

Reg No.: \_\_\_\_\_

Name: \_\_\_\_\_

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**  
**EIGHTH SEMESTER B.TECH DEGREE EXAMINATION, MAY 2019**

**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) With a block schematic explain microwave radio IF repeater station.                 | (8)  |
|   | b) Explain Hot standby protection switching arrangement of a microwave radio system.   | (7)  |
| 2 | a) With a block diagram explain the DVB-T system.                                      | (10) |
|   | b) How the diversity is enhancing the performance of radio wave propagation?           | (5)  |
| 3 | a) How the images compressed with the help of Discrete Cosine Transform(DCT)? Explain. | (10) |
|   | b) Compare LED and LCD display systems.  | (5)  |

**PART B**

*Answer any two full questions, each carries 15 marks.*

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|---|---|-----|
| 4 | a) Explain the effect of Non-spherical shape of earth on a satellite orbit.   | (5) |
|   | b) With the help of a block diagram briefly explain Satellite Transponder Subsystem.  | (5) |
|   | c) A satellite TV signal occupies the full transponder bandwidth of 36 MHz and it must provide a $C/N$ ratio at the destination earth station of 22 dB. Given that the total transmission loss is 210 dB and the destination earth station $G/T$ ratio is 31 dB/K. Calculate the satellite EIRP required.<br>Given value $k$ in dB is - 228.6 dB. | (5) |
| 5 | a) Briefly describe about global positioning satellite system.  | (5) |
|   | b) With the help of figure, describe WLL technology and its advantages.   | (7) |
|   | c) Mention the features of Bluetooth.   | (3) |
| 6 | a) What are the different versions of WLAN.   | (5) |
|   | b) Compare 1G, 2G,3G & 4G systems.  | (7) |
|   | c) State the differences between TDD & FDD in cellular communications.  | (3) |

**PART C**

*Answer any two full questions, each carries 20 marks.*

- 7 a) What is meant by small-scale fading? List out the factors influencing small-scale fading. (5)
- b) With necessary diagrams explain the technique 'Hand off '. Describe the different Hand off strategies. (10)
- c) Describe knife edge diffraction model. (5)
- 8 a) Write a short note on MIMO systems. (5)
- b) Give the concepts of Push To Talk (PTT) technology. (5)
- c) Explain in detail about the characteristics and network architecture of GPRS. (10)
- 9 a) Explain the OFDM implementation of multicarrier modulation with necessary diagrams. (6)
- b) Describe the traffic routing in wireless networks. (8)
- c) Explain Digital Enhanced Cordless Telecommunications (DECT) data service. (6)

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