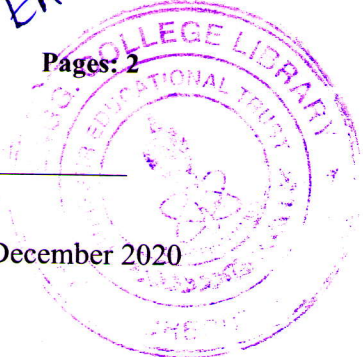


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Reg No.: \_\_\_\_\_

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

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**

Seventh Semester B.Tech Degree Examination (Regular and Supplementary), December 2020

**Course Code: EE401**

**Course Name: Electronic Communication**

Max. Marks: 100

Duration: 3 Hours

**PART A**

*Answer all questions, each carries 5 marks.*

- |   |                                                                                        | Marks |
|---|----------------------------------------------------------------------------------------|-------|
| 1 | How DSB-FC wave is generated using diode nonlinearity?                                 | (5)   |
| 2 | Explain the working of AGC circuit.                                                    | (5)   |
| 3 | With relevant sketch explain the principle of operation of any one of the camera tube. | (5)   |
| 4 | Explain the sampling theorem used in pulse modulation.                                 | (5)   |
| 5 | Highlight the role of FDMA in satellite communication.                                 | (5)   |
| 6 | Explain frequency hopping referred to CDMA.                                            | (5)   |
| 7 | State the basic requirements of fibre optic light sources.                             | (5)   |
| 8 | Explain cell sectoring technique.                                                      | (5)   |

**PART B**

*Answer any two full questions, each carries 10 marks.*

- |    |                                                                                                                        |      |
|----|------------------------------------------------------------------------------------------------------------------------|------|
| 9  | a) With the help of neat schematic, prove that the balanced modulator produces an output consisting of sidebands only. | (10) |
| 10 | a) Explain with neat block diagram, the generation of SSB using phase shift method.                                    | (6)  |
|    | b) Describe the frequency spectra of SSB and VSB signals.                                                              | (4)  |
| 11 | a) With necessary circuit and phasor diagrams, explain the working of Foster Seeley discriminator.                     | (10) |

**PART C**

*Answer any two full questions, each carries 10 marks.*

- |    |                                                                                   |     |
|----|-----------------------------------------------------------------------------------|-----|
| 12 | a) Explain the operation of a typical cable TV system with a neat sketch.         | (6) |
|    | b) In a television the Picture and Sound modulations are distinct. Explain.       | (4) |
| 13 | a) Differentiate between Luminance and chrominance signal in a colour television. | (5) |
|    | b) Draw and explain the schematic diagram of a wireless CCTV configuration.       | (5) |
- How does it differ from wired CCTV system?

- 14 a) Explain the schematic for PPM generation process. (6)  
b) Distinguish between ideal, natural and Flat top sampling. (4)

**PART D**

*Answer any two full questions, each carries 10 marks.*

- 15 a) Explain the block diagram of a satellite repeater. (5)  
b) Explain SDMA referred to satellite communication. (5)
- 16 a) Explain the steps involved in call processing in cellular communication for: (6)  
i) mobile to mobile, ii) mobile to wire line.  
b) Give the difference between co-channel interference and adjacent channel interference. (4)
- 17 a) Write notes on ZigBee architecture. (5)  
b) With a schematic explain the principle of WiMax system. (5)

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