KASNEB

CICT PART III SECTION 5

MOBILE APPLICATION DEVELOPMENT

THURSDAY: 25 May 2017.   Time Allowed: 3 hours.

Answer ALL questions. Marks allocated to each question are shown at the end of the question.

QUESTION ONE
(a)   Explain the term "app bundle" as used in iOS application development.   (2 marks)

(b)   Describe two iOS user interfaces.   (4 marks)

(c)   Discuss three internet protocols used in mobile applications.   (6 marks)

(d)   With the aid of a well labelled diagram, explain the mobile application architecture.   (6 marks)

(e)   List two examples of app widgets.   (2 marks)

(Total: 20 marks)

QUESTION TWO
(a)   List two types of integrated development environments (IDEs) for developing the following:

    (i)   Android mobile devices.   (2 marks)

    (ii)   iOS mobile devices.   (2 marks)

(b)   Using HTML code, demonstrate two ways of inserting style sheets in a website to be used on a mobile device.

(4 marks)

(c)   Summarise four issues to address in a mobile device security policy.   (4 marks)

(d)   Differentiate between "thin client application" and "rich client application".   (2 marks)

(e)   Interpret the purpose of the following code snippet as used in android application development:

```
<?XML version = "1.0" encoding = "utf – 8" ?>
<resources>
<string name = "app_name" > Mobile App</string>
<string name = "edit_message" > key in name</string>
<string name = "button_send"> submit</string>
</resources>
```
(2 marks)

(f)   Write a snippet code to retrieve all contact names and phone numbers in an android mobile application.   (4 marks)

(Total: 20 marks)

QUESTION THREE
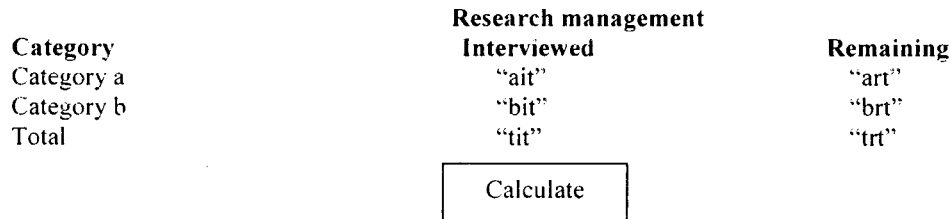(a)   Highlight two advantages of mobile cloud computing.   (2 marks)

(b)   Summarise two capabilities of mobile IPv6 (MIPv6).   (2 marks)

(c)   Explain the significance of setting up an API key before using google maps.   (2 marks)

(d)   Distinguish between NSArray and NSDictionary as used in objective C programming.   (2 marks)

(e) Mobile companies are rolling out the fourth generation networks yet application developers are testing their applications on the old slow second generation networks.

Argue two cases for the testing of applications on second generation networks. (4 marks)

(f) A research management software is required to manage an interview as shown on the diagram below:

Research management

Category	Interviewed	Remaining
Category a	"ait"	"art"
Category b	"bit"	"brt"
Total	"tit"	"trt"

<div style="border:1px solid">Calculate</div>

For each category a total of 100 respondents are required. The system should work according to the following rules:

- The system calculates the remaining respondents in each category by subtracting those interviewed in each category from 100.

- The total interviewed is calculated by adding those interviewed in each category.

- The total remaining is calculated by adding those remaining in each category.

- The name of each "EditText" is as shown on the diagram using quotes, as imported in the program logic.
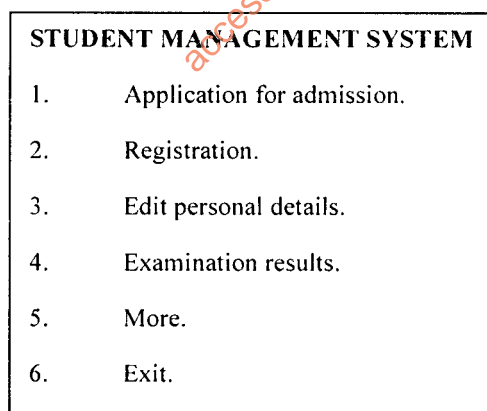
Required:
Write a code segment to achieve the above when run on an android platform. (8 marks)
(Total: 20 marks)

QUESTION FOUR
(a) Critique the use of unstructured supplementary service data (USSD) code as a choice of mobile applications.

(4 marks)

(b) Defend the use of dynamic binding in mobile application development. (4 marks)

(c) Discuss the use of toggle button in mobile application development citing examples of where they are used in a mobile operating system. (4 marks)

(d) A student management system had a USSD code option as shown below:

STUDENT MANAGEMENT SYSTEM

1. Application for admission.

2. Registration.

3. Edit personal details.

4. Examination results.

5. More.

6. Exit.

Note:

The following shows the function called on selecting respective choices:

Choice	Function called
1	apply ( )
2	register ( )
3	edit ( )
4	exams ( )
5	more ( )
6	exit ( )

Required:
A USSD code to perform the above task. (8 marks)

(Total: 20 marks)

QUESTION FIVE

(a) Using objective C programming language, write code snippet to show how exceptions could be thrown, caught and handled within a code block. (6 marks)

(b) Enumerate four guidelines to be considered when designing an effective exception management strategy in mobile app. (4 marks)

(c) Distinguish between "Testflight" and "vessels" as used in mobile app development. (2 marks)

(d) Write a jquery code that will hide all the elements of a paragraph when a button is clicked by a user. (3 marks)

(e) Differentiate between a "getter method" and a "setter method" as used in mobile application development. (2 marks)

(f) Highlight three disadvantages of mobile databases such as SQLite. (3 marks)

(Total: 20 marks)

....