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**ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)**  
 ORGANISATION OF ISLAMIC COOPERATION (OIC)  
 Department of Computer Science and Engineering (CSE)

MID SEMESTER EXAMINATION  
 DURATION: 1 HOUR 30 MINUTES

SUMMER SEMESTER, 2022-2023  
 FULL MARKS: 75

### CSE 4675: Mobile Application Development

Programmable calculators are not allowed. Do not write anything on the question paper.  
 Answer all 3 (three) questions. Figures in the right margin indicate full marks of questions with corresponding COs and POs in parentheses.

1. a) With proper justification, choose the most suitable approach for developing a web application from the following options:

- The classic use of HTML, CSS and JavaScript
- Leveraging ReactJs

8  
(CO2)  
(PO1)

- b) Differentiate between `var` and `let` keywords using Code Snippet 1, and draw the dissimilarities with stack procedure.

8  
(CO1)  
(PO1)

```

1 var v1 = 10;
2 let l2 = 17;
3 const f1 = () => {
4   var v0 = 9;
5   let l0 = 8;
6   if(l1){
7     let l1 = 7;
8     var v3 = 121;
9     console.log(l0);
10    console.log(l1);
11    console.log(v1);
12    console.log(l2);
13  }
14  //console.log(l1);
15  console.log(v3);
16 };
17 f1();
18 console.log(v0);
  
```

Code Snippet 1: A JavaScript code for Question 1.b

- c) What are the alternative methods of `console.log()` for the output method?

4  
(CO1)  
(PO1)

- d) Find the output of Code Snippet 2.

```

1 const names = ['atif', 'shafin', 'rahman', 'edon', 'jafri']
2
3 console.log(names.filter(nm => nm.length < 6))
  
```

Code Snippet 2: A JavaScript code for Question 1.d

5  
(CO2)  
(PO1)

2. a) IUTPS wants to launch a new mobile application to showcase photos. This application will have a few primary categories which are SHOOT-AT-IUT, Contests, and Winners. The categories are equivalent in hierarchy. All the categories should always be visible for quick access. IUTPS has requested a unique feature in which the title, SHOOT-AT-IUT, can be changed to something else, such as SHOOT-ON-16-December, based on the current contest. The contents are intended to be updated regularly. Since it is to showcase the photos, the application's UI is bound to be simple and efficient. Illustrate a mobile navigation pattern that is best for the given scenario with proper justification. 10  
(CO4)  
(PO2)
- b) Medication Tracker is a software that notifies users when they should take their medications. The developers used a side drawer navigation system positioned on the bottom. They added lots of primary categories with varying importance. The most important features were placed on the top, but sometimes scrolling is needed to access some of the features. Find the anti-patterns from the given scenario and discuss their respective solutions. 5  
(CO3)  
(PO2)
- c) State two reasons for which sidebars will never be considered as a persistent navigation pattern. 5  
(CO1)  
(PO1)
- d) Define and illustrate the Skeuomorphic pattern. 5  
(CO1)  
(PO1)
3. a) Find the output(s) of Code Snippet 3 for the following values of id variable: 5  
(CO2)  
(PO1)
- i. id = 8
- ii. id = 27

```

1 switch(true){
2   case (id%2)==0:
3     console.log('id is even');
4     break;
5   case (id%3)==0:
6     console.log('id is multiple of 3');
7   case (id%2)!=0:
8     console.log('id is odd');
9     break;
10  default:
11    console.log('id is nothing of the above');
12 }

```

Code Snippet 3: A JavaScript code for Question 3.a

- b) Replace the placeholders with proper keywords of react native so that Code Snippet 4 will render the Figure 1. 5  
(CO2)  
(PO1)



Figure 1: An image of a component for Question 3.b

```

1 import {Text,View,StyleSheet} from 'react-native'
2 import {useEffect,useState} from 'placeholder#1'
3 const CalculateExpense = ({expData}) => {
4
5   const [es,setEs] = useState(0)
6   const [pe,setPe] = useState(0)
7
8   'placeholder#2' (()=>{
9     if (expData && expData.length > 0){
10       let mn = new Date(expData[0].dt)
11       let mx = new Date(expData[0].dt)
12       let te = 0
13       expData.forEach((item,index)=>{
14         console.log(mn,mx, item,dt)
15         mn = Math.min(mn,new Date(item.dt))
16         mx = Math.max(mx,new Date(item.dt))
17
18         te += parseInt(item.exp)
19       })
20       setEs(te)
21       setPe((te / (( Math.abs(mx - mn) / (1000 * 60 * 60 * 24) )+1)).
22         toFixed(2))
23     } else {
24       setEs(0)
25       setPe(0)
26     }
27   },[expData])
28   return (
29     <View style={styles.timerContainer}>
30       <Text style={styles.elapsedTime}>'placeholder#3' ; {es}</Text>
31       <Text style={styles.title}>Per Day Expense : {pe}</Text>
32     </'placeholder#4'>
33   )
34 export default 'placeholder#5'

```

**Code Snippet 4:** A React Native code for question 3.b

c) Discuss the following three terms with examples:

2 x 3  
(CO1)  
(PO1)

- i. Asynchronous Programming
- ii. Setup function of useEffect
- iii. Conditional Rendering of React Native

d) Mention the output of Code Snippet 5.

4  
(CO2)  
(PO1)

```

1 const numbers = [45,4,9,16,25];
2 let txt = '';
3 numbers.forEach(myFunction);
4 function myFunction(value){
5   txt += value;
6 }

```

**Code Snippet 5:** A JavaScript code for Question 3.d

e) Differentiate between states and props of React Native.

5  
(CO1)  
(PO1)