

**UNIVERSITY COLLEGE TATI (UCTATI)****FINAL EXAMINATION QUESTION BOOKLET**

COURSE CODE	: BCS2413
COURSE	: SYSTEM ANALYSIS AND DESIGN
SEMESTER/SESSION	: 2 - 2024/2025
DURATION	: 3 HOURS

Instructions:

1. This booklet contains **5** questions. Answer **ALL** questions.
2. All answers should be written in answer booklet.
3. Write legibly and draw sketches wherever required.
4. If in doubt, raise up your hands and ask the invigilator.

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO

THIS BOOKLET CONTAINS 5 PRINTED PAGES INCLUDING COVER PAGE

QUESTION 1

- a) Identify the main objectives of system analysis phase. (2 marks)
- b) State the **THREE (3)** main requirements for modeling. (6 marks)
- c) Fact-finding involves answers to five familiar questions: who, what, where, when, and how. Therefore, interviewing is an important fact-finding tool during system analysis phase. Create seven interview questions to ask the middle manager of *Shopee* e-commerce platform. (7 marks)

QUESTION 2

- a) Describe **FOUR (4)** characteristics of Data Flow Diagram. (8 marks)
- b) A data dictionary is a central storehouse of information about the system's data. Its define the data element. Recommend **SIX (6)** data elements to represent the IDENTIFICATION CARD NUMBER in data dictionary according to the Figure 1. (6 marks)

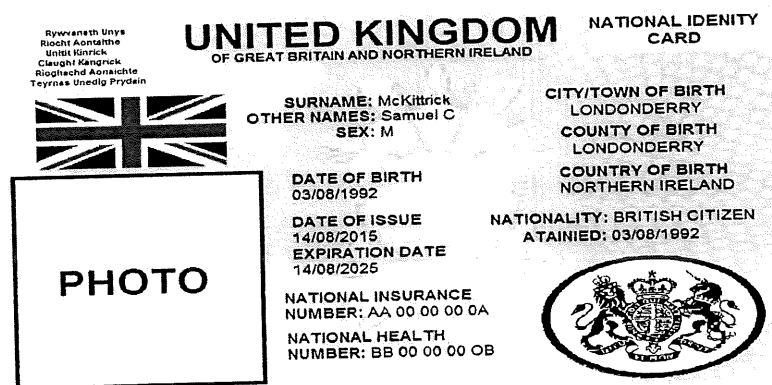
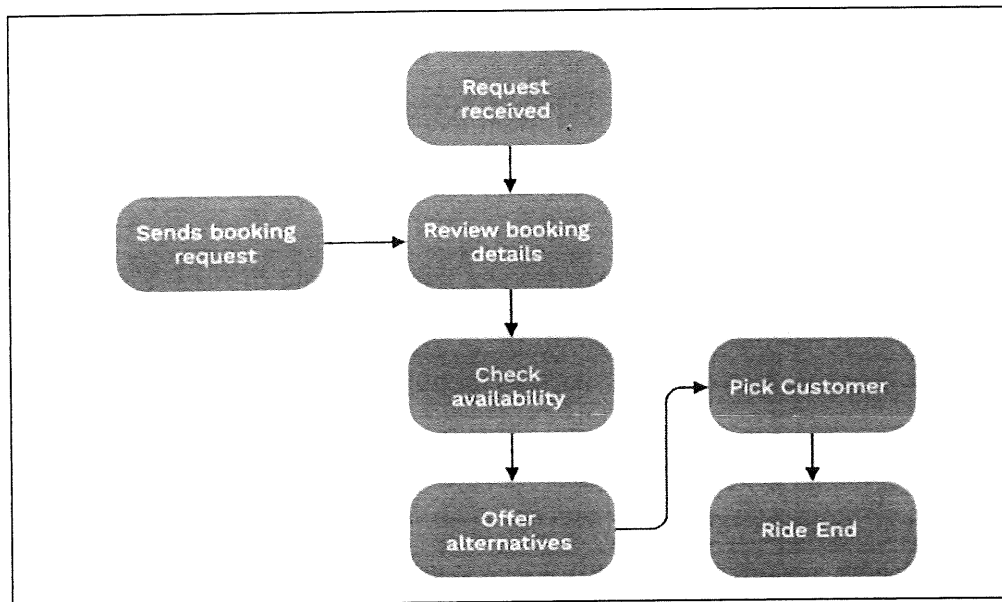


Figure 1

- c) The involvement of computer applications improves user interaction and makes it more interesting. Therefore, its influences the Grab Rides Reservation System. Grab rides connect millions of passengers with private hire, taxi, bus, and ferries. Produce DFD level based on Figure 2.



(9 marks)

Figure 2

- d) A process description documents the details of a functional primitive and represents a specific set of processing steps and business logic. List **THREE (3)** process description tools to create a precise model. (3 marks)

QUESTION 3

- a) Figure 3 shows the application of validation checked in input design interface. (2 marks)
- i) Classify **TWO (2)** types of validation check when the following message appear.

Figure 3 is a screenshot of a web application's validation error message. The message states: "Edit was unsuccessful. Please correct the errors and try again." Below this, there are three bullet points listing the errors:

- The Name field is required.
- The field Color must be a string with a maximum length of 15.
- The field Weight must be between 0 and 9999.

 Below the error list, there is a section titled "Fields" which contains three input fields:

- Name:** An empty text input field with a red asterisk indicating it is required.
- Color:** A text input field containing the value "dark with fading edge" and a red asterisk.
- Age:** A text input field containing the value "16.38" and a red asterisk.

 At the bottom of the form, there is a "Save" button.

Figure 3

- ii) Identify data type for Username and Age. (2 marks)
- b) Design the input form for UCTATI International Student Application Form. (5 marks)
- c) Recommend **SIX (6)** output technologies which impact how people communicate and obtain information (6 marks)

QUESTION 4

As the nation progresses with technology, Malaysian tolls have implemented a new system involving Radio-frequency identification (RFID) to reduce congestion at toll plazas and to help speed up the government's aim for a multi-lane traffic free flow network in the future. Over the last year, several toll plazas have opened up RFID lanes for public service vehicles, such as police cars, ambulances, and fire trucks. As of September 2022, civilians who are interested in testing the RFID system will get the chance to do so. However, SmartTAG may still be used by those who prefer them. Figure 4 shows that Malaysia electronic payment toll system flow.

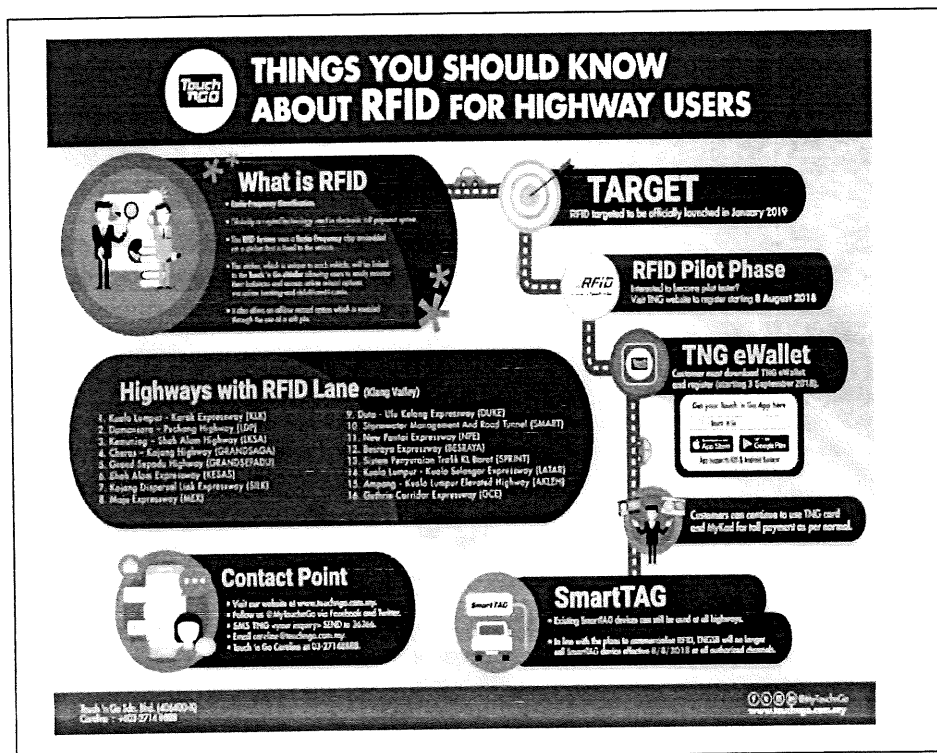


Figure 4

- a) Summarize the chronology of payment method toward (RFID) usage in Malaysian Tolls. (4 marks)
- b) Classify the weaknesses of previous payment method. (6 marks)
- c) Produce the flowchart for RFID Malaysia Tolls. (15 marks)
- d) System change over is the process of putting the new information system online and retiring the old system. According to Malaysia toll system, justify and describe the changeover method that has been used. (4 marks)

QUESTION 5

a)

"Almost 20 years ago, Pixar was using Linux machines. On Linux machines, there's a command that removes everything below the current directory on which it's run. Someone inadvertently ran that command at the root level of the Toy Story 2 project. Entire sequences started disappearing, right in front of everyone's eyes. Oren Jacob, former Chief Technical Officer of Pixar, called systems to demand they unplug the machine immediately. After doing so, then plugging it back in a few hours later, they realised most of the film was gone. 90% of the movie had been deleted by the command."

Figure 5

As system analyst, propose **THREE (3)** steps of back up policy to avoid the above incident in Figure 5: (6 marks)

- i) Back up media.
 - ii) Back up type.
 - iii) Retention period.
- b) Provide **THREE (3)** system security levels. (3 marks)
- c) Recommend **THREE (3)** future challenges including globalization, technology integration, service orientation, cloud computing and the workplace of the future. (6 marks)

-----End of question-----

