly describe their projected impact on individuals and industry within society the next five-ten years [5 Marks]
i. Social Media
ii. Virtual and augmented reality
- c) State five social-ethical issues related to the use and effects of computers in society [5 marks]
- d) Define the term "Information society" as used in ICT emerging technological trends and society. [2 marks]
- e) State four different areas where computer tasks are carried out at component and system level [4 marks]
- f) The Internet of things (IoT) is the inter-networking of physical devices. List three other concept names by which it can be referred to as [2 marks]
- g) Name a trend from the generation of computing in which only one program could run at a time ^{2nd} [1 mark]

QUESTION TWO (20 Marks)

- a) Correctly define the term big data [2 marks]
- b) How is computer management implemented? [2 Marks]
- c) Identify three categories of society where mobile communication has applied the social aspect of convenience [3 marks]
- d) Explain how virtual reality works in computer technology [2 marks]
- e) Name five recommended steps that must be undertaken before doing any other work on a new computer network [5 marks]
- f) Discuss any three emerging trends from the third generation of telecommunications history [3 marks]
- g) Explain the importance of the following computing and I.T. revolutions:-
i. The hardware revolution
ii. The software programming revolution
iii. State one relevant example of a trend in each revolution [3 marks]

QUESTION THREE (20 Marks)

- a. You have recently graduated after successful completion of your Information technology and/or computing degree. Technical university of Kenya hires you to work for them as an I.T. professional. One of your first assignments is to implement a B.Y.O.D policy. Discuss the steps you would take to introduce a formal B.Y.O.D. programme [5 Marks]

- b. State three type of ways in which components in a network can be interconnected [3 marks]
- c. State the three main areas that the mainstream definition of big data is divided into [3 marks]
- d. Define computer management [2 Marks]
- e. Name two advantages of CAL (computer assisted Learning) [2 marks]
- f. Explain what the address space expansion in IPv6 mean as a factor in the development of IoT [3 marks]
- d. Name two areas in which online and offline convergence will offer powerful commercial potential in ICT and society [2 marks]

QUESTION FOUR (20 Marks)

- a) Name three social aspects of ICT that significantly impact society [3 marks]
- b) What is a startup? [3 marks]
- c) Describe the seven accepted pillars of technology in society [7 marks]
- d) State two key markers of mobile ICT. Write a brief description for each marker [3 marks]
- e) Name two states of a network from the system administrator's point of view [2 marks]
- f) Discuss any three areas of Kenyan society currently experiencing emerging trends in computer applications [3 marks]

QUESTION FIVE (20 Marks)

- b) List three research questions of interests on the nature of cloud computing [3 marks]
- b) Name one factor that will enable social media to offer major opportunities for engagement with society [2 marks]
- c) Give two examples of how modern web browsers anticipate user's needs [2 marks]
- d) Name the emerging trend in configuring and managing wired & wireless networks and state two goals it is recognized for attaining [4 marks]
- e) List two strengths and two weaknesses of computers [4 marks]
- f) Describe how IoT works [4 marks]
- g) Python is an example of what generation of computer language? [1 mark]