



Roll No:

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

**BTECH**  
**(SEM IV) THEORY EXAMINATION 2021-22**  
**LASER SYSTEM AND APPLICATION**

*Time: 3 Hours**Total Marks: 70***Note:** Attempt all Sections. If require any missing data; then choose suitably.**SECTION A****1. Attempt all questions in brief. 2x7 = 14**

a.	Discuss black body radiation.
b.	Illustrate concept of coherence.
c.	Describe main components of Laser.
d.	Explain Dye Laser
e.	What are three level lasers.
f.	Explain medical laser.
g.	Describe LIDAR.

**SECTION B****2. Attempt any three of the following: 7x3 = 21**

a.	Describe spectral series of hydrogen atom.
b.	Explain temporal and spatial coherence.
c.	Discuss principal of Laser action.
d.	Explain Nd-Yag Laser.
e.	Explain Drilling, Cutting, and welding process of Laser.

**SECTION C****3. Attempt any one part of the following: 7x1 = 7**

a.	Describe absorption and florescence of X-ray.
b.	Illustrate tunneling effect.

**4. Attempt any one part of the following: 7x1 = 7**

a.	Describe monochromaticity and directionality.
b.	Discuss pumping and pumping schemes.

**5. Attempt any one part of the following: 7x1 = 7**

a.	Describe Wave Lasers.
b.	Explain Pulsed Lasers.

**6. Attempt any one part of the following: 7x1 = 7**

a.	Discuss Krypton ion Laser.
b.	Explain characteristics of semiconductor Laser.

**7. Attempt any one part of the following: 7x1 = 7**

a.	Explain use of Lasers in different applications.
b.	Describe Laser hardening.