BHARATI VIDYAPEETH INSTITUTE OF TECHNOLOGY

QUESTION BANK

Unit Test-I (Shift:-I & II)

Program: - EJ

Semester: - VI Course:-ONS (22647)

Unit-I Fundamentals Fiber Optic Communication (12M)

2 Marks Questions

1. Draw the constructional sketch of fiber optic cable and give its classification.

2. Classify fiber optic cable on the basis optical. i. Modes ii. Refractive index profile.

3. Give the applications of FOC in industrial and commercial field.

4 Marks Questions

4. Draw block diagram of Optical Fiber Communication System. Describe the function of each block.

5. State advantages and two disadvantages of fiber optic cable.

6. Differentiate between single mode and multimode fiber.

7. State the concept of LED as a light source.

8. Draw the construction and state working principle of LASER.

9. Distinguish between LED and LASER. (4 points)

Unit -II Optical Losses (14 M)

2 Marks Questions

10. Define the following with respect to optical fiber communication: (i) Critical angle

(ii) Snell's law with suitable diagrams.

11. Define w.r.t Optical fiber a) Numerical aperture b) Acceptance angle.

12. List the different losses occur in optical fiber.

13. Define splicing techniques and List different types of splicing techniques.

14. State application of OTDR.

4 Marks Questions

15. A silica optical fiber with a core diameter large enough to be considered by ray theory analysis has a core reflective index of 1.50 and a cladding refractive index of 1.47. Calculate (i) Critical angle, (ii) NA of fiber, (iii) Acceptance angle in air for fiber.

16. Calculate critical angle of incidence between two substances with different refractive indices n1 =1.4 and n2 = 1.36.

17. A step index fiber has a numerical aperture of 0.16, a core refractive index of 1.45 and core diameter of 90mm.Calculate: i) The acceptance angle ii) The refractive index of cladding.

18. List the different losses occur in optical fiber. Describe any one loss with diagram.

19. Describe absorption loss and scattering loss occurs in optical fiber.

20. Illustrate modal dispersion loss. Where it occurs and how it can be controlled.

21. List different types of splicing techniques. Describe any one method.

22. Draw and explain the block diagram of OTDR.

Unit-III Optical Network (08 M)

2 Marks Questions

23. Define Optical Network. State its need.

4 Marks Questions.

24. Write Short note on optical amplifier.

25. Define optical splitter. State its types and state application of splitters.