



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 – June 2021
VI Semester

Class : III UG
Major : Physics

Time : 3 Hours
Max. Marks: 100

18BPHC24 Communication Electronics

Part A

10 x 1 = 10

Choose the Correct Answer

- The process by which amplitude, frequency and phase of the wave is varied in accordance with the signal wave is called _____
a. Modulation
b. Demodulation
c. Amplification
d. Detection
CO1,K1
- For 100% modulation, the energy is distributed between the carrier and the side bands at a ratio of ____
a. 3:1
b. 2:1
c. 1:1
d. 1:3
CO1 K2
- In a radio receiver, noise is generally developed at _____
a. IF Stage
b. receiving antennae
c. audio stage
d. RF Stage
CO2 K1
- The Superheterodyne principle provides selectivity at _____stage.
a. RF
b. IF
c. Audio
d. before RF
CO2 K3
- When a ray of light enters a glass medium from air, then
a. its wavelength decreases
b. its wavelength increases
c. its frequency increases
d. neither wavelength nor frequency change
CO3 K3
- An optical fibre core and its cladding have refractive indices of 1.56 and 1.49 respectively. What will be its NA?
a.0.4721
b.0.4621
c.0.4521
d.0.4421
CO3 K3
- Time- division multiplex _____
a. can be used with PCM Only
b. combines five groups into a super group
c. stacks 24 channels in adjacent frequency slots
d. interleaves pulses belonging to different transmissions.
CO4 K2
- Indicate which one of the following systems is digital?
a. Pulse-position modulation
b. Pulse-code Modulation
c. Pulse-width modulation
d. Pulse-Frequency Modulation
CO4 K1
- Synchronous Satellites orbit the earth once in _____ hours.
a. 24
b. 12
c. 1
d. 6
CO5 K 2
- The terrestrial base of the satellite communication system is ____
a. space
b. Earth
c. Antenna
d. Satellite
CO5 K2

Part B

5 x 6 = 30

Answer ALL questions

Each answer should not exceed 400 words or two pages

- 11.a. What is modulation? Why is modulation necessary in communication system? CO1 K 4
(or)
- 11.b. Explain about the side band frequencies in an amplitude modulated wave? CO1 K 2
- 12.a. Explain about the advantages of superheterodyne circuit. CO2 K 2
(or)
- 12.b. Define the following terms used in receiver circuit, CO2 K 2
a. Signal to noise ratio b. Sensitivity
c. Selectivity
- 13.a. Compute the NA, acceptance angle and the critical angle of the fibre having CO3 K 3
core refractive index is 1.5 and the cladding is 1.45.
(or)
- 13.b. Explain about the fibre optic communication system CO3 K 2
- 14.a. List the merits of PCM. CO4 K 2
(or)
- 14.b. Explain about the pulse amplitude modulation. CO4 K 2
- 15.a. Explain the function of transponders in satellite communication CO5 K 2
(or)
- 15.b. Explain about the various linkages in satellite communication. CO5 K 2

Part C

5 x 12 = 60

Answer ALL questions

Each answer should not exceed 800 words or four pages

- 16.a. Derive the expression for power in amplitude modulated wave. CO1 K 2
(or)
- 16.b. Discuss about the principle and limitations of Amplitude modulation. CO1 K 2
- 17.a. What is super heterodyne principle? Explain the function of each stage of CO2 K 2
super heterodyne receiver with the help of a block diagram.
(or)
- 17.b. Discuss about the different types of AM radio receivers CO2 K 2
- 18.a. (i) Compare step index and graded index fibre. CO3 K 4
(ii) At a distance of 1km, spot size =9800cm, calculate the cut-off parameter and
also the number of modes for a fibre of core diameter 50 μm . $\mu_1=1.47$, $\mu_2=1.45$
(cladding), operating wavelength=0.85 μm .
(or)
- 18.b. i) What is the basic principle of fiber optics? CO3 K 4
ii) Differentiate Single mode and Multimode optical fibres.
- 19.a. Describe about time division multiplexing. CO4 K 2
(or)
- 19.b. Describe about frequency division multiplexing. CO4 K 2
- 20.a. Draw the block diagram of earth station and explain the various units in it. CO5 K 3
(or)
- 20.b. Discuss in detail on Satellite Communication CO5 K 2
