

**PAN AFRICA CHRISTIAN UNIVERSITY
BACHELORS OF INFORMATION COMMUNICATION TECHNOLOGY
END OF TERM EXAMINATION**

DEPARTMENT: COMPUTING & INFORMATION TECHNOLOGY
COURSE CODE: BIT/BBIT305
CAMPUS: ROYSAMBU
COURSE TITLE: MOBILE APPLICATION DEVELOPMENT
EXAM DATE: TUESDAY
TIME: START HOUR -2.00-4.00PM

INSTRUCTIONS

- This exam carry a total of SIX Questions of [10 Marks Each]
- Section One (I) is compulsory.
- Answer any 3(Three) Questions from Section Two (II)
- Read all questions carefully before attempting.

SECTION A

(Answer ALL questions in this section)

Question 1 (10 Marks)

- a) Explain the function of the manifest.xml file in Android (2 Marks)
- b) Discuss two importance of user interaction and hardware consideration in Mobile application development. (2 Marks)
- c) Explain the process of displaying a Google Map in your Android Phone during the development process. (2 marks)
- d) Describe any two android application components. (2 marks)
- e) Discuss two reasons why testing is important before deployment on real device. (2 marks)

SECTION B

((Answer any THREE (3) questions in this section))

Question Two (10 Marks)

- a) Being an expert in mobile application development, discuss two ways stay updated on mobile security trends. (2 Marks)
- b) A systems development company has consulted you to execute a mobile application testing on their new developed application before deployment. Describe the technical criteria you will consider while selecting a test automation tool. (4 Marks)
- c) Mobile applications can be broadly categorized into several types based on their functionality and purpose. Briefly describe two categories of mobile applications. (4 Marks)

Question Three (10 marks)

- a) Caching is used to improve the performance and responsibilities of mobile application and to support operation when there is no network connection. Explain any two factors consider when designing caching. (4 Marks)

- a) write the xml code to produce a login page with the follow elements. (6 marks)

textfield-name

textfield-password

submit button

cancel button

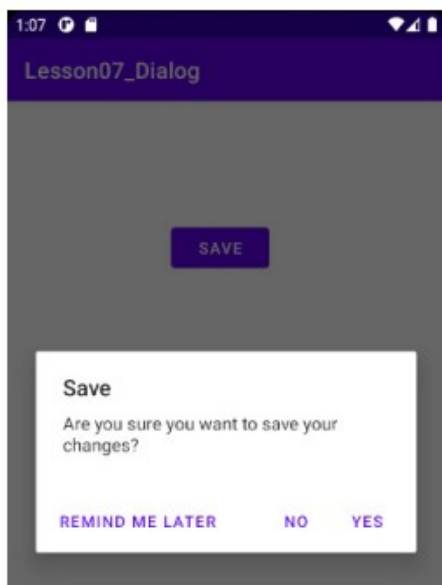
Question Four (10 marks)

- a) Android application has an architecture framework. Sate four main parts of the architecture. (4 Marks)
- b) Mobile application development can be implemented in one of three approaches. Describe the circumstances under which each of these approaches may be suitable for use over the other approaches. (6 Marks)

Question Five (10 Marks)

- a) As illustrated in the image below, when the app user taps the SAVE button in this Android app, this user gets a message with three buttons. Explain correctly the Kotlin code of this app.

(4 Marks)



- b) Describe each of the following data synchronization methods. (6 marks)
- i. Using marge replication

- ii. Using web serves
- iii. RDA (remote data access)

Question Six (10 Marks)

Case study

Mobile app development for Retail Company Background: A prominent retail company, XYZ Retail, envisions launching a mobile application to enhance customer engagement and streamline the shopping experience. The app aims to provide users with personalized recommendations, seamless browsing of products, easy checkout, and integration with the company's loyalty program.

Project Initiation: XYZ Retail assembled a cross-functional team comprising developers, designers, QA analysts, and project managers to spearhead the mobile app development. The project kickstarted with detailed discussions on the app's features, target audience, and technological requirements.

Challenges Faced:

1. Scope Management: Midway through development, the stakeholders proposed additional features, including a live chat support function and integration with a new payment gateway.
2. Resource Allocation: Unexpectedly, a key developer had to take extended leave due to personal reasons, causing a gap in critical coding tasks.
3. Timeline Pressure: The marketing team accelerated their campaign, desiring an earlier app launch than initially planned, putting pressure on the development schedule.

Responses and Actions:

1. Scope Management: The project manager facilitated discussions among stakeholders to prioritize the new features and assessed their impact on the timeline and budget. A revised project scope was agreed upon, emphasizing essential functionalities for the initial release while scheduling the additional features for subsequent updates.
2. Resource Allocation: To manage the absence of the developer, the team redistributed tasks among available resources and hired a temporary consultant to fill the void temporarily. Regular progress meetings were held to ensure continuity in development.
3. Timeline Pressure: The project manager collaborated with all teams involved to reassess the feasibility of an earlier launch. A revised project plan was formulated, highlighting trade-offs and potential risks to ensure a balance between quality and speed.

Outcomes: Despite the challenges faced, XYZ Retail successfully launched the mobile application within an acceptable timeframe. The initial release included core functionalities such as browsing, purchasing, and integration with the loyalty program. The additional features were subsequently added in post-launch updates, keeping the app fresh and meeting evolving user needs.

Questions addressing Factors Affecting Communication and People Management in Project Management:

1. Identify three specific instances from the case study where effective communication positively influenced project outcomes regarding resource allocation or scope management. How did these instances contribute to successful people management within the project team?
(10 Marks)

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