

School: SOE	Level: BE	Invigilator's Sign:
Program: BEEE	Year/Part: III/II	Superintendent's Sign:
Subject: Wireless Communication (EG661EX)		Code No.

- i. Answers should be given by filling the Multiple-Choice Questions' Answer Sheet.
ii. The main answer sheet can be used for rough work.

Code No.

GROUP A (Multiple-Choice Questions)	[10x1=10]	Time: 20 Minutes
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- Which of the following is a characteristic of wireless communication?**
 - Requires physical connections for data transmission
 - Uses electromagnetic waves for data transmission
 - Always requires high bandwidth
 - Requires line-of-sight transmission only
- Which of the following is NOT a major factor affecting mobile radio propagation?**
 - Reflection
 - Diffraction
 - Amplification
 - Scattering
- What is the primary cause of multipath fading in mobile radio channels?**
 - High transmission power
 - Variations in frequency
 - Multiple reflections from obstacles
 - Increased bandwidth
- The Hata model is an empirical model used for:**
 - Indoor wireless communication
 - Free-space propagation
 - Path loss prediction in urban and suburban areas
 - Predicting satellite communication losses
- Time Division Multiple Access (TDMA) is based on:**
 - Dividing users based on different frequencies
 - Assigning different time slots to different users
 - Using spread spectrum codes
 - Transmitting all signals at once
- In the cellular concept, what does "cell" refer to?**
 - A single frequency band
 - A base station location with a specific coverage area
 - A mobile device in the system
 - A channel used for communication
- In cellular systems, "interference" is a problem when:**
 - Multiple base stations are using the same frequency within close proximity
 - The number of mobile users is too low
 - There is too much distance between base stations
 - The frequency spectrum is used inefficiently
- What is the primary difference between MSK and GSK modulation?**
 - MSK has a constant envelope, while GSK has variable amplitude
 - MSK uses a continuous phase, while GSK uses discrete phase shifts
 - MSK uses Gaussian pulses, while GSK uses rectangular pulses
 - MSK is more bandwidth-efficient than GSK
- Which frequency bands are primarily used by GSM for communication?**
 - 900 MHz and 1800 MHz
 - 700 MHz and 1800 MHz
 - 800 MHz and 1900 MHz
 - 2.4 GHz and 5 GHz
- What is the primary goal of LTE in mobile communication?**
 - To provide voice-only services
 - To enhance data transmission speeds and improve system efficiency
 - To replace 3G networks with improved voice quality
 - To enable satellite-based communication

Multiple Choice Questions' Answer Sheet

Marks Secured: _____

In Words: _____

Examiner's Sign: _____ Date: _____

Scrutinizer's Marks: _____

In Words: _____

Scrutinizer's Sign: _____ Date: _____

Corrected Fill			
(A)	(B)	(C)	(D)
Incorrect Fill			
(X)	(B)	(C)	(D)

1. (A) (B) (C) (D)	6. (A) (B) (C) (D)
2. (A) (B) (C) (D)	7. (A) (B) (C) (D)
3. (A) (B) (C) (D)	8. (A) (B) (C) (D)
4. (A) (B) (C) (D)	9. (A) (B) (C) (D)
5. (A) (B) (C) (D)	10. (A) (B) (C) (D)

Manmohan Technical University
Office of the Controller of Examinations
Exam Year: 2082, Jestha

School: SOE	Level: BE	Time: 3 Hours
Program: BEEE	Year/Part: III/II	Full Marks: 50
Subject: : Wireless Communication (EG661EX)		

- ✓ Candidates are required to give their answers in their own words as far as practicable.
- ✓ The figures in the margin indicate **Full Marks**.
- ✓ Assume suitable data if necessary.

GROUP A (Multiple-Choice Questions in separate paper)

[10×1=10]

GROUP B (Short Answer Questions - *Attempt Any Eight Question*)

[8×2=16]

1. Discuss about the evolution of mobile radio communication.
2. Explain the different types of radio wave propagation mechanisms. Discuss the factors that affect each mechanism.
3. What is multipath fading, and how does it impact radio wave propagation? How can it be eliminated.
4. Differentiate between FDMA and TDMA.
5. What is the purpose of frequency reuse in wireless network? Explain in brief
6. Explain the concept of **handover** (or handoff) in a cellular system.
7. Why OFDM is essential in wireless communication?
8. How location registration and mobile identification is done in GSM system ?
9. Discuss about software defined radio in detail.

MODEL QUESTION

GROUP C (Long Answer Questions – *Attempt Any Six Questions*)

[6×4=24]

10. What is wireless local loop? Explain with the help of appropriate diagram
11. A wireless communication system uses a frequency of 1 GHz. Calculate the wavelength of the signal and the free space path loss at a distance of 2 km.
12. A mobile station is moving at a speed of 30 km/h. Calculate the Doppler shift for a signal frequency of 2 GHz.
13. Discuss umbrella cell concept and handoff strategies in detail.
14. Explain GMSK and write its advantages.
15. How is GSM signal processing and speech coding done. Illustrate
16. Write short notes on
 - a) Rayleigh and Rician distribution
 - b) MIMO systems

THE END