Avinashilingam Institute for Home Science and Higher Education for Women

(Deemed to be University under Category 'A' by MHRD, Estd. u/s 3 of UGC Act 1956)
Re-accredited with 'A+' Grade by NAAC. Recognised by UGC Under Section 12B
Coimbatore - 641 043, Tamil Nadu, India

Bachelor's Degree Examination – August 2020
VI Semester

Class : III UG **Time : 2 Hours**
Major : Physics **Max. Marks : 50**

15BPHC24 Communication Electronics

Part A **10 x 1 = 10**
Choose the Correct Answer

1. In amplitude modulation, bandwidth is _____ the audio frequency
   a. thrice b. four times
   c. twice d. same

2. Demodulation is done in
   a. radio receiver b. transmitter
   c. receiving antenna d. transmitting antenna

3. In superhetrodyne principle provides sensitivity at ____ stage.
   a. RF b. IF
   c. audio d. before RF

4. In a radio receiver noise is generally developed at
   a. IF stage b. receiving antenna
   c. audio stage d. RF stage

5. In an optical fiber, the concept of numerical aperture is applicable in describing the ability of
   a. light scattering b. light collection
   c. light dispersion d. light polarization

6. Single mode fibers allow single mode propagation, the cladding diameter must be at least
   a. twice the core diameter b. thrice the core diameter
   c. five times the core diameter d. ten times the core diameter

7. Which of the following type of multiplexing use pulse code modulation?
   a. Frequency Division Multiplexing
   b. Time Division Multiplexing
   c. Code Division Multiplexing
   d.Amplitude Limited Multiplexing

8. In pulse amplitude modulation
   a. frequency of the pulse train is varied
   b. amplitude of the pulse train is varied
   c.width of the pulse train is varied
   d. all the above

9. A transponder is a satellite equipment which
   a. receives a signal from earth station
   b. changes the frequency of the received signal
   c. retransmits the received signal
   d. all the above

10. A satellite signal transmitted from a satellite transponder to earth's station is
   a. down link b. up link
   c. Terrestrial d. Earth bond

Part B 3 x 6 = 18

Answer any **Three** questions

Each answer should not exceed 400 words or two pages

11. What is demodulation? Why is necessary?

12. List out the difference between FM and AM.

13. Write down the different types of AM radio receivers.

14. Write a short note on selectivity.

15. What are the advantages of fiber optic communications?

16. Explain the principles of optical fiber.

17. Explain about time division multiplexing.

18. Write a note on codes.

19. Describe about the antenna system.

20. Explain the functions of transponder.

Part C 2 x 11 = 22

Answer any **Two** questions

Each answer should not exceed 800 words or four pages

21. i. What is modulation? Why is modulation necessary in communication system?
    ii. Write a short note on power in Amplitude modulated wave.

22. i. What do you understand by frequency modulation? Explain its advantages over amplitude modulation.
    ii. What are the limitations of Amplitude modulation?

23. What is superhetrodyne principle? Explain the function of each stage of superhetrodyne receiver with the help of a block diagram and mention its advantages.

24. Discuss in detail about double conversion receivers and also explain about image frequency rejection.

25. Derive an expression for numerical aperture and acceptance angle.

26. Discuss the fiber optic communication system with its block diagram.

27. Explain about frequency division multiplexing with necessary diagram.

28. Discuss briefly about pulse amplitude modulation.

29. Write a note on satellite orbit and satellite position.

30. Explain in detail about the linkages used in satellite communication.

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