University Of Barishal

DEPARTMENT OF COMPUTER SCIENCE & ENGINEEING(CSE)

LAB FINAL EXAMINATION

3rd YEAR, 2nd SEMESTER (2021-22)

COURSE CODE: CSE-3212

COURSE TITLE: Mobile App Development Lab

Part-01 (Theory)

Time: 1 Hour   Full Marks: 25

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1. A student writes the code below: 03

```
Row(
  children: [
    Row(children: [Icon(Icons.star), Text("BU")]),
    Row(children: [Icon(Icons.star), Text("CSE-08")]),
  ],
)
```

a) What will be the error/output?Why is this layout failing?

b) How would you fix it so the two inner Rows are shown side-by-side?Write one **fixed** snippet

2. Check the following codes: 02

```
class MyCounter extends StatelessWidget {
  int counter = 0;
  @override
  Widget build(BuildContext context) {
    return ElevatedButton(
      onPressed: () { counter++; print(counter); },
      child: Text('$counter'),
    );
  }
}
```

a) Why doesn't the number on screen update?

b) Show/explain the two key changes to fix it.

3. Check the following codes: 02

```
String getUsername() {
  String username = await fetchUserFromApi();
  return username;
}
```

a) Which keyword is missing in the function signature?

b) After fixing, what is the function's **return type**?

4. When will you use SingleChildScrollView?   01

5. Given a 5s delay in myFuture(): 02

```
void myFunc() {
  print("Mobile App");
  myFuture().then((_) => print("Development"));
  print("Lab");
}
```

Write the exact console order with timing.

6. Data Types from JSON 02

For {"id":101,"elements":["Sharif","Shariful",45.3,{"roll": "21CSE002"},"Sharifa"]}:

a) Dart type of the whole object? b) Dart type of "_elements_"?

7. You are updating a user's profile. When would you use the _PUT_ method, and when would you use the _PATCH_ method? In Dart, what is the key difference between a List and a Map? 02

8. Give one **technical** advantage of Native (Kotlin/Swift) and one **business** advantage of Flutter. 02

9. Explain the key difference between _FutureBuilder_ and _StreamBuilder_. Provide one clear, practical scenario for each. 02

10. Make child1 take **35 percent** and child2 take **65 percent** in a Row (write the minimal widget structure code). 02

12. A student puts an API fetch function inside their _build()_ method. They notice the API is called repeatedly, causing the screen to flicker. 02

    a) Why is this happening?

    b) Where is the correct lifecycle method to place this function so it only runs once?

13. Which _State_ lifecycle method is called _only once_ when the widget is first inserted into the tree? 01

14. In the Getx architecture, what is a **Dependency Injection**? 01

16. What is the primary purpose of the _dispose()_ method in a _State_ object? 01

Part-02 (App Development)

Time: 2 Hours   **Full Marks: 35**

Develop an mobile app using any frameworks/language complying the following instructions, APIs & Figma Design: 35

API Endpoints:

- Categories: `https://opentdb.com/api_category.php`
- Questions:
  `https://opentdb.com/api.php?amount=<number>&category=<id>&difficulty=<level>&type=multiple`

App's UI / Design prototype here: https://tinyurl.com/cse8-lab-exam-figma

Instructions: You don't need to follow the design 100%. Your goal is to get it as close to the design as possible. **Instructions link:** https://tinyurl.com/cse8-mad-lab-project-ins

Home → Categories → Start Quiz Form(Config) → Quiz → Results → Play Again

Best of Luck