


Name:			
Enrolment No:			
UPES End Semester Examination, May 2023			
Course: Mobile Application Development on iOS Program: BTech CS (H+NH) Course Code: CSMC3012P		Semester: VI Time : 03 hrs. Max. Marks: 100	
Instructions: Attempt all Questions			
SECTION A (5Qx4M=20Marks)			
S. No.		Marks	CO
Q 1	Compare and summarize different swift pattern matching techniques.	04	CO1
Q 2	Compare App ID and Bundle ID. What do you mean by unnamed category?	04	CO2
Q 3	Once this code is executed, how many items will be in the result array? <pre>let names: [String?] = ["Barbara", nil, "Janet", nil, "Peter", nil, "George"] let result = names.compactMap { \$0 }</pre>	04	CO3
Q 4	What output will be produced by the code below? <pre>let bigNumber = Int.max let biggerNumber = bigNumber + 1 print(biggerNumber)</pre>	04	CO4
Q 5	Illustrate the process to respond to the state transition in your application with the help of an example.	04	CO5
SECTION B (4Qx10M= 40 Marks)			
Q 6	Derive the expression using XCode for convenience initializer, which allows the user to initialize a protocol to conform its standard by the reserved 'required' keyword.	10	CO1
Q 7	Define an enumeration named HandShape with three members: rock, .paper, .scissors. Define an enumeration named MatchResult with three	10	CO2

	members: .win, .draw, .lose. Write a function called match that takes two hand shapes and returns a match result. It should return the outcome for the first player (the one with the first hand shape).		
Q 8	You are given an array of dictionaries. Each dictionary in the array describes the score of a person. Print the leaderboard in the following format: 1. full name - score 2.... ... var people: [[String:Any]] = [[10	CO3
	OR		
Q 8	Analyze and compare Notification and NSNotification with the help of X Code.	10	CO3
Q 9	You are working on a game in which your character is exploring a grid-like map. You get the original location of the character and the steps he will take. A step. Up will increase the x coordinate by 1. A step. Down will decrease the x coordinate by 1. A step. Right will increase the y coordinate by 1. A step. Left will decrease the y coordinate by 1. Print the final location of the character after all the steps have been taken.	10	CO4
SECTION-C (2Qx20M=40 Marks)			
Q 10	Mario uses energy points to walk and jump. He can jump maximum maxJump meters up or down. You have the height of each 1-meter portion of a level in the heights array. Determine if Mario can finish the level and how much energy he needs to do it. Mario uses 1 energy point to walk one meter and 2 * jumpHeight energy points to jumpHeightmeters. Write a function named levelCost that takes heights and maxJump as parameters and returns -1 if Mario cannot finish the level or the total energy cost that he would need to finish the level. In the beginning Mario will be on the first 1-meter section of the level and the heights array will always have more than one element. All heights have a value greater or equal to 1.	20	CO5
	OR		

	Derive the method in swift for checking hierarchy of classes and its subclasses to check and cast those instances to make it as a same hierarchy. Also, demonstrate the usage of Any and Any Object using XCode.	20	CO5
Q 11	Suppose you wanted to maintain large collection of numbers, how can you store them such that you can efficiently insert new numbers, delete old numbers and check for the existence of a given number? Use buckets of the numbers' modulo a large fixed constant. The data structure managing these buckets is called a hash table. Use operations to test your solution and print the results for the existing operations.	20	CO1