SNS COLLEGE OF ENGINEERING

Kurumbapalayam (Po), Coimbatore – 641 107

AN AUTONOMOUS INSTITUTION

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B.E., COMPUTER SCIENCE AND TECHNOLOGY

19CS603- MOBILE APPLICATION DEVELOPMENT

Academic Year 2022 – 2023

Year & Semester : **III / VI**
Subject : **MOBILE APPLICATION DEVELOPMENT**
Degree & Branch : **B.E.CST**

S.No	QUESTIONS	COMPETENCE	LEVEL
	UNIT -1 INTRODUCTION		
	Introduction to mobile applications – Embedded systems - Market and business drivers for mobile applications – Publishing and delivery of mobile applications – Requirements gathering and validation for mobile applications.		
	PART A		
1.	**Differentiate** verification and validation.	Analyze	BTL4
2.	**Define** Mobile application.	Remember	BTL1
3.	**Discuss** the uses of mobile application	Understand	BTL2
4.	**List** the advantages of mobile device in business application.	Remember	BTL1
5.	**Discuss** the essential task involved in publishing a mobile application.	Understand	BTL2
6.	How would you **classify** the activities involved in requirement gathering?	Apply	BTL3
7.	**Analyze** SMART requirements.	Analyze	BTL4
8.	**Access** requirement gathering.	Evaluate	BTL5
9.	**Quote** the term validation.	Remember	BTL1
10.	**Assess** why requirement gathering is a key?	Evaluate	BTL5
11.	**List** the advantages and disadvantages for mobile application.	Remember	BTL1
12.	**Rewrite** the necessity of RTOS.	Create	BTL6

13.	**Name** the types of mobile devices.	Remember	BTL1
14.	**List** the mobile application types.	Remember	BTL1
15.	**Examine** third party framework and its types.	Apply	BTL3
16.	**Give** the reason to build mobile application.	Understand	BTL2

17.	Can you **Classify** the myths in mobile application?	Apply	BTL3
18.	**Develop** and define third party framework.	Create	BTL6
19.	**Point ou**t the functionalities of mobile application.	Analyze	BTL4
20.	What do you **interpret** by the term MVC?	Understand	BTL2
	PART B (13 marks)		
1.	(i) **Explain** in detail about the Model viewcontroller.(7) (ii) **Explain** MVC with a neatdiagram.(6)	Analyze	BTL4
2.	(i) **Discuss** on Market drivers in mobileapplication.(7) (ii) **Discuss** about business drivers inMAD.(6)	Understand	BTL2
3.	(i) **Develop** an example narrating marketdrivers.(7) (ii) **Develop** an example narrating the difference in market & business drivers in MAD.(6)	Create	BTL6
4.	(i) **Explain** requirement gathering indetail.(7) (ii) **Identify** the terms verification and validation.(6)	Remember	BTL1
5.	(i) **Illustrate** about validation in MAD withexample.(7) (ii) **Classify** myths with suitableexamples(6)	Apply	BTL3
6.	(i) **Illustrate** about publishing. Explain its relevance in mobile application.(7) (ii) **Demonstrate** the delivery of mobileapplication.(6)	Apply	BTL3
7.	**(i) Summarize** on RTOS with example.(7) **(ii) Explain** the importance of delivery of mobileapplication.(6)	Evaluate	BTL5
8.	(i) **List** the simulators and emulators in mobile application.(7) (ii)**Tabulate** the difference between simulators & emulators. (6)	Remember	BTL1
9.	**Discuss** briefly the concept of RTOS with suitable example.(13)	Understand	BTL2
10.	Write short notes on the **list** given below (i) Market drivers & Businessdrivers.(7) (ii) Simulators &Emulators.(6)	Remember	BTL1
11.	(i) **Describe** about embedded system indetail.(7) (ii) **Describe** about the role of emulators in detail.(6)	Remember	BTL 1
12.	**Give** in detail the working of MVC with a neat diagram.(13)	Understand	BTL 2

13.	(i) **Point out** the importance of publishing in MAD. (7) (ii) **Analyze** on Requirement gathering. (6)	Analyze	BTL 4
14.	(i) **Explain** about publishing and delivery of mobile app. (7) (ii) **Explain** the importance of embedded system with example. (6)	Analyze	BTL 4
	PART C (15 marks)		
1.	**Analyze** the features of J2ME with an example.	Analyze	BTL4
2.	**Assess** a case study for various feature of MAD.	Evaluate	BTL5
3.	**Develop** a program that creates the following kind of menu i. cut ii. Copy	Create	BTL6
4.	**Develop** a program that narrates the event handling in a menu	Create	BTL6

UNIT –II BASIC DESIGN

Introduction – Basics of embedded systems design – Embedded OS - Design constraints for mobile applications, both hardware and software related – Architecting mobile applications – User interfaces for mobile applications – touch events and gestures – Achieving quality constraints –performance, usability, security, availability and modifiability.

	PART A		
1.	**List** some of the components in embedded system design.	Remember	BTL1
2.	**Discuss** on embedded system with example.	Understand	BTL2
3.	**Point out** the difference between embedded system and embedded OS.	Analyze	BTL4
4.	**Deduce** the characteristics of mobile devices.	Evaluate	BTL5
5.	**Rewrite** the challenges in developing mobile application.	Create	BTL6
6.	**Assess** advantages and disadvantages of 2-tier architecture.	Evaluate	BTL5
7.	**Classify** the components of UI toolkit.	Apply	BTL3
8.	**Show** the advantages of gestures over touch events.	Apply	BTL3
9.	**Predict** the design issues during the development of mobile application.	Understand	BTL2
10.	**Discuss** on pan event.	Understand	BTL2
11.	**List** out the general design consideration in MAD.	Remember	BTL1
12.	**Classify** the importance of finger tap.	Analyze	BTL4
13.	**Prepare** an example for swipe operation in mobile devices.	Create	BTL6
14.	**Show** the usage of long tap.	Apply	BTL3
15.	**Name** cohorts.	Remember	BTL1
16.	**Tabulate** the guidelines in designing exception management.	Remember	BTL1
17.	**Describe** life time value.	Remember	BTL1
18.	**Describe** about OWASP.	Remember	BTL1

19.	What do you **infer** from the word tampering?	Analyze	BTL4
20.	**Give** the requirements in achieving quality constraints.	Understand	BTL2
	PART B (13 marks)		
1.	(i) **Demonstrate** the importance of embedded OS.(7) (ii) **Illustrate** Embedded OS architecture with a neat diagram.(6)	Apply	BTL3
2.	**Summarize** in detail about the embedded system design.(13)	Evaluate	BTL5
3.	(i) Compare and **Contrast** embedded system & embeddedOS.(7) (ii) **Express** the importance of embedded OS.(6)	Understand	BTL2
4.	(i) **Describe** about mobileapplication.(4) **(ii)** With a neat diagram explain mobile application architecture **list** some examples.(9)	Remember	BTL1
5.	(i) **Relate** hardware and software design constrain(4) (ii) **Classify** various user interfaces in mobile application(9)	Apply	BTL3
6.	Write short notes on the **list** given below: (i) Touchevents(7) (ii) Gestures(6)	Remember	BTL1
7.	(i) **Generalize** the different types of mobile OS in detail.(7) (ii) **Prepare** the comparison of hardware & software constrains .(6)	Create	BTL6
8.	(i) **Discuss** the role of quality constrains in mobile applications.(7) (ii) Write and **discuss** on performance & usability.(6)	Understand	BTL2
9.	Write and **discuss** on performance, usability, security, availability and modifiability.(13)	Understand	BTL2
10.	(i) State and **explain** the hardware constraints in mobile design.(7) (ii) **Explain** with the example the UI.(6)	Analyze	BTL4
11.	(i) **Describe** the term architecting on mobileapplications.(7) (ii) Create an example **where** touch events & gestures areshown.(6)	Remember	BTL1
12.	(i) **Point out** the role of qualityconstrain.(7) (ii) Compare and **contrast** between software& hardware design constrains.(6)	Analyze	BTL4
13.	(i) **Describe** the different types of MobileOS.(7) (ii) **List** the features considered for a successful mobileapplication.(6)	Remember	BTL1
14.	**Explain** the significance of quality in mobile applications also narrate the various constrains in designing an application in mobile.(13)	Analyze	BTL4

Part C (15 Marks)			
1.	**Analyze** a case study which narrates the slide show which has 3 slides and the slide changes after 5 seconds and the 3rd slide returns back to the first slide.	Analyze	BTL4
2.	**Summarize** a case study that shows the MIDP application for quiz questions.	Evaluate	BTL5
3.	**Create** an MIDP program to examine the phone number entered by the user is wrong.	Create	BTL6
4.	**Create** a program that shows the app relating the aptitude type questions.	Create	BTL6

UNIT III ADVANCED DESIGN

Designing applications with multimedia and web access capabilities – Integration with GPS and social media networking applications – Accessing applications hosted in a cloud computing environment – Design patterns for mobile applications.

PART A			
1.	**Name** the web access for Novell iFolder 2.x and 3.	Remember	BTL1
2.	**List** out the capabilities for web access	Remember	BTL1
3.	**Analyze** the flowchart integrating GPS with mobile application.	Analyze	BTL4
4.	**Discuss** on mobile cloud architecture.	Understand	BTL2
5.	**Define** MCA with a neat diagram.	Remember	BTL1
6.	Can you **list** the challenges for mobile cloud computing?	Remember	BTL1
7.	**Summarize** the different types of social media.	Evaluate	BTL5
8.	**Give** the different design patterns for mobile application.	Understand	BTL2
9.	**Predict** the types involved in interactive multimedia applications.	Understand	BTL2
10.	**Create** an example for showing the characteristics of multimedia. Application.	Create	BTL6
11.	**Show** the process of structuring information in multimedia form	Apply	BTL3
12.	**Analyze** the different applications for multimedia.	Analyze	BTL4
13.	**Compare** the different applications in cloud computing environment.	Evaluate	BTL5
14.	**Show** the use of GPS	Apply	BTL3
15.	**Describe** about web access	Remember	BTL1
16.	**Analyze** the issues in social media networking.	Analyze	BTL4
17.	**Give** advantages and disadvantages of GPS.	Understand	BTL2
18.	**List** the advantages of web applications.	Remember	BTL1

19.	**Develop** an example for mobile cloud computing.	Create	BTL6
20.	**Show** the access control in cloud computing.	Apply	BTL3
	PART B (13 Marks)		
1.	**Describe** about the steps involved in designing multimedia application.(13)	Understand	BTL1
2.	**(i) Describe** the concept of Digital video. (7) **(ii) Quote** a brief note on Electronic mail. (6)	Remember	BTL1
3.	(i) **Give** various steps to create web app in Access 2013.(7) (ii) **Discuss** the concepts of customization of web app.(6)	Remember	BTL2
4.	**Summariz**e the various multimedia applications(13)	Understand	BTL2
5.	Design and **Illustrate** mobile cloud architecture (13)	Apply	BTL3
6.	(i) **Describe** the impact of GPS on mobile application. (7) (ii) **List** various steps for GPS & mobile app integration. (6)	Remember	BTL1
7.	(i) **Relate** the impact of global positioning system(7) (ii) **Demonstrate** on various design patterns for developing mobile application. (6)	Apply	BTL3
8.	**Analyze** about various challenges for mobile cloud computing. (13)	Analyze	BTL4
9.	(i) **Integrate** the role of mobile networks in social media application.(7) (ii) Explain and **develop** an example for mobile networking in social media.(6)	Create	BTL6
10.	(i) **Deduce** an example application for MCE.(7) (ii) **Summarize** on mobile cloud environment.(6)	Evaluate	BTL5
11.	**Describe** in detail about the interactive multimedia application. (13)	Remember	BTL1
12.	(i) **Discuss** about design patterns of mobile application. (7) (ii) **Summarize** on the integration of GPS & mobile application. (6)	Understand	BTL2
13.	**Explain** (i) Creating web app. (7) (ii) Customizing web app. (6)	Analyze	BTL4
14.	(i) **Explain** about the constraints in mobile cloud computing. (7) (ii) **Analyze** the role of mobile networks in social media. (6)	Analyze	BTL4
	PART C (15 marks)		
1.	**Analyze** the PNG app in the mobile application development process.	Analyze	BTL4
2.	**Summarize** the case study for drawing a bar chart or graph.	Evaluate	BTL5

3.	**Develop** a program for maintaining a database for storing the player's details.	Create	BTL6
4.	**Create** an application that includes the RMS device for storing information and retrieving the same for some other purpose	Create	BTL6

UNIT IV TECHNOLOGY I - ANDROID

Introduction – Establishing the development environment – Android architecture – Activities and views – Interacting with UI – Persisting data using SQLite – Packaging and deployment –Interaction with server side applications – Using Google Maps, GPS and Wi-Fi – Integration with social media applications.

PART A

1.	**Define** android operating system.	Remember	BTL1
2.	**Show** how do you establish the android development environment?	Apply	BTL3
3.	**Define** user interface.	Remember	BTL1
4.	**Name** the layers present in android architecture.	Remember	BTL1
5.	**Give** the important blocks of application framework**.**	Understand	BTL2
6.	**Quote** android activities and views.	Remember	BTL1
7.	**Classify** the types of user interface in android.	Apply	BTL3
8.	**Point out** how to create interactive services in android?	Analyze	BTL4
9.	**Analyze** about Persisting data in SQLite.	Analyze	BTL4
10.	**Show** an example for application deployment	Apply	BTL3
11.	**Describe** about Application Packaging.	Remember	BTL1
12.	**Define** client server model.	Remember	BTL1
13.	**Assess** how do you work with a server-side application?	Evaluate	BTL5
14.	**Evaluate** the features of Wi-fi.	Evaluate	BTL5
15.	**Rewrite** the role of GPS in android devices & its features.	Create	BTL6
16.	**Summarize** about the need for Wi-fi in Google map.	Understand	BTL2
17.	Can you **discuss** the three ways to integrate social media?	Understand	BTL2
18.	**Analyze** the importance of social media networks.	Analyze	BTL4
19.	**Rewrite** the tools used in social media integration.	Create	BTL6
20.	**Discuss** the popularity of android mobile applications	Understand	BTL2

PART B (13 marks)

1.	(i) **Describe** in detail about the android architecture.(13)	Remember	BTL1
2.	(i) **Discuss** about the activities inandroid.(7) (ii) **Interpret** views inandroid.(6)	Understand	BTL2
3.	(i) **Demonstrate** on user interface in androids.(7)	Apply	BTL3

	(ii**) Illustrate** about the various types of user interface.(6)		
4.	(i) **Develop** an example to show the interaction withUI.(7) (ii)**Formulate** the steps for interacting withUI.(6)	Create	BTL6
5.	(i) **Describe** in detail about Persisting data using SQLite(7) (ii) **List** out the various application packages.(6)	Remember	BTL1
6.	**Identify** and explain in detail about packaging and its applications.(13)	Remember	BTL1
7.	(i) Discuss on Google maps. (7) (ii)Give a note on GPS and Wi-Fi.(6)	Understand	BTL2
8.	**Explain** the basics of android and the android architecture. (13)	Evaluate	BTL5
9.	(i) Demonstrate in detail the deployment tools.(7) (ii) Classify about the server side application.(6)	Apply	BTL3
10.	(i) How do you **infer** the integration with social media applications?(7) (ii) **Explain** about UI and its types.(6)	Analyze	BTL4
11.	**(i) List** out the activities and views. (7) **(ii) Explain** about packaging and deployment.(6)	Remember	BTL1
12.	**Summarize** on the following (i) Need for Wi-Fi in Google map.(7) (ii) GPS and Wi-Fi.(6)	Understand	BTL2
13.	(i) **Compare and contrast** interacting with UI & serverside applications.(7) (ii) **Explain** in detail how to interact with the server side applications.(6)	Analyze	BTL4
14.	**Explain** in detail about the integration of social media applications with suitable example. (13)	Analyze	BTL4
	PART C (15 marks)		
1.	**Analyze** the case study for developing the networked app using the wireless toolkit.	Analyze	BTL4
2.	**Summarize** the application which has the manual entry for the chart generation.	Evaluate	BTL5
3.	**Create** an application for authenticating the web services	Create	BTL6
4.	**Develop** a sample program for showing the SOCKET connection.	Create	BTL6

UNIT V TECHNOLOGY II – IOS

Introduction to Objective C – iOS features – UI implementation – Touch frameworks – Data persistence using Core Data and SQLite – Location aware applications using Core Location and Map Kit – Integrating calendar and address book with social media application – Using Wi-Fi - iPhone market place.

	PART A		
1.	**List** out the features of iOS.	Remember	BTL1
2.	**Give** the usage of Touch Framework.	Understand	BTL2
3.	**Define** Data Persistence.	Remember	BTL1
4.	**Express** the need of Core Location.	Understand	BTL2
5.	**Infer** Map kit.	Analyze	BTL4
6.	**List** the applications of map kit framework.	Remember	BTL1
7.	**List** some uses of core location.	Remember	BTL1
8.	**Express** how to locate the application using core location in iOS?	Understand	BTL2
9.	Can you **develop** a note to explain the data present in calendar?	Apply	BTL6
10.	**Give** the uses of data present in address book.	Understand	BTL2
11.	**Analyze** how to integrate calendar in social media?	Analyze	BTL4
12.	**Summarize** how to integrate address book in social media?	Evaluate	BTL5
13.	**Describe** Wi-Fi.	Remember	BTL1
14.	**List** out the uses of Objective C	Remember	BTL1
15.	**Discover** an example for UI, what are the rules of UI?	Apply	BTL3
16.	**Analyze** the term SQLite.	Analyze	BTL4
17.	**Classify** the features of iOS.	Apply	BTL3
18.	Can you **illustrate** on multiview application?	Apply	BTL3
19.	**Summarize** the term Grand central Dispatch.	Evaluate	BTL5
20.	**Rewrite** the frameworks present in touch framework.	Create	BTL6
	PART B (13 marks)		
1.	(i) **Describe** in detail about theiOS(7). (ii) **List out** the design issues iniOS.(6)	Remember	BTL1
2.	(i) **Analyze** various concepts of userinterface.(7) (ii) **Explain** the basic concepts behind user interface implementation iniOS.(6)	Analyze	BTL4
3.	(i) Narrate and f**ormulate** the touch frameworks.(7) (ii)**Develop** the steps for UI implementation.(6)	Create	BTL6
4.	**Explain** in detail about iOS features(13)	Understand	BTL2
5.	(i) **Deduce** and explain the data persistence using core data.(7) (ii) **Explain** the location aware application using core location.(6)	Evaluate	BTL5
6.	(i)**Describe** the location aware application using core location and map kit(13)	Remember	BTL1

7.	**(i) Summarize** on the location aware application using map kit(7) **(i) Describe** briefly about the deployment issues of mobile applications in iPhonemarketplace.(6)	Understand	BTL2
8.	**(i) Demonstrate** Wi-Fi in iPhone devices. (7). **(ii) Classify** the integration of calendar with social media application.(6)	Apply	BTL3
9.	**Describe** briefly the integration of calendar and address book with social media application**.**(13)	Remember	BTL1
10.	**Illustrate** in detail the design methodology involved in developing calendar application using objective C.(13)	Apply	BTL3
11.	(i) **Describe** data persistence using core data.(7) (ii) **Describ**e data persistence using SQLite.(6)	Remember	BTL1
12.	(i) **Discuss** Wi-Fi in iPhone devices.(7) (ii) **Describe** about the touch frameworks.(6)	Understand	BTL2
13.	(i) **Explain** in detail about integration of address book with social mediaapplication.(7) (ii) **Point out** the design issues ofiOS.(6)	Analyze	BTL4
14.	**Analyze** the various deployment issues of mobile applications in iPhone marketplace.(13)	Analyze	BTL4
	PART C (15 marks)		
1.	**Analyze** a case study that explains the Enquiry application.	Analyze	BTL4
2.	**Summarize** a case study for showing the web application.	Evaluate	BTL5
3.	**Create** a J2ME program for showing the http server login.	Create	BTL6
4.	**Develop** a program by using the Apache Tomcat as the server and MySQL as the database	Create	BTL6