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**PRESIDENCY UNIVERSITY  
BENGALURU**

**SCHOOL OF ENGINEERING  
END TERM EXAMINATION - JAN 2023**

**Semester :** Semester V - 2020

**Course Code :** ECE3056

**Course Name :** Sem V - ECE3056 - Wireless Communication and Networks

**Program :** B.Tech. - ECM/ECI

**Date :** 13-JAN-2023

**Time :** 9.30AM - 12.30PM

**Max Marks :** 100

**Weightage :** 50%

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**Instructions:**

- (i) Read all questions carefully and answer accordingly.
  - (ii) Question paper consists of 3 parts.
  - (iii) Scientific and non-programmable calculator are permitted.
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**PART A**

**ANSWER ALL THE FIVE QUESTIONS**

**5 X 2 = 10M**

1. The interference between the neighbouring base stations is avoided by -----and reusing the same channel after a certain amount of distance.  
(CO1) [Knowledge]
2. A TDMA is a multiple access technique that allows the user to have \_\_\_\_\_  
(CO2) [Knowledge]
3. \_\_\_\_\_ It allows an orderly growth of cellular system. By defining new cells which have a smaller radius than the original cells, capacity increases due to additional number of channels per unit area.  
(CO3) [Knowledge]
4. In wireless network is any device that will allow the wireless devices to a wired network \_\_\_\_\_ and also router is the best example.  
(CO4) [Knowledge]
5. The device that usually stores all the user-related data relevant to the GSM mobile system is known as the \_\_\_\_\_. It is a kind of integrated circuit that securely holds the IMSI (or International Mobile Subscriber Identity).  
(CO5) [Knowledge]

## PART B

### ANSWER ALL THE TWO QUESTIONS

2 X 15 = 30M

6. a. The huge improvements in wireless communication and have expanded the capabilities of our wireless communication system. We all have seen various generations in our life. Compare all generations. (10M)  
b. Give the features of AMPS. (5M)  
(CO5) [Comprehension]
7. Wi-Fi is a wireless LAN that is certified by the Wi-Fi Alliance, a global, non-profit industry association. Explain its architecture and services.  
(CO4) [Comprehension]

## PART C

### ANSWER ALL THE THREE QUESTIONS

3 X 20 = 60M

8. Mobile cellular subscription refers to the subscription to a public mobile cellular service which provides access to the Public Switched Telephone Network (PSTN) using cellular technology. It includes postpaid and prepaid subscriptions and includes analogue and digital cellular systems. Describe call making procedure between  
i) From subscriber to mobile user  
ii) From mobile user to subscriber.  
(CO4) [Application]
9. The single omni-directional antenna is replaced by several directional antennas dedicated in their own sectors. Explain the concept of cell sectoring. Explain the need for repeaters and also explain the micro-cell zone concept.  
(CO2) [Application]
10. There are several characteristics of wireless LANs, that either do not apply to wired LANs or the existence of which is negligible and can be ignored. Explain the characteristics of wireless LANs. The most important issue we need to discuss in a wireless LAN is access control. Explain the hidden station problem.  
(CO3) [Application]

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