

- (b) (i) With the help of energy band structures, explain the principle of operation of SOA. Explain crosstalk in it. (8)
- (ii) Explain Mechanical, Electro-optic and thermo-optic switches with their performance comparison. (8)
- 12. (a) (i) Draw and explain the SONET network elements and topologies. (10)
- (ii) Explain the hierarchical multiplexing structure used in SONET. (6)

Or

- (b) (i) Describe the different SONET rings with neat diagrams. (10)
- (ii) Discuss the importance of network management. (6)
- 13. (a) (i) Describe various media access control protocols for Broadcast optical network. (8)
- (ii) Explain the procedures used for characterising the multihop network. (8)

Or

- (b) Write short notes on various test beds: (8 + 8)
 - (i) AON
 - (ii) NTT
- 14. (a) (i) What are the various types of wavelength conversions involved in wavelength routing networks? Explain. (8)
- (ii) Show how WXC nodes can be realized in different methods and explain them. (8)

Or

- (b) Explain in detail the Routing and wavelength assignment algorithms. (16)
- 15. (a) Explain how synchronization is achieved in OTDM networks. Also state its significance.

Or

- (b) Discuss in detail about OTDM testbeds
