

KASNEB

CICT PART III SECTION 5

MOBILE APPLICATION DEVELOPMENT

PILOT PAPER

September 2015.

Time Allowed: 3 hours.

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

QUESTION ONE

- (a) Describe "near field communication technology" as used in mobile computing. (3 marks)
- (b) Outline two significant challenges of multitasking on mobile devices. (4 marks)
- (c) (i) Explain the following types of mobile application testing:
- (i) Functional testing (2 marks)
 - (ii) Laboratory testing. (2 marks)
 - (iii) Memory leakage testing. (2 marks)
- (ii) Highlight four key challenges in mobile application testing. (4 marks)
- (d) Describe the framework used to construct applications' user interfaces for ios. (3 marks)
- (Total: 20 marks)**

QUESTION TWO

- (a) Define the following terminologies as used in android application development:
- (i) Intent. (2 marks)
 - (ii) Category. (2 marks)
- (b) (i) An android application development can be composed of multiple activities declared in the file AndroidManifest.xml. Write an xml tags that can be used to declare to add a child element to the <application> tag for two activities called MyActivity and SecondActivity. (2 marks)
- (ii) Write the Java class that inherits from the super class Activity for the Second Activity and its layout file. (3 marks)
- (iii) Distinguish between explicit and implicit intent as used in android application development. (4 marks)
- (c) Outline three activities states as used in mobile development. (3 marks)
- (d) Outline four challenges in mobile applications development. (4 marks)
- (Total: 20 marks)**

QUESTION THREE

- (a) Explain three advantages and three disadvantages of hybrid mobile application. (6 marks)
- (b) Outline four advantages of android operating system. (4 marks)
- (c) Explain five major steps in mobile software development life cycle. (5 marks)
- (d) Outline five best practices for building cross-platform mobile applications. (5 marks)
- (Total: 20 marks)**

QUESTION FOUR

- (a) (i) Distinguish between a theme and a style as used in mobile application development. (4 marks)
- (ii) Write an xml for designing a UI with a lighter theme in android mobile phone. (4 marks)
- (b) Explain the following attributes associated with linear layout XML shown below:
 - (i) android:inputType = "textCapWords"; (2 marks)
 - (ii) android:id = "@+id/editName"; (2 marks)
- (c) (i) Outline two data types used in objective C programming. (2 marks)
- (ii) Distinguish between implementation and interface files as used in objective C. (2 marks)
- (d) The method in objective C is implemented using the following example:

```
- (void) calculateArea{  
    //code goes here  
}
```

Explain the meaning of:

 - (i) Void.
 - (ii) "-"

(4 marks)
(Total: 20 marks)

QUESTION FIVE

- (a) Objective C is an object oriented programming language. Explain the terminology as used in mobile application development. (2 marks)
 - (b) Distinguish between mutable and immutable objects as used in mobile development. (4 marks)
 - (c) Explain the following objective C code:
 - (i) NSString xtestString. (1 mark)
 - (ii) int main(int argc, Constchar). (2 marks)
 - (d) List three common classes in objective C. (3 marks)
 - (e) (i) Getting the location of the device and the user is a cool service offered by mobile phone developers.
Write a snippet code, get the current device location and the previous location. (4 marks)
 - (ii) State a scenario where the location could be out-of-date. (1 mark)
 - (iii) Explain the term sandboxing as used in mobile application development. (2 marks)
 - (iv) State one distinctive framework APIs layer as used in iphone development. (1 mark)
- (Total: 20 marks)**
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