

El-Shorouk Academy	The Higher Institute of Engineering
Computer and control engineering	
Third year	Electro magnetic waves
First semester 2023	

Review Questions on Optical Fiber

1. Draw block diagram of a typical optical fiber communication system. Explain function of each block distinguish it from conventional communication system.
2. Describe with drawing the optical fiber structure.
3. Sketch the attenuation curve versus wave length.
4. Draw and explain the different types of coupling losses.
5. Discuss the types of optical fiber according to the following: (i) number of supported modes. (ii) Refractive index profile. Illustrate your answer by drawing.
6. Compare between optical fiber as transmission medium and copper based transmission media in a table form.
7. Mention advantages and disadvantages of optical fiber compared to other conventional copper based transmission systems.
8. Compare between SMF and MMF.
9. Compare between light emitting diodes (LEDs) and laser diodes (LDs) as photo source.
10. Explain with drawing the different coupling loss in optical fiber.
11. Define the following concepts:
 - (i) Numerical aperture (NA),
 - (ii) Acceptance angle,
 - (iii) Refractive index (n).
 - (iv) Fiber attenuation.
 - (v) Fiber dispersion.
 - (vi) Normalized frequency (V number or V parameter).
12. Write short account on the following:
 - (i) SI SMF
 - (ii) SI MMF
 - (iii) GI MMF.
 - (iv) Erbium doped fiber amplifier (EDFA).
 - (v) SEA-ME-WE series.
 - (vi) FTTH.

.....