

Code No: **R41041****R10****Set No. 1****IV B.Tech I Semester Supplementary Examinations, February/March - 2018****OPTICAL COMMUNICATIONS****(Electronics and Communication Engineering)****Time: 3 hours****Max. Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks

- 1 a) Write the historical development of optical fiber communication. [8]
b) Explain Graded-Index fiber structure. [7]
- 2 a) Discuss about Cut-off wavelength and mode field diameter of single mode fibers. [8]
b) Explain Attenuation and Core and Cladding losses in optical fibers. [7]
- 3 a) Explain about Wave -guide & Polarization mode dispersion. [8]
b) Write a note on connector return loss. [7]
- 4 a) Write about the Laser Diode Rate equations of laser diodes. [8]
b) Explain Resonant frequencies of laser. [7]
- 5 a) Explain the power-coupling calculation of optical fiber. [8]
b) Write a note on Laser Diode -to-fiber coupling. [7]
- 6 a) Explain the physical principals of PIN photo detector. [8]
b) Discuss about temperature effect on Avalanche Gain. [7]
- 7 a) Discuss about Rase-Time Budget. [8]
b) Explain multi Mode fiber dispersion. [7]
- 8 a) Explain the operational principles of WDM. [8]
b) Define Eye patterns? Explain it. [7]