Roll No……..….. **Total No. of Printed Pages: 1**
Total No. of Questions: [11]

M. Tech. CSE (Semester – 2nd)
MOBILE APPLICATIONS AND SERVICES
Subject Code: MCSES1203
Paper ID: [23190212]

Time: 03 Hours **Maximum Marks: 60**

Instruction for candidates:

1. Section A is compulsory. It carries 16 marks. It consists of 4 questions of 4 marks each.
2. Section B consist of 4 questions of 8 marks each. The student has to attempt any 3 questions out of it.
3. Section C consist of 3 questions of 10 marks each. The student has to attempt any 2 questions.

Section – A **(4 marks each)**

Q1. Explain the significance of mobile software engineering in the development of Android applications.

Q2. Describe the role of frameworks and tools in Android development environment.

Q3. Discuss the importance of synchronization and replication of mobile data in Android applications.

Q4. How does Android handle notifications and alarms? Mention the performance considerations associated with them.

Section – B **(8 marks each)**

Q5. Discuss the process of packaging and deploying Android applications. Highlight the best practices for optimizing performance during deployment.

Q6. Explain the role of graphics in Android applications, emphasizing performance and multithreading considerations. How does Android handle graphics and UI performance optimization?

Q7. Evaluate the challenges faced in mobile app development, including architecture, design, and technology selection. How can these hurdles be addressed effectively?

Q8. Describe the security concerns associated with Android applications. How can developers mitigate risks related to hacking and ensure the security of their apps?

Section – C **(10 marks each)**

Q9. Explore recent trends in communication protocols for IoT nodes and their integration with mobile computing techniques. How do these trends influence Android application development for IoT?

Q10. Discuss the concept of agent-based communications in IoT and its relevance to mobile computing. How can Android platforms support such communication paradigms effectively?

Q11. Analyze the importance of location mobility and location-based services in Android applications. How do developers leverage Android's capabilities in this domain?