

Nirma University

Institute of Technology

Semester End Examination (IR), December 2022
B.Tech. in Computer Science & Engineering, Semester VII
2CSDE76 MOBILE OPERATING SYSTEMS

Roll /
Exam No.

Supervisor's Initial
With Date

Time: 3 Hours

Total Marks: 100

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- Instructions: 1. Attempt all questions.
2. Figures to right indicate full marks.
3. Draw neat sketches wherever necessary.
4. Assume suitable data wherever necessary and clearly indicate it.

SECTION - I

Q.1 Answer the following questions: [14]

- A** Differentiate between open-source operating system and manufacturer built proprietary operating system. Give example of each operating system with explanation. [07]
CO 3
BL 4
- B** Explain the lifecycle of Android Activity with necessary diagram. [07]
CO 3
BL 2

Q.2 Do as directed: [36]

- A** Write a code snippet in Android to demonstrate the usage of ListView and Spinner by taking name of any 3 states of India in ListView. By clicking on a particular state from ListView, corresponding any 3 cities of the selected state should be displayed in the Spinner. [08]
CO 4
BL 3
- B** How the activities in Android will send/receive data or communicate to each other? Demonstrate this by showing following functionalities: [08]
CO 4
BL 3
Send 10 different numbers from first activity to second activity. The second activity should find the minimum and maximum number from these 10 numbers and send back to first activity. The first activity will display the received maximum and minimum numbers.
- C** Write a code snippet in Android to design a camera application which demonstrate how to record a video. [08]
CO 4
BL 3
- D** Write a code snippet in iOS to design a student information form. This form should make use of minimum four different GUI components. [12]
CO 4
BL 3

OR

- D** Write code snippet in Swift language for the following: [12]
CO 4
BL 3
- To convert the last three characters in upper case.
 - To check whether the last digit of the two given integer numbers is same or not.

- iii. To compute the sum of all the elements of a given array.
- iv. To take the first two characters from a given string and create a new string with same given string where the first two characters added at both the front and back (e.g. for given string “abcdef” the resultant string is “ababcdefab”).

SECTION-II

Q.3 Answer the following questions: [24]

CO 2

A Write any four security threats and their consequences with respect to mobile devices. [08]
CO 2
BL 2

OR

A Explain Secure Software Development Life Cycle (Secure-SDLC) to build security in application development process. [08]
CO 2
BL 2

B Consider a scenario where you as project manager decide to use hybrid mobile application development framework instead of native application development framework for new project. Justify your decision by providing critical comments on factors based on which you took this decision. [08]
CO 2
BL 5

C How and why does Indirect TCP isolate problems on the wireless link? [08]
CO 2
BL 2
What are the main drawbacks of Indirect TCP and what is the solution of it?

Q.4 Do as directed: [26]

A Why agent discovery is required in the wireless network? Explain both the approaches of agent discovery. [08]
CO 1
BL 2

B Explain the functionality of DFWMAC-DCF with RTS/CTS extension using appropriate diagram. [08]
CO 3
BL 2

C Discuss the following issues in wireless network with suitable diagram. [06]
CO 1
BL 4
(i) Hidden and exposed terminals
(ii) Near and far terminals

D Explain the registration process of a mobile node via the FA as well as directly with HA with suitable diagram. [04]
CO 3
BL 2

OR

D Explain IEEE 802.11 protocol architecture with suitable diagram. [04]
CO 3
BL 2