Time: 2½ hrs.

Marks:75

Note:
1. All questions are compulsory with internal choice.
2. Draw neat diagrams wherever necessary.
3. Figures to the right indicate full marks.

Q.1   **Answer the following (any four)**   **(20)**
(a) Explain different features of Kotlin Language.
(b) Describe the Android architecture in detail.
(c) Define Constructor. Explain primary constructor with example in Kotlin.
(d) Write a note on Kotlin visibility modifiers.
(e) Explain the Android activity life cycle.
(f) Explain Kotlin when expression with example.

Q.2   **Answer the following (any four)**   **(20)**
(a) Explain Time Picker with its important attributes and method.
(b) Define Resources. Explain any three value resources.
(c) Write a note on Recycler View.
(d) Write a note on using SQLite databases for developing android application.
(e) What are different types of menus available in Android? Explain purpose and procedure to create any one type of menu.
(f) 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!".

Q.3   **Answer the following (any four)**   **(20)**
(a) What is animation? What are types of animation in Android? Write XML code for blink animation and Kotlin code to load animation.
(b) What is Broadcast Receiver in Android? Explain.
(c) Explain bound services in Android with different callback methods.
(d) What is AsyncTask? Explain the alternatives defined for AsyncTask in API Level 30 onwards.
(e) Explain touch gestures with example.
(f) What are the steps involved to publish your Android App on Play Store?

Q.4   **Answer the following (any five)**   **(15)**
(a) Write a program to demonstrate exception handling in Kotlin.
(b) Define and explain following with respect to Android:
     i.   Gradle
     ii.   manifest
(c) Explain with suitable example the use of Radio Button and Radio Group Views in Android.
(d) What is Intent? Explain different types of Intent.
(e) Explain MediaPlayer class with any three methods.
(f) Explain any three drawable resources.

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