PHYSICS

BOOKS - JEEVITH PUBLICATIONS PHYSICS (KANNADA ENGLISH)

COMMUNICATION SYSTEMS

One Mark Questions With Answers

1. Name the Indian scientist who contributed during the initial devolopment of radio

communication?

2. Name the scientist who became successful in transmitting radio waves over long distances.

3. Who proposed the theory of electromagnetic waves ?

4. Who showed that electromagnetic waves can be generated and transmitted?

5. Who was successful in inventing and sending telegraphic messages to a distant place ?

6. Who invented telephone ?

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7. Who invented World Wide Web ?

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8. Name the three basic elements for communication ?

9. Name the two basic modes of communication ?

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10. Distinguish between point to point and broadcast modes of communications.

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11. What is transducer?

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12. What is an electrical network?

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13. What is an electrical signal ?

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14. Mention the two types of messages that can be transmitted.

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15. What are analog signals ? Give an example.

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16. What are digital signals ?

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17. What is meant by an electrical noise ?

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18. What is a transmitter ?

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19. What is a receiver ?

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20. What is meant by attenuation ?

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21. What is meant by modulation ?

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22. What is demodulation ?

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23. What is a repeater ?

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24. What does amplification refer to ?

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25. Name the device which results in the amplification of signals.

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26. What refers to the range of transmission ?

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27. What is a Bandwidth ?

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28. Give the Bandwidth of a TV signal.

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29. Give the range of audible frequencies.

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30. Mention the Bandwidth of optical fibre.

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31. Mention the frequency bands of

Standard AM broadcast.

32. Mention the frequency bands of

FM broadcast.

33. Mention the frequency bands of

Television.

34. Mention the frequency bands of

Cellular mobile radio.

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35. Mention the frequency bands of

Satellite communication.

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36. What are ground waves ?

37. What are sky waves ?

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38. What is a space wave ?

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39. What are space waves used for ?

Two Mark Questions With Answers

1. Write formula connecting line of sight distance (d) in terms of the height of the transmission tower (h_T) and height of receiving antenna (h_R).

2. Draw a neat labelled diagram showing LOS wave, ground wave, sky wave and space wave.

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3. How does effective power radiated depend on the wavelength ?

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4. What is amplitude modulation ?

5. Draw an amplitude modulated wave with an equation.

6. Define modulation index. What should be its value to avoid distortion ?

7. Draw an amplitude modulated wave with an equation.

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8. Draw the block diagram of generalised communication system.

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9. Write the block diagram of a transmitter.

10. Draw block diagram of a reciever

11. Write the block diagram of a detector for AM signal.

12. Write the waveform at various stages of detection of the message signal.

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13. Give the formula to calculate the range of radiations of e.m.w by an antenna.

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14. How can pulse modulation be classified ?

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15. What is meant by Pulse modulation ?

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16. What is meant by Phase modulation ?

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17. Mention the two types of messages that can be transmitted.

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18. What is modulation necessary ?

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19. How is Amplitude modulation produced ?

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20. A message signal of frequency 10 kHz and peak voltage 5V is used to modulate a carrier of frequency 100 kHz and peak voltage of 20 V. Determine

Modulation index.

21. A message signal of frequency 10 kHz and peak voltage 5V is used to modulate a carrier

of frequency 100 kHz and peak voltage of 20 V. Determine

The side bands.

22. Match the following (Inventors and their Inventions).

(1) John Logi Baird (a) Telegraphy

(2) Jagdish Chandra Bose and G. Marconi (b) Telephone

(3) Alexander Graham Bell (c) Wireless

telegraphy

(4) Alexander Bain (d) TV broadcast

(5) F.B. Morse and Charles Whenstone (e)

Radio FAX.

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23. A carrier wave of peak voltage 12 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 75% ?

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24. A TV transmitting antenna is 81 m tall. How much service area can it cover, if the receiving antenna is set at ground level.

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

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1. Outline the production of an Amplitude Modulated Wave.

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2. Why there is a need for modulation ?

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3. What is meant by .detection. of a modulated carrier wave? Descibe briefly the essential steps for detection.

4. If only the upper side band of an AM wave is transmitted an there is a facility for generating the carrier at the receiving end then is it possible to recover the modulating signal at the receiver station if a device is

available for multiplying two signals ? Expalain.