



QP CODE: 24027192



24027192

Reg No :

Name :

**B.Sc DEGREE (CBCS) REGULAR / IMPROVEMENT / REAPPEARANCE
EXAMINATIONS, OCTOBER 2024**

Third Semester

B.Sc Physics Model II Applied Electronics

VOCATIONAL COURSE - AE3VOT06 - COMMUNICATION ELECTRONICS

2017 Admission Onwards

C8CC2E01

Time: 3 Hours

Max. Marks : 60

Part A

*Answer any **ten** questions.*

*Each question carries **1** mark.*

1. What is the band of frequency used in sky wave?
2. Define Peak height for a layer in Ionosphere.
3. What is fading?
4. What is modulation index?
5. Give two methods for the generation of FM wave.
6. Explain the basic principle of FM detection.
7. Give the equation of modulation index of AM signal.
8. What is image frequency in a superheterodyne receiver?
9. What is radiation resistance of an antenna?
10. State any two applications of radar.
11. Give examples of uplink and downlink frequencies.
12. What is the significance of hand off procedure in cellular communication system?

(10×1=10)

Part B

*Answer any **six** questions.*

*Each question carries **5** marks.*





13. Draw and explain basic block diagram of a radio transmitter.
14. Describe skywave communication. Explain skip distance and MUF.
15. An AM transmitter has a carrier power of 50W. The percentage of modulation is 80%. Calculate (i) the total power (ii) the power in one side band.
16. Obtain an expression for power in AM wave.
17. A 100MHz carrier is frequency modulated by 10 kHz wave. For a frequency deviation of 50 kHz, calculate the modulation index of the FM signal.
18. Describe any two analog pulse modulation techniques.
19. Determine the length of an antenna operating at a frequency of 500 kHz.
20. List the components of a Yagi-Uda array. Why is it called a super gain antenna.
21. What is the duty cycle of a radar with a PW of 3 μ s and a PRT of 6ms?

(6×5=30)

Part C

*Answer any **two** questions.*

*Each question carries **10** marks.*

22. With neat diagrams, explain the principle and properties of: (i) Ground wave; (ii) Sky wave and (iii) Space wave propagations. Discuss their applications.
23. Derive the expression for the FM wave, when a sine wave carrier $V_c \sin \omega_c t$ is modulated using $V_m \sin \omega_m t$.
24. Discuss analog and digital pulse modulation techniques with neat waveforms.
25. Explain the various antenna parameters in detail with appropriate equations.

(2×10=20)

