

Roll No.

Total No. of Page :3

BT-7/D11 : 7812

KT - 453 : Broad - Band Communication

Time : Three Hours

Maximum Marks : 100

Notes:- Attempt five questions in all, selecting at least one question from each unit.

UNIT - I

- Q.1. (a) What is the difference between guided optical fibre communication system and unguided radio and Microwave communication system. 5
- (b) Explain the followings:
 - (i) Graded index fibre
 - (ii) Mode coupling losses
 - (iii) Leaky mode.
 - (iv) Numerical aperture 10
- (c) What is photodetector? How does it works. 5

- Q.2 (a) What is multipath distortion in optical fibres? How does it affect the bandwidth distance

- product? Explain how this figure can be improved. 10
- b) Give various transmission and devices used for optical communication. Discuss one of them. 5
- c) Why long wave length (1.55 μm) is used for optical fibre communication? 5

UNIT - II

- Q.3 (a) Distinguish between LEDs used for display and optical communication applications. 7
- (b) Semiconductor lasers are preferred to LEDs for wide area networks. Why? 6
- (c) How optical amplifiers and optical repeaters work? 7
- Q.4 (a) Elaborate DWDM network topologies. 10
- (b) Why P-i-n diode is preferred over photo diode in optical fibre communication? 10

UNIT - III

- Q.5 With the help of a suitable diagram, explain the ISDN architecture. Also discuss the lower layer transmission facilities to which ISDN provides access. 10

(b) Explain call negotiations in ISDN - ISDN
internetworking. 10

Q.6 (a) What do you understand by LAPD? Explain
flow control, error control and error monitoring
code in SSL. 10

(b) How D-ISDN reference model works? Explain.
10

UNIT - IV

Q.7 Explain the following:

(a) ATM switching principle

(b) ATM adaptation layer functions. 20

Q.8 (a) Describe switches types of ATM network and
differentiate among them. 10

(b) Discuss the advantages of fibre based networks.
10