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Question Paper Code: 52222

M.E. DEGREE EXAMINATION, MAY 2017

Second Semester

Communication Systems

15PCM202 - Optical Networks

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 20 = 100 Marks)

1. (a) Explain the function of an optical switch. Describe the types and architectures of switches. (20)

Or

- (b) (i) Explain the principle of operation of couplers. (10)
(ii) Explain the principle of operation of SOA. (10)
2. (a) (i) Explain the optical network layered architecture with a diagram. (10)
(ii) Explain in detail the topologies for Broadcast and select WDM Networks. (10)

Or

- (b) Explain the following test beds for Broadcast and select WDM Networks
- (i) Rainbow (5)
(ii) Starnet (5)
(iii) BBC Television Studio Test bed (5)
(iv) Lightning (5)

3. (a) Explain in detail about node design in wavelength routing networks. (20)

Or

(b) Discuss in detail the routing and wavelength assignment with neat diagrams. (20)

4. (a) Describe how synchronization is achieved using tunable delays and optical phase lock loop. (20)

Or

(b) (i) Explain the significance of future access network. (10)

(ii) Describe in detail the architecture and classification of different types of fiber access networks. (10)

5. (a) Discuss in detail the network management functions. (20)

Or

(b) (i) Describe the two forms of crosstalk that arise in WDM systems. (10)

(ii) Describe the dispersion compensation techniques in network design. (10)
