**SHAMBHUNATH INSTITUTE OF ENGINEERING AND TECHNOLOGY**

**Subject: Optical Networks , Assignment**

1. Write the traffic types to be routed on fiber.

2 Write functions of OADM.

3. Write full form of PDH.

4. What is data bit rate of frame formats DS1 and DS3 on twisted pairs?

5. What are the number of ports of routers at in PWDM ?

6. Explain the SONET / SDH hierarchy of multiplexing with the transmission rates.

7. Explain the frame structure of SONET with its overhead fields.

8.Compare various OADM architectures. Briefly explain reconfigurable OADM.

9. Explain functions of Asynchronous transfer mode (ATM) layer in B-ISDN reference model.

10.Briefly explain connection and cell forwarding with suitable diagrams in ATM.

11 Write a short note on any one of the following

(x) Burst Switching (y) Deployment considerations of optical networks

12.Explain an optical cross connect and compare its various configurations.

13.Briefly explain SONET/SDH layer protection in WDM networks.

14. Write a short note on protection in the client layer.

15. Discuss the access networks and cost trade-offs.

16. Explain (i) OMS-DP ring(ii)OMS-SP ring .

17.Write down the optical layer protection limitations and optical layer protection schemes

18. write a short note on one of the following

(i) FTTX (fiber to the X.)

(ii)Passive optical Network

19.Explain optical switching in photonic packet switched networks

20. Explain optical time division multiplexing (OTDM).

21. Differentiate circuit switching and packet switching.

22.Explain Bit interleaving and packet interleaving in OTDM.

23. Explain tunable delays with suitable diagram and write an application.2

24 How are wavelength routing networks dimensioned? What are the essential parameters for

. dimensioning them.

25.What are the light path topologies and design parameters? Compare the PWDM topology, All

optical topology and hub ring topology by router ports-traffic and wavelengths -traffic

diagrams.