# PSG COLLEGE OF ARTS & SCIENCE
## (AUTONOMOUS)
### BVoc DEGREE EXAMINATION MAY 2025
### (Sixth Semester)
### Branch – NETWORKING AND MOBILE APPLICATION
### FLUTTER & DART PROGRAMMING

Time: Three Hours                                   Maximum: 50 Marks

## SECTION-A (5 Marks)
### Answer ALL questions
### ALL questions carry EQUAL marks           (5 x 1 = 5)

1   What is Flutter primarily used for?
(i) Web development only
(ii) Native mobile app development only
(iii) Cross-platform app development
(iv) Game development

2   Which of the following is NOT a reason to use Dart?
(i) Dart is optimized for front-end development.
(ii) Dart is statically typed, providing type safety.
(iii) Dart can only be used for backend development.
(iv) Dart has fast compilation to native machine code.

3   What is the correct way to use an **Icon** widget in Flutter to display an icon?
(i) Icon('home')                (ii) Icon(Icons.home)
(iii) Icon('home_icon')       (iv) Icon(Icons.home, size: 30)

4   Which of the following methods is used to push a new screen onto the navigation stack in Flutter?
(i) Navigator.push()         (ii) Navigator.pushReplacement()
(iii) Navigator.pop()         (iv) Navigator.pushNamed()

5   Which Flutter widget is best used for creating flexible layouts that adapt to different screen sizes?
(i) Column                  (ii) Row
(iii) Flexible                 (iv) Scaffold

## SECTION - B (15 Marks)
### Answer ALL Questions
### ALL Questions Carry EQUAL Marks       (5 x 3 = 15)

6   a   Build the role of initState() and dispose() in a StatefulWidget
                   OR
   b   Identify the advantages and limitations of using statelesswidget over statefulwidget.

7   a   Examine the purpose of using comments in Dart code.
                   OR
   b   Determine a Dart function that takes two integer parameters and returns their sum. Then, use this function in the main() function to print the result of adding 5 and 10.

8   a   Build the basic widgets in Flutter? Give three examples.
                   OR
   b   Develop a Flutter code snippet that displays a message "Portrait Mode" if the device is in portrait orientation and "Landscape Mode" if in landscape orientation.

**Cont...**

9  a  Identify how does AnimatedOpacity control the opacity of a widget? Describe its basic functionality and what effect it has on the widget.

OR

    b  Develop a Flutter code snippet that uses BottomNavigationBar to create a simple navigation between three screens: Home, Search and Profile.

10  a  Analyze the role of the Scaffold widget in Flutter? Explain their purpose in the layout.

OR

    b  Inference the ListTile widget and its role in displaying individual items within a ListView.

## SECTION -C (30 Marks)
Answer ALL questions
ALL questions carry EQUAL Marks      (5 x 6 = 30)

11  a  Compare the widget tree and the element tree in Flutter. Highlight their differences and how they interact.

OR

    b  Examine a flutter application using customizable themes.

12  a  Analyze how do you organize code into multiple files and folders in a Dart project, and why is this practice important?

OR

    b  Analyze and explain about structuring widget with example.

13  a  Examine how the Text, Column, and Row widgets are used in Flutter. Provide an example where you use all three together to create a simple UI layout.

OR

    b  Inference and Build a login form with text field validation using the Form widget in Flutter.

14  a  Identify the purpose of the AnimatedContainer widget in Flutter. List at least three properties of the container that can be animated.

OR

    b  Build and Implement a Bottom Navigation Bar with three tabs Home, Profile and Settings.

15  a  Inference the GridView widget to display a collection of items (e.g., images or products) in a grid layout and explain how to optimize it for different screen sizes.

OR

    b  Compare the importance of layout in flutter with example.

Z-Z-Z            END