Course Code: 2MSCM3
Course: Topology-II
Credit: 4
Last Submission Date: October 31, (for January session)
April 30 (for July Session)

Max. Marks:-70
Min. Marks:-25

Note:-attempt all questions.

Que.1 Let F_1, F_2 be any pair of disjoint closed sets in a normal space X. Then there exist a continuous mapping f : X→[0,1] such that f (x) = 0 for $x \in f_1$ & f(x) =1 for $x \in f_2$

Que.2 State & prove Tietze extension theorem.

Que.3 Prove that every second countable space is first countable and converse not true.

Que.4 Every second countable space is separable.

Que.5 A continuous image of a sequentially compact set is sequentially compact.

Que.6 Every closed subspace of a locally compact space is locally compact.

Que.7 Let (X,d) be a complete metric space and let Y be a subspace of X. Then Y is complete if and only if Y is closed.

Que.8 Every convergent sequence in a metric space is a Cauchy sequence.

Que.9 The product space X×Y is connected if and only if X and Y are connected.

Que.10 State & prove Tychonoff's theorem.