



CICT PART III SECTION 5

MOBILE APPLICATION DEVELOPMENT

FRIDAY: 27 November 2020.

Time Allowed: 3 hours.

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

QUESTION ONE

- (a) (i) Write a HTML tag to import CSS from within HTML. (2 marks)
- (ii) Write a CSS rule to have a heading (h1) font size 200% larger than the default and the font colour to be red. (2 marks)

- (b) The code below shows a function from the body of a swift code:

```
var marks = [55, 55, 53 53]
let total = 0.0
for marks in marks {
total += Double (mark)
}
let markstotal = Double (marks.count);
var average = total/markstotal

return average
```

Required:

- (i) Identify three errors from the above code. (3 marks)
- (ii) Correct the errors identified in (b) (i) above. (3 marks)
- (iii) Generate the output from the correct code in (b) (ii) above. (2 marks)
- (c) John Kalu, a mobile applications developer based in Nairobi was recently given the task of advising the government on matters of mobile computing and applications development.

Required:

Assess six device technologies of a pervasive computing environment that are likely to be beneficiaries of mobile applications development. (6 marks)

- (d) Explain the phrase behind “push notifications” as used in mobile applications. (2 marks)

(Total: 20 marks)

QUESTION TWO

- (a) Study the objective C code below used in iOS programming:

File 1

```
# import <UI Kit/UIKit.h>
```

```
@interface HelloWorldViewController: UIViewController
```

```
{
IBOutlet UITextField*txtUserName;
IBOutlet UILabel*lblUserTypedName;
}
```

```
-(IBAction) SubmitYourName;
```

```
@end
```

File 2

The following line is then added in the second file before @end.

```
-(IBAction) SubmitYourName;  
{lblUserTypedName.text = txtUserName.text;}
```

Required:

Sketch the expected user interface and output.

(4 marks)

- (b) Highlight examples of test scenarios in installation testing. (2 marks)
- (c) The department of correctional services is intending to use a mobile application for its day to day operations in order to guide all the field officers and enable mobility within its ranks. You have been contracted for this task.

Propose four measures that you could take so as to protect data and systems from different attack methods. (4 marks)

- (d) Explain an advantage and a disadvantage of infrared as used in mobile devices. (2 marks)
- (e) Write an android application logic for a class called CalculateRectangleArea in Android studio that allows the user to enter the length and width of a rectangle. The application then calculates the area and displays the answer through a TextView. (8 marks)

(Total: 20 Marks)

QUESTION THREE

(a) Distinguish between the following functions as used in JQuery:

(i) .detach() and .remove(). (2 marks)

(ii) jquery.get() and jquery.ajax(). (2 marks)

(iii) Event.preventDefault() and event.stopPropagation(). (2 marks)

(b) An intent is a messaging object you could use to request an action from another app component.

Required:

(i) Discuss three fundamental use cases in android app. (6 marks)

(ii) Explain two types of intents in android app. (4 marks)

(c) Consider the code excerpts below:

Code 1 <div id = "expander"> </div> // html statement

Code 2 div# expander { //cascadingstylesheet

width : 100px;

height : 100px

background-color:blue;

}

Required:

Write a code in jquery to animate the #expander div, expanding it from 100*100 pixels to 200*200 pixels over the course of three seconds. (4 marks)

(Total: 20 marks)

QUESTION FOUR

(a) Discuss the function of the following tools as used in mobile application programming:

(i) Androids Asset packaging tool. (2 marks)

(ii) Geotagging. (2 marks)

- (b) Examine three reasons why a corporate organisation might settle on mobile ad-hoc networks for their computing systems. (6 marks)
- (c) Discuss three benefits of creating thick-and-thin-client native application rather than relying on entirely web based solutions. (6 marks)
- (d) Using Android programming language, write a code extract that could be used to localise the following text into several languages "Welcome, thank you for using this app. You are a great person". (4 marks)
- (Total: 20 marks)**

QUESTION FIVE

- (a) (i) Describe localisation as used in mobile applications. (2 marks)
- (ii) Argue two cases in favour of localisation. (2 marks)
- (b) Justify the need for wireless access protocol (WAP) in mobile applications. (2 marks)
- (c) Discuss an unstructured supplementary service data (USSD) transaction from dialing the service code such as (*411#) to the end of a transaction. (4 marks)
- (d) An Android application is required to guide farmers in approximating the cost of ploughing their pieces of land to avoid being overcharged by unscrupulous dealers. A farmer inputs the length and width of his farm in meters. A piece of 100 x 100 meters is charged Sh.4,000.

Required:

An Android application function that performs the above task.

(10 marks)

(Total: 20 marks)

.....

access thousands of free content on www.freekcsepapers.com