Chettinad College of Engineering & Technology
Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai.

Department of Electronics and Communication Engineering

EC8008 PHOTONIC NETWORKS

Multiple Choice Questions Bank

Unit-I: OPTICAL SYSTEM COMPONENTS

1. Multimode step index fiber has _____

(a) Small core diameter and large numerical aperture

(b) Large core diameter and small numerical aperture

(c) Large core diameter & large numerical aperture

Answer: (c)

2. Multimode step index fibers have a bandwidth of _____

(a) 10 to 40 MHz km

(b) 6 to 50 MHz km

(c) 2 to 30 MHz km

Answer: (b)

3. The fibers mostly not used nowadays for optical fiber communication system are _____

(a) Multimode graded index fibers

(b) Coaxial cables

(c) Multimode step fibers

(d)Single mode fibers

Answer: (d)

4. A fiber which is referred as non-dispersive shifted fiber is?

(a)Non zero dispersion shifted fibers

(b)Standard multimode fibers

(c) Standard single mode fibers

(d)Coaxial cables

Answer: (c)

5. The light sources used in fiber optics communication are _____

(a)Incandescent

(b) Xenon lights

(c)Photo transistors

(d)LED's and Lasers

Answer: (d)

6. Light incident on fibers of angles_____the acceptance angle do not propagate into the fiber

(a) Less than and equal to

(b) Equal to

(c)Greater than

(d)Less than

Answer: (c)

7. The ratio of speed of light in air to the speed of light in another medium is called as _____

(a)Refraction index

(b)Reflection index

(c)Dielectric constant

(d)Speed factor

Answer: (a)

8. When a ray of light enters one medium from another medium, which quality will not change?

(a)Wavelength

(b) Speed

(c)Frequency

(d)Direction

Answer: (c)

9. The core of an optical fiber has a

(a)Similar refractive index with the cladding

(b) Higher refractive index than the cladding

(c) Lower refractive index than the cladding

Answer: (b)

10. Multimode step index fiber has _____

(a)Small core diameter and large numerical aperture

(b)Large core diameter and small numerical aperture

(c)Large core diameter & large numerical aperture

Answer: (c)

11. Plastic fibers are less widely used than glass fibers.

(a) False

(b)True

Answer: (b)

12. Which is the unit of measurement of attenuation in optical fibers?

(a)Coulomb's

(b) dB/km

(c) dB

(d)km

Answer: (b)

13. The optical fiber incurs a loss in signal power as light travels down the fiber which is called as _____

(a)Refraction

(b) Absorption

(c)Attenuation

Answer: (c)

14. A device that reduces the intensity of light in optical fiber communications is _____

(a)Reducer

(b)Barometer

(c)Optical attenuator

(d)Compressor

Answer: (c)

15. The macroscopic bending losses show an exponential increase due to _____ in radius of curvature.

(a)Stability

(b)Decrease

(c)Increase

Answer: (b)

16. Which among the following is/are responsible for generating attenuation of an optical power in fiber?

(a)Waveguide effect

(b)Scattering

(c)Absorption

(d)All the answers are correct

Answer: (d)

17. Which type of fiber-optic coupler causes the distribution of an optical power from more than two input ports among the several output ports?

(a)X Coupler

(b)Tree Coupler

(c) Star Coupler

Answer: (c)

18. Which optical devices are adopted or applicable for routing signals from one waveguide to another?

(a)Optical Switch

(b)Optical Coupler

(c) Optical Splitter

Answer: (b)

19. The spectral response of an ideal photodetector depicts its efficiency as a function of _____

(a)Wavelength

(b)Period

(c) Frequency

Answer: (a)

20. Which transmission media provides the highest transmission speed in a network?

(a)Electrical cable

(b)Optical fiber

(c)Twisted pair cable

Answer: (b)

21. Rayleigh scattering and Mie scattering are the types of _____

(a)Splicing losses

(b)Fiber bends losses

(c)Linear scattering losses

Answer: (c)

22. Raman and Brillouin scattering are usually observed at _____

(a)Threshold power densities

(b)High optical power densities

(c)Medium optical power densities

(d)Low optical power densities

Answer: (b)

23. If the input power 100?W is launched into 6 km of fiber, the mean optical power at the fiber output is 2?W. What is the overall signal attenuation through the fiber assuming there are no connectors or splices?

(a)16.62dB

(b)17.12dB

(c)16.98dB

(d)15.23dB

Answer: (c)

24. When the input and output power in an optical fiber is 120?W & 3?W respectively and the length of the fiber is 8 km. What is the signal attenuation per km for the fiber?

(a)4dB/km

(b) 1dB/km

(c) 2dB/km

Answer: (c)

25. Using SOI integration technique _____ components can be coupled to IP devices.

(a)Active

(b)Demounted

(c)Layered

(d)Passive

Answer: (a)

26. Optical fiber couplers are also called as _____

(a)Attenuators

(b)Directional couplers

(c)Circulators

(d)Isolators

Answer: (b)

27. _____ couplers combine the different wavelength optical signal onto the fiber or separate the different wavelength optical signal output from the fiber.

(a)Directional

(b)WDM

(c) 2*2-star

(d) 3-port

Answer: (b)

28. A _____ coupler comprises a number of cascaded stages, each incorporating three or four-port FBT couplers to obtain a multiport output.

(a)Three-port

(b)WDM

(c)Ladder

(d)Star

Answer: (d)

29. What are the bands values are used in today optical communication?

(a)1.2,1.5, 3.5 micro meters

(b)1.2, 1.5, 1.85 micro meters

(c) 0.8, 1.3, 7.55 micro meters

(d) 0.8, 1.3, 1.55 micro meters

Answer: (d)

30. The Chromatic dispersion arises due to

(a) Material dispersion

(b) Waveguide dispersion

(c)Refractive index of cladding

(d) Refractive index of silica

Answer: (d)