

#### **PHYSICS**

# BOOKS - PUNJAB BOARD PREVIOUS YEAR PAPERS

### **Principles of communication**

Exercise

**1.** A carrier frequency of a station is 50MHz. A

resistor of  $10K\Omega$  and a capacitor of 10 pF are

available in detector circuit. Is it good enough for detection?



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**2.** In a diode detector, output circuit consists of a resistor of  $10M\Omega$  and a capacitor of 1pF.Calculate the carrier frequency it can detect.



**3.** 600 Hz modulating voltage fed into FM generator produces a frequency deviation of 3.36 KHz. Find the modulation index.



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**4.** A transmitting antenna at the top of a tower has a height 16m and the height of receiving antenna is 25m.What is the maximum distance between them for

satisfactory communication in LOS mode? Given radius of earth is  $6.4 imes 10^6 m.$ 



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**5.** A transmitting antenna at the top of a tower has a height 40m and the height of receiving antenna is 60m.What is the maximum distance between them for satisfactory communication in LOS mode? Given radius of earth is  $6.4 \times 10^6 m$ .



**6.** A transmitting antenna at the top of a tower has a height 32m and the height of receiving antenna is 50m.What is the maximum distance between them for satisfactory communication in LOS mode? Given radius of earth is  $6.4 \times 10^6 m$ .



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7. What should be the length of dipole antenna for a carrier wave of frequency

 $6 \times 10^{8} Hz$ ?



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8. What should be the length of dipole antenna for a carrier wave of frequency  $8 \times 10^8 Hz$ ?



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9. What should be the length of dipole antenna for a carrier wave of frequency  $12 \times 10^8 Hz$ ?



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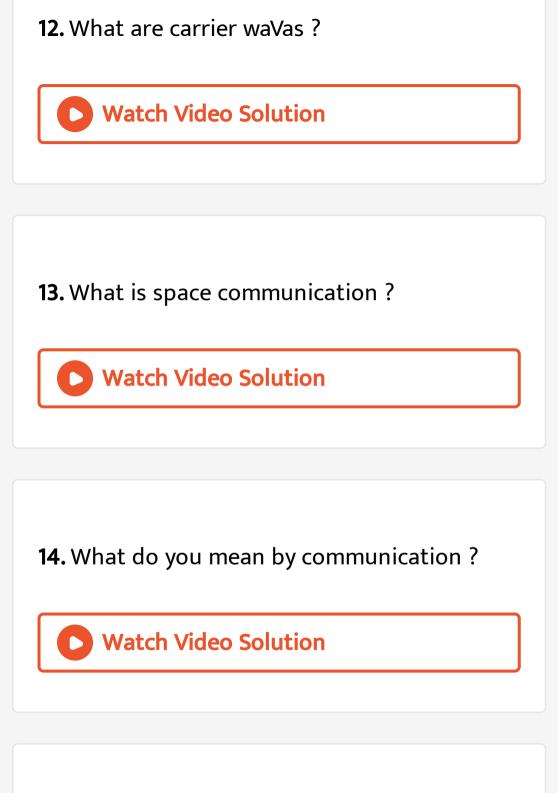
10. What is a modulator?

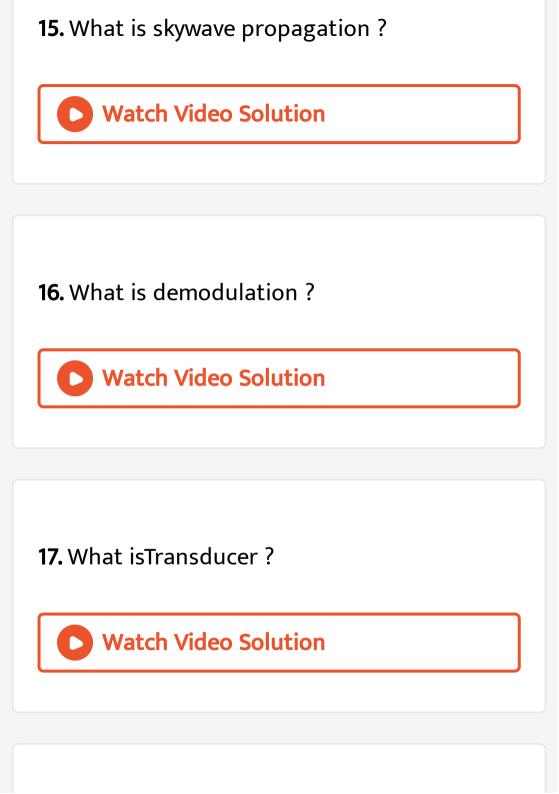


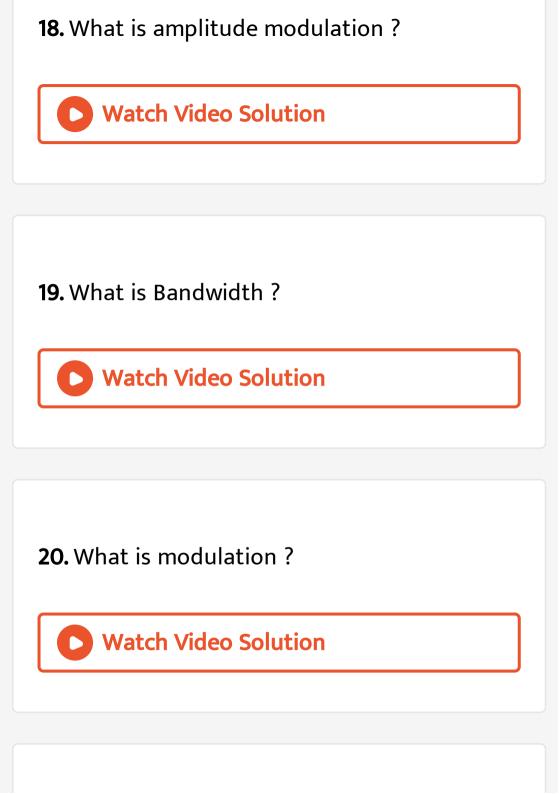
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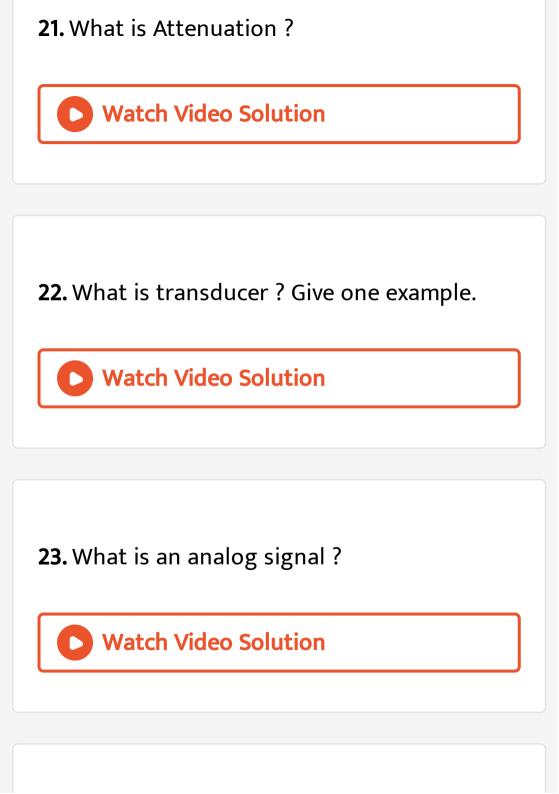
11. What is a demodulator?











**24.** What is modulated wave?



**25.** What is Attenuation?



**26.** Name the three basic elements of a communication system.



**27.** What is function of transducer?



**28.** What is the maximum frequency which can be transmitted by ground waves ?



29. Define modulation index



**30.** Define amplitude modulation.



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**31.** Give the basic function of antenna.



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32. Give the basic function of transducer.



**33.** Sky wave propagation is also called . (Choose Correct Option)

- A. Tropospheric Wave Propagation
- B. Ionospheric Wave Propagation
- C. Satellite Communication
- D. None of these

#### **Answer:**



**34.** What is skywave propagation?



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**35.** Draw a labelled circuit diagram for the detection (demodulation) of amplitude modulated waves.



**36.** Explain space wave propagation of radiowaves.



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**37.** Draw a labelled block diagram of a basic communication system.



**38.** Explain skywave propagation of radiowaves.



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**39.** Draw a labelled circuit diagram for the detection (demodulation) of amplitude modulated waves.



**40.** Explain the term ground waves propagation of radio-waves.



**41.** What is ozone layer? Give its importance.



42. What is communication satellite?



**43.** Explain sky wave propagation of radiowaves.



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**44.** Draw the circuit diagram for an amplitude modulator.



**45.** Explain space wave propagation of radio waves.



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**46.** What is space wave propagation? Why is it limited upto small distance over earth's surface?



47. What is the need for modulation?



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48. Why audio signals cannotbe transmitted directly into space?



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49. Explain basic elements of communication system with the help of block diagram.



**50.** Explain space wave propagation.



**51.** Explain sky wave propagation of radiowaves.



**52.** What is the need for modulation?



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53. What are the limitations of amplitude modulation?



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54. Draw a labelled block diagram of a basic communication system.

**55.** Give one difference between point to point mode of communication and broadcast mode of communication. Give one example of each mode of communication.



**56.** Why is ground wave propagation not suitable for high frequency?





57. What is the need for modulation?



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58. Draw a labelled block diagram of a basic communication system.



**59.** What is the modulation? What is need for modulation?



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**60.** Explain why sky wave propagation is not possible for high frequency radiowaves ?



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61. What is the need for modulation?



**62.** Why sky waves are not used in transmission of TV signals?



**63.** Explain sky wave propagation of radiowaves.



**64.** Explain the term ground waves propagation of radio-waves.



**65.** Explain space wave propagation of radiowaves.



**66.** Why sky waves are not used in transmission of TV signals?



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**67.** What is difference between sky wave propagation and space wave propagation ?



**68.** Why are short waves used in long distance broadcasts?



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**69.** Explain why sky wave propagation is not possible for high frequency radiowaves ?



**70.** What is space wave propagation? Give one example of communication system, which use space wave mode.



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**71.** Write any two factors, which justify the need of modulation for the transmission of the audio signals.



**72.** Explain ground wave propagation of radiowaves.



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**73.** What is the need for modulation of a signal? Give two reasons.



**74.** Draw a labelled block diagram of a basic communication system.



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75. Define modulation. What is its need?

