

School of Computing Science and Engineering

Bachelor of Technology in Computer Science and Engineering
Semester End Examination - Jul 2024

Duration : 180 Minutes
Max Marks : 100

Sem VI - R1UC612C - Swift App Development

General Instructions

Answer to the specific question asked

Draw neat, labelled diagrams wherever necessary

Approved data hand books are allowed subject to verification by the Invigilator

- 1) Explain Swift's type inference and code safety features. K1(2)
- 2) Explain the concept of interpolation in Swift, showcasing its role in dynamically inserting values into strings. Provide a program that demonstrates the utilization of interpolation to enhance string output. K2(4)
- 3) Develop a program that utilizes arrays to initially store two shopping items, dynamically adds two more items, and removes the last item from the array, showcasing data manipulation within Swift. K2(6)
- 4) Develop a function called "add" that takes two optional integers as parameters and returns an optional integer. Utilize a guard statement to safely unwrap both parameters, returning nil in the guard body if either or both lack a value. If successfully unwrapped, return their sum. Call the function with non-nil numbers and once with at least one parameter being nil. K3(9)
- 5) Construct a dictionary in Swift, [String: String], with state names as keys and their respective capitals as values. Populate the collection with at least three key/value pairs, and utilize a for-in loop to iterate through the pairs, printing out the keys and values within sentences. K3(9)
- 6) Write a new introduction function called introduction. It should take two String parameters, name and home, and one Int parameter, age. The function should print a brief introduction. I.e. if "Mary," "California," and 32 were passed into the function, it might print "Mary, 32, is from California." Call the function and observe the printout. K5(10)
- 7) Envision creating an app for sharing favorite books. Devise a Book struct with four variable properties: title, author, pages, and price. Set default values such that title and author default to an empty string, pages to 0, and price to 0.0. K4(12)
- 8) Create Swift Structure and functions with different initializers for temperature conversion, underscoring the importance of mathematical precision and scientific computing within the software domain. K5(15)

- 9) Compare and thoroughly analyze Xcode in relation to other prominent development environments, providing a detailed explanation of the distinctive advantages that distinguish Xcode within the field of application development. K5(15)
- 10) Declare a String variable named "name" without assigning a value. Print "name" to the console. Does the code compile? Remove any non-compiling code. Assign a value to "name" and print it. Declare a variable "distanceTraveled" without an explicit type, set it to 0, and then assign the value 54.3. Does the code compile? If not, set an explicit type on "distanceTraveled" to make it compile. K6(18)