Our aim in the present thesis is to study the geometry of differentiable manifold. In fact to study the geometry of a differentiable manifold, it is lot more convenient to first embed it into a manifold of which the geometry is known and then study the geometry of the underlying manifold vis-a-vis the known ambient manifold. Now in the study of submanifolds, two problems are of important significance. First is the problem of classification of a given submanifold into some known submanifolds. This makes the study of underlying submanifold lot more simpler. The other one is to see under what conditions, one can reduce the dimension of the ambient space, keeping the extrinsic geometric features of the submanifold intact. In view of these observations, in the present thesis we have confined ourselves mainly to these problems and have obtained classification of umbilical CR-submanifolds of Sasakian and Kenmotsu manifolds. We have also dealt with the problem of reduction in codimension of proper mixed foliate semi-invariant submanifolds in Sasakian and Kenmotsu space forms.

The thesis comprises five chapters. The first chapter is introductory, where we have collected some definitions and results from submanifold theory, theory of CR-submanifolds of a Kaehler manifold and semi-invariant submanifolds of a Sasakian manifold which are of relevance to the subsequent
chapters. Since the major part of the thesis is devoted to study of semi-invariant submanifolds, the last two sections of this chapter deal with the semi-invariant submanifolds of a Sasakian and Kenmotsu manifold.

In Chapter II, we consider umbilical CR-submanifolds and CR-product submanifolds of a Kaehler manifold. In this connection B.Y. Chen [16] has shown that the totally umbilical CR-submanifolds of a Kaehler manifold are either totally geodesic, or totally real, or \( \dim D^1 = 1 \). Similar to this, we have classified the \( D^1 \)-totally umbilical CR-submanifolds of a Kaehler manifold and have obtained that they are either \( D^1 \)-totally geodesic, or totally real, or \( \dim D^1 = 1 \). Our technique is entirely different from the Chen's technique.

Similar to the CR-submanifolds of a Kaehler manifold, we have studied the semi-invariant submanifolds of a Sasakian manifold in chapter III. In section 3.2, we classify simply connected totally umbilical semi-invariant submanifolds and establish that they are either semi-invariant product, or anti-invariant, or isometric to an ordinary sphere, or homothetic to a Sasakian manifold. Continuing the study of semi-invariant submanifolds, we estimate the \( \theta \)-holomorphic sectional curvature if the Sasakian space form admits a mixed totally geodesic semi-invariant submanifold with parallel horizontal distribution. These results form the main contents of chapter III.
Chapter IV is devoted to the problem of reduction in codimension for a proper mixed foliate semi-invariant submanifold of a Sasakian space form. In fact J. Erbacher studied this problem in the setting of submanifolds of a Kaehler manifold. He obtained that "For a n-dimensional submanifold M of an m-dimensional complete simply connected space from M(c), if the first normal space N^1_x has constant dimension k, and is parallel with respect to the normal connection, then there is a totally geodesic (n+k)-dimensional submanifold M'(c) of M(c) which contains M". Whereas we have established that "If M is a (2k+q+1)-dimensional proper mixed foliate semi-invariant submanifold of a simply connected Sasakian space form M(-3) of dimension n (n>2k+2q+1) such that h(Z,W) lie in O^1 for each Z and W in O^1, then there exists a complete totally geodesic invariant submanifold M' of dimension 2k+2q+1 of M such that M is a proper mixed foliate semi-invariant submanifold of M'. This is the main result of Chapter IV.

S. Tanno [42], gave a classification for the connected almost Contact Riemannian manifolds. He showed that they can be divided into three classes: (1) homogeneous normal Contact Riemannian manifolds with constant ξ-holomorphic sectional curvature if the sectional curvature K(X, ξ)>0, (2) global Riemannian products of a line or a circle and a Kaehlerian manifold with constant holomorphic sectional curvature, if
$K(X,\xi)=0$ and (3) a warped product space $LX_f\mathbb{C}E^n$, if $K(X,\xi)<0$.

It is known that the manifolds of class (1) are characterized by some tensorial equations, which admit a Sasakian structure. Kemotsu [28] characterized the warped product space $LX_f\mathbb{C}E^n$ by tensor equations and studied their properties through these equations. The structure so obtained were later named as Kenmotsu structure. He showed that these manifolds are not Sasakian in general [28].

Chapter V deals with the basic properties of semi-invariant submanifolds, classification of totally umbilical semi-invariant submanifolds of a Kenmotsu manifold and the problem of reduction in codimension of a proper mixed foliate semi-variant submanifolds of a Kenmotsu space form.

Each chapter has been divided into sections. Mathematical relations obtained in the thesis have been numbered into three slots, e.g. a relation numbered as (3.2.5) would mean fifth relation occurring in the second section of Chapter 3.

In the end we have given a bibliography arranged alphabetically which by no means is exhaustive on the subject. In fact only those works have been listed which have been referred to in the body of the thesis by a serial number in a square bracket.