# PARUL UNIVERSITY
## FACULTY OF ENGINEERING & TECHNOLOGY
### M.Tech. Winter 2019 - 20 Examination

Semester: 3                                      Date: 26/11/2019
Subject Code: 203202230                          Time: 10:30 am to 1 pm
Subject Name: Mobile Applications and Services   Total Marks: 60

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**Instructions:**
1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

**Q.1** A) What is mobile computing? Explain mobile communication, mobile hardware and mobile software in detail **(05)**

B) Explain Dalvik Virtual machine **(05)**

C) Explain multithreading Vs. concurrency in android **(05)**

**Q.2** **Answer the following questions**. (Attempt any three) (Each five mark) **(15)**
A) Explain types of layout in android application.
B) Describe following UI controls of android in detail
    1. Textview 2. Spinner 3. AutoCompleteTextView 4. CheckBox 5. RadioButton
C) Distinguish between multimodal and multichannel UI.
D) Write the benefits of mobile application development.

**Q.3** A) Explain android architecture in detail. **(07)**
B) Describe the methods for text to speech in android application **(08)**
**OR**
B) Discuss memory management in android application **(08)**

**Q.4** A) List out and explain mobile app development hurdles. **(07)**
**OR**
A) Write a note on recent trends in Communication protocols for IOT nodes **(07)**
B) Explain Android's Security model. **(08)**