



(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 475

**COURSE TITLE : ADVANCED WIRELESS & MOBILE
NETWORKS**

DATE: 06/11/2020

TIME: 2.00 P.M – 4.00 P.M

INSTRUCTIONS:

ANSWER QUESTION ONE AND ANY OTHER TWO QUESTIONS

QUESTION ONE [COMPULSORY] [30 MARKS]

- a) List two advantages of wireless networking. [4 marks]
- b) What are the three areas defined for the IEEE 802.11 standard? [6 marks]
- c) What is an ad hoc network? [3 marks]
- d) How does WiMax differ from Wi-Fi? [4 marks]
- e) What are the four physical layer technologies being used in 802.11 wireless networking? [8 marks]
- f) In what frequency band does Bluetooth operate? [3 marks]
- g) What is the purpose of an access point? [2 marks]

QUESTION TWO [20 MARKS]

- a) How does the access point know if a wireless data packet is intended for its network? [4 marks]
- b) Describe the frequency spectrum for the DSSS channels in 802.11b wireless networking. [6 marks]
- c) How many output power classes does Bluetooth have? List the power level [4 marks]
- d) What is the purpose of the paging procedure in Bluetooth and the operating range for each class. [6 marks]

QUESTION THREE [20 MARKS]

- a) Define MIMO as it applies to 802.11n. [4 marks]
- b) What is the frequency range used by 802.11a, and what modulation technique is used? [4 marks]
- c) What are the key issues to be obtained from conducting a site survey for each of the following?
i. indoor [4 marks]
ii. outdoor [4 marks]
- d) What is the most important thing to do if using a wireless network? [4 marks]

QUESTION FOUR [20 MARKS]

- a) What is the purpose of wireless beacons? [4 marks]
- b) What must the FHSS transmitting and receiving units know to communicate? [6 marks]
- c) What is the purpose of the inquiry procedure in Bluetooth? [6 marks]
- d) Define the term backscatter. [4 marks]

QUESTION FIVE [20 MARKS]

- a) What are the three parameters that define an RFID system? [6 marks]
- b) Cite three advantages for using an active RFID tag. [6 marks]
- c) Explain how power is provided to a passive RFID tag. [4 marks]
- d) What information can be obtained from a wireless beacon? [4 marks]