



विश्वजीवनमृतं ज्ञानम्

# Atal Bihari Vajpayee Indian Institute of Information Technology & Management, Gwalior

## IT307: Wireless Communication Technologies

Major Examination (Session 2023–24)

Maximum Time: 3 Hours

Max Marks: 60

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*Note: Attempt any five questions. Figures must be drawn clearly for full credit.*

1. (a) Explain the architecture of GSM. (b) Discuss how handoff is managed in GSM networks. (10 Marks)
2. (a) Derive the expression for signal-to-interference ratio (SIR) in a cellular system. (b) Show how cell splitting improves system capacity. (10 Marks)
3. (a) Describe the concept of multipath propagation. (b) Explain equalization techniques used to combat intersymbol interference. (10 Marks)
4. Compare and contrast 3G, 4G, and 5G technologies in terms of architecture, bandwidth, and latency. (8 Marks)
5. (a) Explain Orthogonal Frequency Division Multiplexing (OFDM). (b) Highlight its advantages and limitations in wireless systems. (10 Marks)
6. Write short notes on any two: (i) Smart antennas and MIMO (ii) Mobile IP (iii) Satellite communication in wireless networks (12 Marks)