

C O N T E N T S

CHAPTER NO	TITLE	PAGE NO.
1)	A RECIPE OF OPTICAL FIBERS	1-22A
1.1	Introduction	1
1.2	Optical Fibers :- Structure and Design	3
1.2.1	Types of Fiber	4
1.2.2	Materials For Optical Fiber	7
1.2.3	Preparation Techniques	10
1.3	Light Sources For Optical Fibers	13
1.4	Coupling Light Sources to Fibers	16
1.5	Applications of Optical Fibers	18
1.5.1	Nonlinear Fiber Optics	20
1.6	Summary	21
	REFERENCES	22A
	FIGURES	
2)	PROPAGATION OF OPTICAL RADIATION IN REGULAR OPTIC FIBERS	23-42A
2.1	Introduction	23
2.2	Ray Theory	23
2.3	Mode Theory	27
2.3.1	Step Index Fibers	28
2.3.2	Graded Index Fibers	34
2.3.3	Weakly Guiding Approximation	36
2.4	Signal Attenuation and Distortion in Optical Fibers	37
2.5	Summary	41
	REFERENCES	42A
	FIGURES	

CHAPTER NO.	TITLE	PAGE NO.
3)	PROPAGATION OF HE ₁₁ MODE BEAM THROUGH OPTICAL FIBERS WITH DIFFERENT REFRACTIVE INDEX PROFILES FOR THE CORE	43-81
3.1	Introduction	43
3.2	Optical Fiber with Nearly Parabolic Refractive Index Profile	44
3.2.1	Intensity Effect	53
3.3	Optical Fiber With True Parabolic Refractive Index Profile	59
3.3.1	Intensity Effect	61
3.3.2	Results and Discussion	63
3.4	Optical Fiber with Triangular/Symmetric Linear Refractive Index Profile	65
3.4.1	Intensity Effect	66
3.4.2	Results and Discussion	67
3.5	Optical Fiber with Symmetric Exponential Refractive Index Profile	68
3.5.1	Intensity Effect	71
3.5.2	Results and Discussion	73
3.6	Summary and Conclusions	74
	REFERENCES	81
	TABLES	78-80
	FIGURES	

CHAPTER NO.	TITLE	PAGE NO
4)	PROPAGATION OF HE ₂₁ MODE BEAM THROUGH OPTICAL FIBERS WITH DIFFERENT REFRACTIVE INDEX PROFILES FOR THE CORE	82-103
4.1	Introduction	82
4.2	Optical Fiber With Nearly Parabolic Refractive Index Profile	83
4.2.1	Intensity Effect	82
4.3	Optical Fiber With True Parabolic Refractive Index Profile	89
4.3.1	Intensity Effect	90
4.3.2	Results and Discussion	91
4.4	Optical Fiber With Triangular Refractive Index Profile	92
4.4.1	Intensity Effect	93
4.4.2	Results and Discussion	94
4.5	Optical Fiber With Symmetric Exponential Refractive Index Profile	95
4.5.1	Intensity Effect	96
4.5.2	Results and Discussion	97
4.6	Summary	98
	REFERENCES	103
	TABLES	100-102
