

UNIVERSITY EXAMINATIONS

1ST SEMESTER 2022/2023 ACADEMIC YEAR

THIRD YEAR EXAMINATION FOR THE DEGREE OF
BACHELOR OF SCIENCE (COMPUTER SCIENCE)

COMM 314: INFORMATION TECHNOLOGY SYSTEMS AND
SOCIAL CHANGE

STREAM: R

TIME: 2 HRS

DAY: MONDAY [11.30AM – 13.30] DATE: 19/12/2022

THIS QUESTION PAPER CONSISTS OF THREE (3) PAGES

PLEASE DO NOT OPEN UNTIL THE INVIGILATOR SAYS SO.

QUESTION ONE**(30 MARKS)**

- (a) A 19-year-old Wyoming, USA based man was charged with using modified peer to-peer software to infect computers and create “botnets” – armies of compromised computers numbering from 5,000 to 15,000 machines – that he exploited to obtain credit card and banking information. Jason Michael Milmont agreed to plead guilty to a charge of unauthorized access to a computer to further a fraud. The case against Milmont relates to his development of the Nugache Worm, which he developed to infect computers running the Windows operating system and is the first time a person has been prosecuted for using peer-to-peer software as a delivery mechanism for malicious computer code. Milmont modified Limewire peer-to-peer software to work as “trojan” software that carried a hidden payload and then posted his modified version of Limewire on the Internet for victims to download. Milmont also used instant messaging spam to surreptitiously download infected files to victims’ computers. After victims downloaded the software, Milmont gained control of their computers, allowing him to obtain credit card and banking information from the compromised computers. He also used the compromised computers to carry out an Internet attack on an online business in Southern California, USA. Because the users of those compromised computers were unaware that their computers had been turned into “zombies,” they continued to use their computers to engage in online banking and purchases.
- (i) If this case had taken place in Kenya, which provisions of the amended Information Technology Act would apply and why? (10 marks)
- (ii) Explain the historical background, Objectives, Extent, Scope and Commencement of the proposed computer cybercrime bill 2017. (10 marks)
- (iii) What is the liability of network service providers under the proposed computer cybercrime Bill 2017? (10 marks)

QUESTION TWO (20 marks)

- (a) Discuss in details the impact of Disruptive technology in media. (6 marks)
- (b) Discuss any three theories of the information society (6 marks)
- (c) Define the term ethics and law. (2 marks)
- (d) Discuss the need for ethics and law in computing. (6 marks)



QUESTION THREE (20 marks)

- (a) Discuss the role of ICT in: (9 marks)
 - (i) Employment and income generation
 - (ii) Education and health programs
 - (iii) Promoting democracy and governance
- (b) Discuss the need for ICT policy formulation (6 marks)
- (c) Discuss the impact of ICT on education. (5 marks)

QUESTION FOUR**(20 marks)**

Information and Communication Technologies (ICT)—Internet, web, and social media—are fast becoming a comprehensive repository and soon an archive of (most) human knowledge. With access to ICT, an individual can become informed on everything from healthcare issues to civic problems to legal concerns. One hundred years ago, people were discussing the need for basic literacy and its impact on the human condition. Today, we should be discussing digital literacy and access in the same way. Digital literacy can be seen as a basic human right. Individuals can impact society, react, and reach out with the aid of technology. ICT is a powerful tool for encouraging, teaching, and protecting human rights. Discuss on how ICT's impact on human rights, including but not limited to the following areas.

- (a) ICT & Rural Development (e.g., farming) (5 Marks)
- (b) ICT & Environmental Movement (5 Marks)
- (c) ICT & Crisis Management (5 Marks)
- (d) ICT & Economic Development (how can ICT promote a higher standard of living around the world and relieve poverty?) (5 Marks)

QUESTION FIVE**(20 marks)**

- (a) Discuss the E-government strategy in Kenya. (8 marks)
- (b) Discuss the role of ICT in poverty reduction. (6 marks)
- (c) Define the term ICTs. (2 marks)
- (d) Using the explanation of ICTs given above, would you say that the technologies used for email communication are ICTs? Explain your answer. (4 marks)

