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Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

B.Tech Degree S8 (S, FE) / S8 (PT) (R, S) Examination June 2023 (2015 Scheme)



Course Code: EC404

Course Name: ADVANCED COMMUNICATION SYSTEMS

Max. Marks: 100

Duration: 3 Hours

PART A

Answer any two full questions, each carries 15 marks.

Marks

- 1 a) Briefly describe the four major sections of a microwave terminal station. (8)
- b) Explain the basic principles of MPEG-2 video coding. (7)
- 2 a) Explain the need for protection switching arrangements. Compare the two types of protection switching arrangements. (7)
- b) Explain with block diagram the complete Digital Video Broadcasting Transmission/Reception chain. (8)
- 3 a) Describe a microwave repeater. Explain the principle of operation of two types of baseband repeaters. (8)
- b) Explain the working principles of plasma displays. Compare it with LCD and LED displays (7)

PART B

Answer any two full questions, each carries 15 marks.

- 4 a) Explain with block diagram Direct to Home Satellite Systems (7)
- b) Compare wireless Personal Area Networks and Wireless Local Area Network. (4)
- c) Explain the important features of fourth generation wireless technologies. (4)
- 5 a) Describe WLL technology. (7)
- b) Explain briefly the perturbation of satellite orbit. Describe various reasons for orbit perturbations. (8)
- 6 a) Explain Satellite Subsystems. Mention the functions of each segment in subsystems. (8)
- b) Explain the important features of Bluetooth technology. (7)

PART C

Answer any two full questions, each carries 20 marks.

- 7 a) Discuss knife edge diffraction model with suitable diagram and derive the expression for Fresnel Kirchhoff diffraction parameter and radius of the n^{th} Fresnel zone circle. (10)
- b) Explain different types of Spread Spectrum Multiple Access. (10)
- 8 a) Explain the concept of cell splitting, cell sectoring, repeaters and microcell. (10)
- b) Explain what you understand by traffic routing in wireless networks. Discuss different types of it. (5)
- c) Explain the concepts of Push To Talk (PTT) technology. (5)
- 9 a) Explain with block diagram MIMO systems in wireless propagation mechanism. (10)
- b) Explain the architecture of General Packet Radio Service (GPRS) with figure. (10)
