SECTION – A

ANSWER ALL QUESTIONS: **(10 x 3 = 30)**

1. Mention two advantages of FM over AM.
2. What is pulse amplitude modulation?
3. What is attenuation of a wave?
4. What is space wave propagation? Give few applications.
5. Mention few uses of Radar.
6. What is velocity modulation?
7. What are meridinial and skew Rays**?**
8. How are optic fibers classified?
9. What is cellular concept of communication?
10. What is Bluetooth?

SECTION – B

ANSWER ANY FIVE QUESTIONS: **(5 x 5 = 25)**

11. The total power content of an AM wave is 1.5 kW at a depth of modulation of 80%. Calculate the power content of the carrier and each sideband.
12. What is the effect of curvature of Earth on wave propagation?
13. Explain the principle of pulse radar system.
14. A step-index optical fiber with $\mu_{core} = 1.5$ and $\mu_{cladding} = 1.4$ is used in water environment ($\mu = 1.33$). Calculate the numerical aperture and the acceptance angle.
15. What are the basic structure and conditions for light propagation through optic fiber?
16. Calculate the maximum range of a radar system which operates at 4cm with a peak power of 600 KW, if its minimum receivable power is 10^{-13} W, the capture area of the antenna is $5m^2$ and the Radar cross section area of the target is $20m^2$.
17. Discuss about Wireless Local Area Networks (W-Lan) with example**.**

SECTION – C

ANSWER ANY THREE QUESTIONS: **(3 x 15 = 45)**

18. What is amplitude modulation? Obtain and discuss the equation for energy distribution in amplitude modulated wave.
19. (a) Discuss about the effect of atmosphere on the wave communication.
    (b) Explain the effect of ionosphere and its stratifiation.
20. Explain the principle and working of a magnetron with a neat diagram.
21. Explain the development of different stages of generation of networks.

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