Subject Code: KEC073

PAPER ID-410416

Roll No: | | | | | | | | | | | | | |

B. TECH.
(SEM VII) THEORY EXAMINATION 2021-22
OPTICAL NETWORK

Time: 3 Hours ***Total Marks: 100***

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. 2 x 10 = 20

a. Define the single mode fiber.
b. List the advantages for using optical fiber in long haul communication.
c. State the function of couplers.
d. Describe difference between SONET and ATM.
e. What is Photonic Signal processing?
f. List out the name of Switching methods used in Optical Network.
g. Summarize the need of optical fiber in the communication.
h. Describe different capabilities of optical transport network.
i. Discuss the bidirectional protection switching.
j. Differentiate between broadcast and switched network.

SECTION B

2. Attempt any *three* of the following: 10 x 3 = 30

a. Describe how the attenuation affects the signal in fiber optic communication.
b. Differentiate between circulator and isolator.
c. Appraise the key attributes of SONET/SDH in comparison of PDH.
d. Describe why optical layer protection needed.
e. Explain, how the bit interleaved multiplexing operation performed, optically.

SECTION C

3. Attempt any *one* part of the following: 10 x 1 = 10

(a) Illustrate the building blocks of optical network
(b) Explain different parts of public networks.

4. Attempt any *one* part of the following: 10 x 1 = 10

(a) Elaborate Bragg grating with diagram
(b) Discuss the design of a directional coupler.

5. Attempt any *one* part of the following: 10 x 1 = 10

(a) Describe path, line, section and physical layers in SONET layer.
(b) Explain the parameters used to characterize the suitability of a switch for optical networking applications.

6. Attempt any *one* part of the following: 10 x 1 = 10

(a) Explain the terms Enhanced HFC and FTTC.
(b) Describe the difference among protection at different layers.

7. Attempt any *one* part of the following: 10 x 1 = 10

(a) Explain the difference between bit interleaved and packet interleaved optical time division multiplexing
(b) Write short note on SONET/SDH.