

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Seventh Semester B.Tech Degree Supplementary Examination June 2022 (2015 Scheme)

**Course Code: EE401****Course Name: ELECTRONIC COMMUNICATION**

Max. Marks: 100

Duration: 3 Hours

PART A*Answer all questions, each carries 5 marks.*

Marks

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| 1 | Explain why SSB modulation scheme requires the minimum transmitted power and minimum channel bandwidth? Explain with suitable characteristics. | (5) |
| 2 | What is the role of automatic volume control/AGC in AM? Explain with the help of an AGC circuit and its characteristics. | (5) |
| 3 | Explain the essential components required for a monochrome TV transmitter with relevant schematics. | (5) |
| 4 | What is PAM and why it is inferior to other pulse modulation techniques? | (5) |
| 5 | What is the role of transponders in satellite communication? | (5) |
| 6 | With relevant characteristics explain the selection criteria for the light sources for optic fiber communication? | (5) |
| 7 | What is the role of SDMA in mobile communication? | (5) |
| 8 | Why Zig Bee is suitable for home automation applications? Draw a simple layout of Zig Bee system to convey the network connectivity. | (5) |

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

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| 9 | a) With relevant characteristics explain the advantages and applications of VSB. | (4) |
| | b) Explain how the modulation index affects the power and bandwidth in DSB full carrier AM and DSB suppressed carrier AM? | (6) |
| 10 | a) Explain the salient features of a low level AM transmitter. | (5) |
| | b) Explain the role of a balanced slope detector in FM receiver stage. | (5) |
| 11 | a) Explain any one method for generation of FM. | (5) |
| | b) How the disadvantages of a direct tuned receiver are eliminated in a superheterodyne receiver? Explain. | (5) |

PART C

Answer any two full questions, each carries 10 marks.

- 12 a) How does a HDTV differ from standard TV broadcasting? (4)
b) Draw the block diagram of pulsed RADAR and explain the function of each block. (6)
- 13 a) With schematic diagram explain a typical digital communication system using PCM. (6)
b) With schematic diagram explain how do you implement PAM demodulation unit. (4)
- 14 a) With suitable layouts, differentiate between CCTV and Cable TV. (6)
b) Compare between PWM and PPM. (4)

PART D

Answer any two full questions, each carries 10 marks.

- 15 a) How multiple accessing is possible with FDMA techniques? Why guard band is required? (4)
b) How an avalanche pn photo detector does improve the performance of optical fibre communication system? (6)
- 16 a) How is cell sectoring implemented? Why is it needed? (6)
b) Explain any one of the call procedure involving mobile system. (4)
- 17 a) Explain the block diagram schematic of a typical optic fiber communication system. (6)
b) When do you prefer WiMax. Explain with typical application fields. (4)
