



PHYSICS

BOOKS - R G PUBLICATION

COMMUNICATION SYSTEM

Exercise

1. Differentiate between analog signal and digital signal.



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2. What is a transducer?



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3. What is Communication?



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4. What is attenuation of signal in communication system?



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5. Which layer in our atmosphere protect us from ultra violet rays?



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6. Draw block diagram of a generalized communication system.



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7. X-rays of wavelength 1.54 \AA strike a crystal and are observed to be deflected at an angle of 22.5° . Assuming that $n=1$, calculate the spacing between the planes of atoms that are responsible for this reflection.



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8. Express wavelength of matter wave as

$$\lambda = \frac{h}{\sqrt{2mE_k}}$$



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9. What is the function of cladding in a typical optical fibre?



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10. Why is modulation necessary?



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11. What is modulation index?



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12. What is digital communication? Mention two advantages of digital communication.



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13. Compare AM with FM wave.



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14. In a communication System, what do you mean by Transducer ?



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15. In a communication System, what do you mean by Signal?



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16. The transmitting antenna at the top of a tower has a height of 32m. The height of the receiving antenna is 50m. What is the maximum distance between them for satisfactory LOS mode Communication?

Radius of earth is $6.4 \times 10^3 km$.



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17. Draw block diagram of a generalized communication system.





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18. For an AM wave, the maximum amplitude is found to be 10V while the minimum amplitude is found to be 2V. Determine the modulation index.



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19. What are the different components of a TV signal? Write down the bandwidth of speech and TV signal.



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20. What are the different transmission media for communication?



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21. How will you detect amplitude modulated waves? Explain with block diagram?



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22. Discuss briefly the three modes of propagation of electromagnetic wave.



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23. Draw block diagram of a generalized communication system.



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24. Define the term noise used in electronic communication



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25. Give a short description of the following mode of propagation of an electromagnetic wave.

Sky waves



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26. Give a short description of the following mode of propagation of an electromagnetic wave.

Space waves.



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27. Draw the block diagram of detector for AM signal with waveforms at different stage.



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28. What is a photodiode? Explain its working principle.



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29. What are the two basic modes of communications?



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30. What is a transmitter. Write its use.



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31. What do you mean by band width of a signal.



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32. What do you mean by band width of a signal.



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33. What is skywave propagation?



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34. What is FAX.



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35. What is modulating signal?



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36. What is meant by noise?



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37. Which one is preferable AM or FM?



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38. What is modem?



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39. What is modulation index?



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40. What is space communication?



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41. Write the full meaning of LASER.



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42. What is optical communication?



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43. What is an antenna?



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44. Draw block diagram of a generalized communication system.



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45. What is a transducer?



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46. Draw a diagram to show the modulation of a carrierwave.



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47. Discuss the different types of pulse modulation.



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48. Draw the block diagram of working of a transmitter and a receiver.



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49. What is multiplexing? Explain.



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50. State four characteristics of Laser.



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51. Draw the block diagram of FAX.



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52. What is the advantage of optical fibre communication ?



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53. How antenna works?



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54. Differentiate between analog signal and digital signal.



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55. Write a short note on modulation? What are AM, FM and PM?



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56. What are the major milestones in the history of communication?



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57. What are the ground waves, skywave and spacewave. Describe.



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58. A carrier wave of peak voltage 8 v is used to transmit a message signal. What should be the peak voltage of the modulating signal in order to have a modulation index of 80%?



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59. What is modulation and demodulation?



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60. Explain the term

ground wave



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61. What is digital communication? Mention two advantages of digital communication.



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62. What is pulse modulation? Explain.



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