

Reg. No. :

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

**Question Paper Code : 10541**

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2025.

Sixth Semester

Electronics and Communication Engineering

EC 8652 – WIRELESS COMMUNICATION

(Common to : Computer and Communication Engineering/Electronics and  
Telecommunication Engineering)

(Regulations 2017)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define Path Loss.
2. What is Coherence Time?
3. State the significance of Frequency reuse.
4. How hand off mechanism improve QoS?
5. State the difference between FDM and OFDM.
6. Draw the structure of wireless Communication Link.
7. State the difference between Macro and Micro Diversity.
8. What is the need for Equalization technique in communication System?
9. Compare SISO with MIMO system.
10. Define Pre-coding.

PART B — (5 × 13 = 65 marks)

11. (a) Derive the mathematical expression for two ray ground model with necessary illustrative diagram.

Or

- (b) Explain the impulse response characteristics of flat and frequency selective fading.

12. (a) Compare and contrast various multiple access mechanism namely TOMA, COMA and FDMA.

Or

- (b) Explain the working mechanism of cell splitting, sectoring and micro zone cell concept.
13. (a) Explain the working mechanism of GMSK and compare its performance with MSK.

Or

- (b) Enumerate the type of channel fading and explain the error performance and control in fading channels.
14. (a) State the significance of adaptive equalization, differentiate non-linear equalizer with linear equalizer. Also explain working mechanism of zero-forcing algorithm.

Or

- (b) Explain the working mechanism of selection combining and maximal ratio combining diversity techniques and compare their features.
15. (a) Derive the mathematical formulation for spatial multiplexing system.

Or

- (b) Explain the working mechanism of Rake Receiver and significance of channel state information in determining the capacity of flat fading channel.

PART C — (1 × 15 = 15 marks)

16. (a) With suitable cellular communication, explain the working mechanism of trunking concept adopted to determine the grade of service.

Or

- (b) Explain the working mechanism of OFDM system, also discuss the significance of cyclic prefix and PAPR in determining the performance of the system.