

**IMSc IT SD Sem.-7 Examination
SMD-705**

Mobile Architecture and App. Development

Time : 2-30 Hours]

December-2025

[Max. Marks : 70

Instructions:

- 1. Attempt all questions.**
- 2. Make suitable assumptions wherever necessary.**
- 3. Figures to the right indicate full marks.**

- 1. Answer these questions in short.(Any 5) (10 Marks)**
 - a. Name one short-range wireless technology used in mobile devices.
 - b. What does SIM stand for?
 - c. GPRS is which generation network?
 - d. What is the full form of PSTN?
 - e. Name any one component of a mobile handset.
 - f. Which needs more processing power on the phone: Thin Client or Fat Client?
 - g. What is one major disadvantage of mobile web apps?
- 2. Answer these questions briefly.(Any 10) (30 Marks)**
 - a. Briefly explain the concept of frequency reuse in cellular networks.
 - b. What is the main difference between GSM and GPRS?
 - c. Describe the role of a base station in a mobile network.
 - d. Explain the purpose of the SIM card in a mobile handset.
 - e. What are the two major power consumers in a modern smartphone?
 - f. Differentiate between Thin Client and Fat Client mobile applications.
 - g. What is the primary function of device drivers in a mobile phone?
 - h. Name and briefly explain any two hardware components inside a mobile handset.
 - i. What is meant by "mobile client-server architecture"?
 - j. Explain the term "dynamic content" in mobile web applications.
 - k. Give one advantage and one disadvantage of mobile web apps over native apps.
 - l. What is the main advantage of using RSS in mobile web context?
 - m. Briefly describe how power management works in modern smartphones.
- 3. Answer these questions in detail.(Any 2) (30 Marks)**
 - a. Describe the architecture of mobile web applications (web server, application server, web services). Explain how dynamic content, RSS/feeds and mobile advertising are integrated, and outline best practices for optimizing performance, usability and security for mobile users.
 - b. Draw and explain the OSI layer model for mobile communication. Compare it with the actual protocol stack of GSM/GPRS and clearly show which GSM/GPRS layer maps to which OSI layer with proper justification.
 - c. Discuss the SIM card in depth: its architecture, functions (identification, authentication, storage, application hosting), SIM Toolkit services, and the evolution to eSIM/iSIM. Evaluate associated security features and challenges.