

BE SEM VIII (choice based) Summer 2026 EXTC

Duration: 3 hours

Max marks: 80

12/5/2026

- N.B.: (1) Question No.1 is Compulsory.
(2) Attempt any three questions out of the remaining five.
(3) All questions carry equal marks.
(4) Assume suitable data, if required, and state it clearly.

Q1. Attempt any four:

(20)

- GRIN fiber has a higher transmission rate than multimode SI fiber. Justify.
- Differentiate WDM and DWDM technologies.
- Compute the energy of photon at 0.6, 0.82, and 1.32 μm .
- What is meant by bending loss in a fiber
- Explain fiber gratings

Q2 a. Derive an expression for numerical aperture of Optical fiber in terms of Refractive indices. (10)

b. A certain Optical fiber attenuates 1.5 dB/Km at 1200nm. If 0.5mW of optical power is launched into the fiber, what is the power level in microwatts after 8Km. (10)

Q3 a. Explain intermodal dispersion. Derive its expression using the ray model. (10)

b. What are the causes of attenuation in optical fiber. (10)

Q4 a. What are the elements of the WDM network? With a neat sketch explain WDM access network. (10)

b. What is an Optical Amplifier? Compare different types of Optical Amplifiers. (10)

Q5 a. Draw the frame of SONET and determine its basic rate. (10)

b. Explain protection mechanism in Optical network. (10)

Q6. Write short notes on any two

(20)

- Optical isolator
- Any one fiber fabrication technique
- FTTH