Total No. of Questions :8]

SEAT No. :

P2935

[Total No. of Pages :2

[6004]-876
B.E. (E&TC)
BROAD BAND COMMUNICATION SYSTEMS
(2015 Pattern) (Semester-II) (404190)

Time : 2 ½ Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Answer Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right side indicate full marks.***
4) ***Assume suitable data, if necessary.***
5) ***use of logarithmic tables slide rule,mollier charts electronic pocket cslculater and steam tables is allowed.***

Q1) a) Describe the following terms with respect to optical fiber. **[8]**

i) Attenuation

ii) Absorption

iii) Scattering

iv) Dispersion

b) Compare PIN photo diode and APD as optical detector in optical fiber commn. **[6]**

c) What is link budget? Explain performance objective for Digital link. Derive the equation for received power 'P_r' **[6]**

OR

Q2) a) A multimode step index fiber with core diameter of 80 μm and relative index difference of 1.5% is operating at a wavelength of 0.85 μm. If the core refractive index is 1.48 estimate the normalized frequency for the fiber and the number of modes guided. **[8]**

b) Explain operational principle of WDM with a suitable schematic diagram. **[6]**

c) Compare LED and ILD as light source in optical fiber commn. **[6]**

Q3) a) Explain briefly various look angles for satelite earth station. **[8]**

b) Describe the launch sequence used to inject satelite. **[8]**

OR

Q4) a) Explain elements of satellite common. **[8]**

b) Compare LEO, MEO & GEO satellite orbits with its applicat

P.T.O.

Q5) a) Expalin various losses in downlink analysis. **[8]**

b) What is the need of satellite communication? Explain with diagram basic structure of satellite common. **[8]**

OR

Q6) a) What are the various orbital effects in common system performance? **[8]**

b) Explain any two **[8]**

i) Altitude control system

ii) Orbital Control System

iii) Tracking, Telemetry and Command System

Q7) a) State and explain kepler's three laws of planetary motion. **[9]**

b) Explain system noise temperature & G/T ratio. **[9]**

OR

Q8) a) Write short notes on equivalent. **[7]**
Isotropic Radiated Power (EIRP)

b) Derive the expression for total carrier to noise ratio (Uplink + Downlink). **[11]**