**Unit 1:**

1. Explain various layouts in Android and their purposes.
2. Describe the stages of the Activity Lifecycle in Android and their significance.
3. Provide an example illustrating the use of RadioButton and RadioGroup views in an Android application.
4. Define a spinner in Android and provide an example demonstrating its usage.
5. Write code to accept a username and password from the user in Android.
6. Develop an Android application that implements the DatePicker view.
7. Create an Android application to validate user credentials and display a message accordingly (Java code only).
8. Explain the architecture of Android with a diagram.
9. Discuss the steps to create an Android application that prints "hello world" and explain the purpose of Main Activity and XML files.
10. Explain the use of AutoCompleteTextView and Spinner controls in Android.

**Unit 2:**

1. Explain Drawables in Android and their types.
2. Describe how Themes and Styles can be used to customize UI design in Android with an example.
3. Define Services in Android and provide an example of their usage.
4. Explain Broadcast Receivers in Android and their role.
5. Discuss Notifications in Android and their features.
6. Define RecyclerView and provide an example of its implementation.

**Unit 3:**

1. Discuss different options for saving application data in Android.
2. Explain permissions in Android and provide code for granting camera and contacts access.
3. Define Loaders in Android and their characteristics.
4. List key performance recommendations for Android app development.
5. Write a note on using SQLite databases in Android applications.
6. Explain AdMob and its role in Android app development.

**Mix:**

1. Explain AutoCompleteTextView in Android and provide code to demonstrate its usage.
2. Differentiate between CheckBox and RadioButton in Android and provide the XML tag for CheckBox.
3. Describe AsyncTaskLoader in Android.
4. Discuss the history and evolution of Android.
5. Explain ProgressBarView in Android applications.

Unit 1

1. List and Explain various types Of layouts in android-
2. State and explain various stages Of Activity Lifecycle.
3. Explain with suitable example the use of RadioButton, and RadioGroup Views in android
4. What is a spinner? Explain with example-
5. Write the code for accepting user name and password from the user.
6. Write an android application to implement DatePicker View.
7. Develop an android application to accept a username as "sys" and password as "admin" in suitable control and if it is valid then display a message "Welcome!" else display a message "Invalid Login'". (Write only Java code).
8. Explain Architecture of android with a neat diagram
9. Discuss steps to make an application that prints "hello world" on an android device. State the purpose of Main Activity file and XML file.
10. Explain the use of following controls in two three lines.
    1. AutoCompleteTextView
    2. Spinner
11. List and explain various components of Android.
12. Develop an android applicauon to print Toast message like in the example using DatePicker and TimePicker. Example: "Hi! Your appointment is fixed on 3 June 2018 at 9AM” (Write only Java code).\_
13. Develop an android application to help a Telephone company to compute bill using the following data:
    1. Accept number of calls made by the user.
    2. Accept number of SMS sent by the user.

[Assume per call rate is 0.5 and SMS rate is Rs. 1. The final bill should take care of 180/0GST.l (Write only Java code).

1. Define android and discuss the advantages of android-
2. What is the purpose of TextView? Explain the following attributes of TextView control:
   1. id
   2. textColor
   3. text
   4. textStyle
3. Write a note on the following controls. Give suitable example.
   1. CheckBox
   2. ToggleButton
4. Discuss following callback methods with respect to activity:
   1. onCreate()
   2. onStart()
   3. onResume()
   4. onStop()
   5. onDestroy
5. Develop an android application to print Toast message like in the example using DatePicker and TimePicker. Example: "Hi! Your cab booking is done as per your request 3 June 2018 at 9AM". (Write only Java code).

Unit 2

1. Write a note on Drawables in android.
2. Explain how Themes and Styles can be used to customize user interface design in android application. Give suitable example.
3. What are Services in android? Give suitable example where Services can be used.
4. What is a Broadcast Receiver in android? Explain.
5. Write a note on Notifications in android.
6. What is Recycler View? Give suitable example,
7. What do you mean by menu? How do you create the same? Provide one small XMLexample.
8. List and discuss methods you need to implement in an AsyncTask class.
9. Explain life cycle of service in android-
10. Write a note on NotificationManager class along with example.
11. Define the term Snackbar in android. Provide one example.
12. Explain the concept of alarm manager with respect to the following points: Definition, characteristics, RTC and ERT.
13. Consider you have a menu consisting Of items red, green, blue. Write a method or provide a menu item click listener to change the background color respectively. [Write XML code for menu and the appropriate methods in Java.]
14. Write a note on notification with respect to the following:
    1. Definition
    2. To create a notification builder
    3. To set properties like content text, icon, title
    4. Attaching actions
    5. Issuing a notification.
15. Explain life cycle of service in android.
16. Write a note on Alarm Manager along with example.
17. In order to implement two factor authentication, an organization needs to develop an android application which will accept mobile number from user. On click of submit button display a message with the help of Snackbar that "OTP is sent on your number". [Write only JAVA code l.

Also state the difference between Toast and Snackbar.

1. What do you mean by material design in android? Explain the concept in detail.

Unit 3

1. What are the different option to save application data in android? Explain-
2. What are permissions in android? Write the relevant code to give permission to access camera and contacts to the application.
3. What are loaders in android? What are its characteristics? Explain.
4. Identify and list key performance related recommendation for an android application development.
5. Write a note on using SQLite databases for developing android application.
6. What is AdMob? Explain in detail.
7. List and explain various ways to store data in android in 2-3 lines.
8. Discuss AdMob in android application development with respect to following points: Concept, features and implementation-
9. State and explain various features of SQLite database.
10. Explain ACID properties of transaction.
11. List and explain various methods of ContentProvider.
12. As security is important for android devices, what are the best practices to implement security in an android app?
13. Write a short note on Shared Preferences.
14. Discuss the Google provided tools for advertisers the AdMob with respect to following points: Concept, features and implementation
15. Explain following with respect to database along with suitable example:
    1. Insert
    2. Select
    3. Update
    4. Delete
    5. Cursor
16. Discuss ACID properties of transaction,
17. What is a content provider? How does it work?
18. State the concept of performance. Discuss Memory monitor, CPU monitor, GPU monitor and Network monitor with respect to performance.

Mix

1. What is AutoCompleteTextView? Write a relevant code to demonstrate the use of AutoCompleteTextView in android.
2. How is CheckBox different from RadioButton in android? Write the XML tag for using CheckBox.
3. Write a note on AsyncTaskLoader.
4. Write a note on history and evolution of android.
5. Write a short note on ProgressBarView in android application.
6. Explain the purpose of following directories in android.

color/ , drawable/ , layout/ , raw/ , menu/

1. Develop an android application to accept rnarks of 3 subjects. Maximum marks are to be considered as 100. Find the percentage and display the grade in TextView. [Write only JAVA code]
2. What do you mean by material design in android? Explain the concept in detail-
3. Define or explain following with respect to android in 2-3 lines.
   1. gradle
   2. layout
   3. FloatingActionButton
   4. ANR
   5. manifest file
4. What is Firebase? List various features of the same.
5. Write XML code for the following GUL.

Name : [EditText] (Use textview for Name)

Password : [EditTextl (Use textview for Password)

Buttons : Submit and Cancel

Use Relative Layout with proper attributes.

1. How to perform back navigation in android? Provide one example.
2. Develop an application to play a music file. Provide necessary Steps for the same. [Write only Java code.]
3. Explain following terms in 2-3 lines.
   1. gradle
   2. layout
   3. Floating Action Button
   4. ANR
   5. manifest file
4. Firebase, a set of tools for mobile and web app developers. Justify the statement and list some features of Firebase.