

Roll No .....

**MEDC-302(B)**

**M.E./M.Tech. III Semester**

Examination, December 2016

**Optical Instrumentation and Measurement**

**(Elective-I)**

**Time : Three Hours**

**Maximum Marks : 70**

- Note:** i) Attempt any five questions.  
ii) All questions carry equal marks.  
iii) Assume suitable data wherever necessary.

1. a) Explain optical time Domain reflector. 7  
b) Derive the relation for optical power and energy. 7
2. a) Explain direction couplers and beam splitters'. 7  
b) Explain wavelength filters. 7
3. a) Explain fibre optic pressure sensor. 7  
b) Derive the relation between frequency and wavelength of light wave. 7
4. a) Derive the relation for finding numerical aperture and total attenuation. 7  
b) Explain differential mode delay. 7

5. a) Explain refractive index profile. 7  
b) Derive the cutoff wavelength and dispersion. 7
6. a) Explain Boxcar average. 7  
b) Explain CCD. 7
7. a) Explain fibre optic sensor the strain. 7  
b) Derive the relation for finding Bandwidth of jointed fibre. 7
8. Write short note on any two: 14  
a) OTDR  
b) Equivalent Step Index (ESI)  
c) Ellipsometer

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