1.Compare and Contrast Structures and Classes in Swift. (3 Marks)  
Answer: Structures and classes in Swift have many things in common. Both can:

Struct: Structs are complex data types, they are made up of multiple values. We can create an instance of the struct and fill in its values, then we can pass it around as a single value in your code.

Class: Classes are building blocks. Like constants, variables and functions the user can define class properties and methods. Swift 4 provides us the functionality that while declaring classes the users need not create interfaces or implementation files.

Similarites between class and structure:

* Define properties to store values
* Define methods to provide functionality
* Define subscripts to provide access to their values using subscript syntax
* Define initializers to set up their initial state
* Be extended to expand their functionality beyond a default implementation  
  conform to protocols to provide standard functionality of a certain kind

Classes have additional capabilities that structures don’t have:

* Inheritance enables one class to inherit the characteristics of another.
* Type casting enables you to check and interpret the type of a class instance at runtime.
* Deinitializers enable an instance of a class to free up any resources it has assigned.

Reference counting allows more than one reference to a class instance.

Syntax:  
struct SomeStructure{  
 structure definition goes here  
}

Class SomeClass{  
 class definition goes here  
}

1. You are given a dictionary which has values for all lower case letters. You need to write a code to print the encoded message for the given text. (3 Marks)

var code = [

"a" : "z",

"b" : "y",

"c" : "x",

"d" : "w",

"e" : "v",

"f" : "u",

"g" : "t",

"h" : "s",

"i" : "r",

"j" : "q",

"k" : "p",

"l" : "o",

"m" : "n",

"n" : "m",

"o" : "l",

"p" : "k",

"q" : "j",

"r" : "i",

"s" : "h",

"t" : "g",

"u" : "f",

"v" : "e",

"w" : "d",

"x" : "c",

"y" : "b",

"z" : "a"

]

Example : If the given text is “**ababa”** then the output should be “**zyzyz”**

Declare a variable message and assign the value “**hello** **swift**”, then the output should be “**svool hdrug**”  
  
Answer:  
var text = "hello swift"

var result = ""

for char in text{

if char == " "{

result = result + " "

}

else{

result = result + code["\(char)"]!

}

}

print(output)

1. Write a function calcTemp which takes a parameter celcius and returns temperature in Fahrenheit and temperature in kelvin. (3 Marks)

Note : This function should return 2 double values.  
Answer:  
func calcTemp(celcius:Double)->(fahrenheit:Double,kelvin:Double){

let fahrenheit = (((celcius) \* (9/5)) + 32)

let kelvin = ((celcius) + 273.15 )

return (fahrenheit,kelvin)

}

let converted = calcTemp(celcius: 10)

print("The temp in fahrenheit is \(converted.fahrenheit)\nThe temp in kelvin is \(converted.kelvin)")

1. Write the syntax of the functions(protocol stubs) that needs to be over ridden for implementing a table view. (2 Marks)  
   Answer:

override func tableView(\_ tableView: UITableView, numberOfRowsInSection section: Int) -> Int {return 0}

override func tableView(\_ tableView: UITableView, cellForRowAt indexPath: IndexPath) -> UITableViewCell {

let cell = tableView.dequeueReusableCell(withIdentifier: "cellTypeIdentifier", for: indexPath)

cell.textLabel!.text = "Cell text"

return cell

}

5. Briefly write the steps on how to navigate from One View Controller to the Other View Controller in iOS. (3 Marks)  
Answer:  
  
 1. Embed the default view controller in the navigation controller.

2. Add a new viewcontroller from the component library.

3. Define a segue between the second viewcontroller and the default viewcontroller.

4. Give a name to the segue in the segue identifier

5. Add the newly created class name to the scene from the storyboard using class identifier.

6. Run the application and try the segue.

7. Any data that need to be passed between the controllers should be given in prepare method.

6. Write the significance of prepare method while developing the iOS Apps. (3 Marks)

Answer:

Prepare is called whenever there is transition between multiple controllers. This method is triggered at a time when user tried to navigate to other controller. If we want to pass the data to the second view controller then we will assign them in the prepare method.

7. Write a sample code to perform animation on an image in iOS. (3 Marks)  
  
Answer:  
//The image is hidden or opaque

UIView.animate(withDuration: 1, animations: {

self.ImageViewOutlet.alpha = 0.0

})

//Image will appear with the given duration

UIView.animate(withDuration: 1, delay: 0.2, animations: {

self.ImageViewOutlet.alpha = 1.0

self.ImageViewOutlet.image = UIImage(named:imageName)

})