Important Questions of Optical Communication

1. Draw and explain the radiation pattern of light source.
2. Obtain the expression for power coupled from LED into optical cable.
3. List out the factors which decides the launching of power from light source into optical cable.
4. Explain the dependency of power launched in optical cable with respect to wavelength.
5. Mention the criteria for choice of photodetectors for optical communications.
6. What is responsivity of photodetector?
7. What is quantum efficiency of photodetector?
8. What do you mean by detectivity of photodetector?
9. Explain principle of operation of photodetector.
10. What do you meant by quantum efficiency and responsivity of a photodiode? Calculate the wavelength at which quantum efficiency and responsivity are equal.
11. What is the significance of intrinsic layer in PIN diode? What is the principle of working of PINdiode?
12. Explain different noise currents in PIN photodiode.
13. Explain the principle of avalanche photodiode.
14. Explain various noise mechanisms in APD.
15. Compare PIN photodiode and APD.
16. Explain various photodetector noise.
17. Describe in between the factors which limits the speed of response of photodiode.
18. Explain the effect of temperature on the gain of avalanche photodiode.
19. Explain with the help of block diagram, the working of optical communication system.
20. Describe with the aid of block diagram, the function of major elements of an optical fiber receiver.
21. Explain the equivalent circuit of optical receiver.
22. Explain various noises and disturbances associated with signal detection in optical receiver.
23. Discuss the three main front end amplifiers configuration currently adopted for optical fiber communication with circuit diagram. Comment on their merits and drawbacks.
24. Define bit error rate (BER) of digital optical receiver. Obtain its expression for binary receiver assuming noise distribution to be Gaussian
25. With the help of neat sketch; explain how different information can be obtained from the eye diagram.
26. Discuss with the aid of suitable block diagram, a coherent optical fiber communication system.
27. What are the modulation methods used in optical communication system? Explain.
28. Compare different modulation techniques in terms of BER.
29. Define power link budget.
30. How is link power budget used for system design?
31. How the rise time budget is setup for a typical optical communication system.