

CONTENTS

CHAPTER I

RIEMANNIAN MANIFOLDS

1. Manifolds and tensor fields 1
2. Connections and covariant differentiations 18
3. Sectional curvature 31
4. Transformations 40
5. Fibre bundles and covering spaces 46
- Exercises 54

CHAPTER II

SUBMANIFOLDS OF RIEMANNIAN MANIFOLDS

1. Induced connection and second fundamental form 61
2. Equations of Gauss, Codazzi and Ricci 67
3. Laplacian of the second fundamental form 73
4. Submanifolds of space forms 78
5. Minimal submanifolds 89
- Exercises 99

CHAPTER III

COMPLEX MANIFOLDS

1. Almost complex manifolds and complex manifolds 104
2. Examples of complex manifolds and almost complex manifolds . 118
3. Hermitian manifolds 124
4. Kaehlerian manifolds 129
5. Nearly Kaehlerian manifolds 144-
6. Quaternion Kaehlerian manifolds 158
- Exercises 174

CHAPTER IV

SUBMANIFOLDS OF KAEHLERIAN MANIFOLDS

1. Kaehlerian submanifolds 180
2. Anti-invariant submanifolds of Kaehlerian manifolds
3. CR submanifolds of Kaehlerian manifolds 214
- Exercises 244

CHAPTER V

CONTACT MANIFOLDS

1. Almost contact manifolds 252
2. Contact manifolds 255

3. Torsion tensor of almost contact manifolds	263
4. Contact distribution	269
5. Sasakian manifolds	272
6. Regular contact manifolds	286
7. Brieskorn manifolds	291
Exercises	306

CHAPTER VI

SUBMANIFOLDS OF SASAKIAN MANIFOLDS

1. Invariant submanifolds of Sasakian manifolds	312
2. Anti-invariant submanifolds tangent to the structure vector field of Sasakian manifolds	329
3. Anti-invariant submanifolds normal to the structure vector field of Sasakian manifolds	344
4. Contact CR submanifolds	351
5. Induced structures on submanifolds	366
Exercises	372

CHAPTER VII

f-STRUCTURES

1. f-structure on manifolds	379
2. Normal f-structure	392
3. Framed f-structure	402
4. Hypersurfaces of framed manifolds	408
Exercises	412

CHAPTER VIII

PRODUCT MANIFOLDS

1. Locally product manifolds	414
2. Locally decomposable Riemannian manifolds	418
3. Submanifolds of product manifolds	424
4. Submanifolds of Kaehlerian product manifolds	429
Exercises	436

CHAPTER IX

SUBMERSIONS

1. Fundamental equations of submersions	439
2. Almost Hermitian submersions	448
3. Submersions and submanifolds	455
Exercises	467

BIBLIOGRAPHY	473
------------------------	-----

INDEX	495
-----------------	-----