SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

RAMAPURAM CAMPUS

FACULTY OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

CONTINUOUS LEARNING ASSESSMENT – I **SET B**

Sub Code/Name: 18ECO107T – Fiber Optics and Optoelectronics
Class/Sem/Course: III Yr / VI Sem / B. Tech -CSE (ALL DISCIPLINE) & IT **Date :**
Max Marks: 25 **Duration: 60 mins**

PART-A (5x1= 5)

ANSWER ALL THE QUESTIONS

Q.No	Question	Marks	CO	BL	PI
1	What is the frequency if the wavelength of light is 1350nm a)222THz b)232GHz c)242MHz d)252Hz	1	1	1	1.4.1
2	The refractive index of the diamond is a)1 b)1.33 c)1.5 d)2.4	1	1	1	1.3.1
3	Find the acceptance angle in air, if Numerical aperture is 0.242 a)11° b) 12° c) 13° d) 14°	1	1	1	1.4.1
4	Interpret the Velocity of light in free space related to electromagnetic a) $1/\sqrt{\mu_o\varepsilon_o}$ b) $1/\mu_o\varepsilon_o$ c) $1/(\mu_o\varepsilon_o)^2$ d) μ_o/ε_o	1	1	1	2.1.2
5	What is the unit of luminous flux? a) Lumens b) Webber/m^2 c) Ampere/m^2 d) tesla	1	1	1	1.3.1

PART B (2x4= 8)

ANSWER ANY TWO QUESTIONS

Q.No	Question	Marks	CO	BL	PI
6.	a) A step-index silica fiber with a core radius much longer than the operating wavelength of light has a core refractive index of 1.50 and a cladding refractive index of 1.48. Calculate the acceptance angle in water having a refractive index of 1.33.	2	1	2	1.4.1
	b) Differentiate between Single and Multi-mode fiber.	2	1	2	1.4.1
7.	Using Snell's law define the relationship at interface between two different media.	4	1	2	1.4.1
8.	Mention the advantages of optical fiber over conventional copper systems.	4	1	1	1.4.1

PART B (2x4= 8)

ANSWER ANY TWO QUESTIONS

Q.No	Question	Marks	CO	BL	PI
9. a	Infer in detail about various elements of optical fiber transmission link with necessary diagrams.	12	1	3	2.1.3
	OR				
9. b	Elaborate about ray optics and types of rays with necessary repres	12	1	3	2.1.3

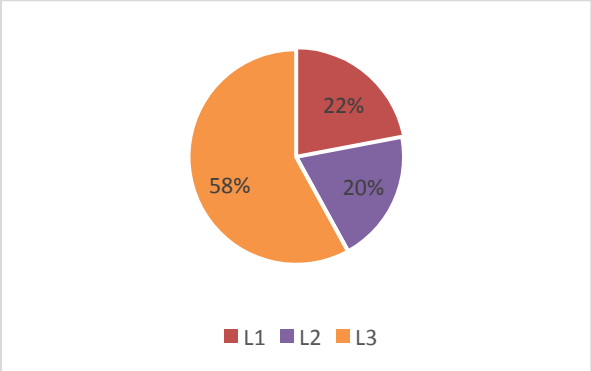
Outcome Alignment Matrix:

QUESTION NUMBER	CO distribution				
	CO1	CO2	CO3	CO4	CO5
1	1				
2	1				
3	1				
4	1				
5	1				
6	4				
7	4				
8	4				
9.a	12				
9.b	12				
Total					
%	**100**				

Quality Matrix:

Question No.	BL Distribution		
	L1	L2	L3
1	1		
2	1		
3	1		
4	1		
5	1		
6		4	
7		4	
8	4		
9.a			12
9.b			12
%	**22%**	**20%**	**58%**

Bloom's level Distribution:



Prepared by:
A.Alice Linsie
Assistant Professor/ECE
SRMIST,Ramapuram

Scrutinised by:

Verified and approved by HOD/ECE