

ICT 9025: Mobile Applications and Technologies

Test 2

[May 2022]

Instructions

Answer *all* the questions

Duration: 1 hour

Total Marks: 35

Write your answers in the answer sheets provided (ensure that your name and student ID are written at the top of each answer sheet submitted)

- 1) State which 3G network standard is the most dominant and explain why it became the most dominant. [2]
- 2) Give two differences between 3G networks and 4G networks [2]
- 3) Regarding 2G networks that came before 3G networks: besides GSM and iDEN, name and describe two other 2G networks [4]
- 4) Regarding LTE 4G Components:
 - a. Explain what the P-GW does [1]
 - b. Describe what the eNodeB does [2]
 - c. Explain what the HSS does [2]
 - d. State one function of the MME [1]
- 5) Regarding the Wireless Application Protocol:
 - a. What is the function of WAP [2]
 - b. Explain the function of the WAP Gateway [2]
 - c. Give the name of the markup language that WAP uses [1]
 - d. WAP includes five Layers, give the name of one WAP Layer [1]
- 6) State the differences between FDMA, TDMA and CDMA [3]
- 7) Explain why LTE uses OFDMA for data downloads but uses SC-FDMA for data uploads [3]
- 8) UMB was canceled, whereby LTE and WiMax became the most widely used 4G network technologies. Give the full name of UMB and give one reason why UMB was cancelled [2]
- 9) Give two differences between LTE and WiMax [2]
- 10) Regarding 3G networks
 - a. Name one 3G network developed by 3GPP [1]
 - b. Name one 3G network developed by 3GPP2 [1]
 - c. Describe any 3 components which are part of the 3GPP's 3G network [3]

Total: [35 marks]