



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.



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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 $6.4 \times 10^6 m$.



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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 $6.4 \times 10^6 m$.



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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

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



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



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

$12 \times 10^8 \text{ Hz}$?



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10. What is a modulator ?



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11. What is a demodulator ?



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12. What are carrier waves ?



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13. What is space communication ?



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14. What do you mean by communication ?



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15. What is skywave propagation ?



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16. What is demodulation ?



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17. What is Transducer ?



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18. What is amplitude modulation ?



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19. What is Bandwidth ?



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20. What is modulation ?



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21. What is Attenuation ?



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22. What is transducer ? Give one example.



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23. What is an analog signal ?



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24. What is modulated wave ?



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25. What is Attenuation ?



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



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27. What is function of transducer ?



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



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29. Define modulation index



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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.



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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:



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34. What is skywave propagation ?



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



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36. Explain space wave propagation of radiowaves.



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



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38. Explain skywave propagation of radiowaves.



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



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



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41. What is ozone layer ? Give its importance.



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42. What is communication satellite ?



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43. Explain sky wave propagation of radiowaves.



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44. Draw the circuit diagram for an amplitude modulator.



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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 ?



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47. What is the need for modulation ?



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48. Why audio signals cannot be transmitted directly into space ?



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



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50. Explain space wave propagation.



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51. Explain sky wave propagation of radiowaves.



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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.



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



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





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57. What is the need for modulation ?



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



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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 ?



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



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63. Explain sky wave propagation of radiowaves.



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



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65. Explain space wave propagation of radiowaves.



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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 ?



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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 ?



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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.



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72. Explain ground wave propagation of radiowaves.



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



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



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75. Define modulation. What is its need ?



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