

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE- SEMESTER-VII (NEW) EXAMINATION – WINTER 2020****Subject Code:2170710****Date:25/01/2021****Subject Name:Mobile Computing and Wireless Communication****Time:10:30 AM TO 12:30 PM****Total Marks: 56****Instructions:**

1. Attempt any FOUR questions out of EIGHT questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Define Channel capacity. What is Shannon's capacity formula for noisy channel? **03**  
(b) List and explain the types of antenna in wireless network with their applications. **04**  
(c) Compare LAN, MAN and WAN with proper diagram. **07**
- Q.2** (a) Describe Wireless application protocol. **03**  
(b) Classify Guided and Unguided media. Show the use of Guided media in real world. **04**  
(c) Define Mobile IP. Explain Agent discovery, Registration and Data transfer in Mobile IP. **07**
- Q.3** (a) List and explain functionality of Serving GPRS Support Node(SGSN) and Gateway GPRS Support Node(GGSN). **03**  
(b) What are the common layouts available in Android? Elaborate any two layouts. **04**  
(c) Define Radio propagation. List and explain propagation modes. **07**
- Q.4** (a) Classify and express Services provided by IEEE 802.11. **03**  
(b) When Hidden station and Exposed station problem arise in wireless **04**  
(c) Draw and explain GSM architecture. **07**
- Q.5** (a) Define and explain Android Framework. **03**  
(b) Show the use of below GSM Identifiers. **04**  
i) IMEI ii) IMSI iii) MSISDN iv) MSRN  
(c) Explain Amplitude shift keying(ASK), Frequency shift keying(FSK) and Phase shift keying(PSK) in digital-to-analog conversion. **07**
- Q.6** (a) Justify, Why Hexagon cell shape is used in cellular network? **03**  
(b) Define Handover. List and explain the types of handover. **04**  
(c) Draw and explain Bluetooth protocol stack. **07**
- Q.7** (a) State the difference between Ad hoc and Infrastructure network. **03**  
(b) Explain Extended service set(ESS) and Basic service set(BSS) in 802.11 architecture. **04**  
(c) Enlist and explain Error detection methods in cellular wireless network. **07**
- Q.8** (a) List the functionality of Service Discovery Protocol(SDP). **03**  
(b) Explain Piconet and Scatternet. **04**  
(c) Sketch and express meaning of every component of Android architecture. **07**

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