

Section B (60 marks). Attempt 3 out of 4 questions in this section

Question one: (20 marks)

Tuuka is a new-founded company in Mbarara for ensuring that patients referred from private hospitals have reached hospital facilities where they were referred (places of referral). To be able to ensure proper follow up of the referred patients, Tuuka needs a mobile application. The mobile application must allow healthcare workers at private facilities to enter patients' details. Upon entering these details, the referred patient must receive an SMS notification to go the place of referral. The healthcare workers at the place of referral should receive a notification (SMS reminder) about the incoming referred patient. In case the referred patient fails to go to the place of referral, after 12 hours, he/she should receive an SMS reminder encouraging him/her to go to the place of referral. Upon receiving the notification about the incoming referred patient, the healthcare worker at the point of referral should return a confirmation that they received a patient and made the necessary treatment. Tuuka wants to develop a mobile application to fully support the management of all the activities described above.

- Using the information from the text above, clearly highlight any five user requirements specified in the Tuuka case. (2 Marks @)
- State any five system requirements specified in the Tuuka case (2 Marks @)

Question two: (20 marks)

The development of software systems that are dependable is a key metric for ensuring consumer satisfaction. As a computer science student,

- Define the term software dependability (2 marks)
- Describe any five principal properties of software dependability (2 Marks @)
Availability, Reliability, Safety, Security, Resilience, Repairability, Maintainability, Error tolerance
- Define any four ways through which software dependability can be achieved (2 Marks@)
— Avoid Introdn of accidental errors
— Design V & V processes
— II systems that are fault tolerant
— Include system capabilities to recognise & resist cyber attacks