**Reg. No. :** | | | | | | | | | | |

# Question Paper Code: 57402

B.E. / B.Tech. DEGREE EXAMINATION, DEC 2020

Seventh Semester

Electronics and Communication Engineering

15UEC702 - OPTICAL COMMUNICATION AND NETWORKS

(Regulation 2015)

Duration: One hour Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

(Answer any six of the following questions)

1. Which is an advantage of optical communication links over using transmission lines or waveguides? CO1- R

   (a) Extremely wide bandwidths (b) Immunity to electromagnetic interference (EMI)

   (c) Lower cost (d) All the above

2. Single mode fiber has _____ bandwidth than multimode fiber. CO1- R

   (a) More (b) Less (c) The same (d) None of the above

3. In the fiber optic link, power transfer from one fiber to another and from fiber to detector must take place with _____coupling efficiency. CO2- R

   (a) maximum (b) stable (c) minimum (d) unpredictable

4. Which optical devices are adopted or applicable for routing signals from one waveguide to another? CO2- R

   (a) Optical Combiner (b) Optical Splitter.

   (c) Optical Coupler (d) None of the above

5. Laser light is _____ emission. CO3- R

   (a) Coherent (b) Stimulated

   (c) Spontaneous (d) Coherent and stimulated

6. _____ are capable of launching powers between 0.5 and several mW. CO3- R

(a) LED's (b) Injection laser (c) Attenuator (d) Reflector

7. The measurement of dispersion allows the _____ of the fiber to be determined. CO4- R

(a) Capacity (b) Frequency (c) Bandwidth (d) Power

8. Devices such as _____ are used to simulate the steady-state mode distribution. CO4- R

(a) Gyrators (b) Circulators (c) Mode scramblers (d) Attenuators

9. In SONET, STS-1 level of electrical signalling has the data rate of CO5- R

(a) 51.84 Mbps (b) 155.52 Mbps (c) 466.56 Mbps (d) none of the mentioned

10. _____ is a multi-functional element of optical network. CO5- R

(a) Hop (b) Optical node (c) Wavelength (d) Optical attenuation

PART – B (3 x 8= 24 Marks)

(Answer any three of the following questions)

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| 11. | Draw and explain the elements of optical communication systems? | CO1-U | (8) |
| 12. | Explain with suitable diagrams the different mechanisms that contribute to attenuation in optical fibers. | CO2-U | (8) |
| 13. | Explain the structure of Surface emitting LED With necessary diagram | CO3-U | (8) |
| 14. | Explain the "Cut back Method" used for attenuation measurement. | CO4-U | (8) |
| 15. | What is broadcast- and select network? Explain. | CO5- U | (8) |