

S.B.O.A School And Junior College

Communication system

Std XII - PHYSICS - Assignment

1. Draw a block diagram of a generalized communication system.
2. Distinguish between point to point and broadcast communication system.
3. Mention the function of the following devices.
a) Transducer b) Repeater.
4. Mention three different modes of propagation used in communication system.
5. What is sky wave communication? Why is this mode of propagation restricted to frequencies up to 40 MHz?
6. Name the type of waves which are used for the line of sight communication. What is the range of their frequencies?
7. A transmitting antenna at the top of a tower has a height of 20m and the height of the receiving antenna is 45m. Calculate the maximum distance between them for satisfactory communication in LOS mode (Radius of the earth = 6.4×10^6 m)
8. A message signal of frequency 10 kHz and peak voltage 10V is used to modulate a carrier wave of frequency 1 MHz and peak voltage 20V. Determine a) the modulation index b) the side bands produced.
9. Write three important factors which justify the need of modulating a message signal. Show diagrammatically how an amplitude modulated wave is obtained when a modulated

Signal is superimposed on a carrier wave.

10. Draw a schematic diagram showing the ground wave and space wave propagation modes for em waves. Write the frequency range for each of the following -
- (i) Standard AM broadcast
 - (ii) Television
 - (iii) Satellite communication.
11. Draw the block diagram of a detector for AM signal