



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF INFORMATICS AND INNOVATIVE SYSTEMS

UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN

INFORMATION COMMUNICATION TECHNOLOGY

2ND YEAR 1ST SEMESTER 2022/2023 ACADEMIC YEAR

MAIN CAMPUS

COURSE CODE: ITB 1202

COURSE TITLE: MOBILE COMMUNICATIONS

EXAM VENUE: STREAM:

DATE: EXAM SESSION:

TIME:

INSTRUCTIONS

- 1. Answer Question 1 (Compulsory) and ANY other TWO questions**
- 2. Candidates are advised not to write on the question paper**
- 3. Candidates must hand in their answer booklets to the invigilator while in the examination room**

Question 1 [30 marks]

- a) What are the basic network functions of a mobile network (4 marks)
- b) Differentiate between transparent mode and non-transparent mode of digital transmission (4 marks)
- c) Describe the benefits of wireless ad hoc networks (4 marks)
- d) Give the additional services that complement the telephony teleservice (5 marks)
- e) Describe the main components of a mobile network architecture (3 marks)
- f) What are the parts that constitute an IMSI (3 marks)
- g) Describe the challenging situations that cause QOS(Quality Of Service) to degrade (4 marks)
- h) Give the security services offered by the GSM (3 marks)

Question 2 [20 marks]

- a) Discuss the characteristics of a Mobile Ad hoc Network (10 marks)
- b) Discuss the disadvantages of Ad hoc networks (10 marks)

Question 3 [20 marks]

- a) Discuss the classifications of handoff (4 marks)
- b) Discuss the Quality of Service parameters (8 marks)
- c) Discuss the security issues in Mobile environment (8 marks)

Question 4 [20 marks]

- a) Discuss the sequence of events followed when a mobile subscriber makes a call to a PSTN telephone subscriber (10 marks)
- b) Discuss the types of attacks in mobile environment (10 marks)

Question 5 [20 marks]

- a) Discuss the functions of a Base Station Controller (10 marks)
- b) Discuss the information that is contained in a SIM (Subscriber Identity Module) (10 marks)