PAPER VI – TOPOLOGY AND FUNCTIONAL ANALYSIS

Unit I

Topological spaces and continuous functions – Product topology – metric topology – The metric topology (continued) – connectedness.

Unit II

Compactness – Count ability axioms and Separation axioms.

Unit III

The Tychonoff theorem – Completer metric spaces and Function spaces

Unit IV

Banach spaces

Unit V

Hilbert spaces – finite dimensional spectral theory.

TEXT BOOK:

1. James R. Munkres, "Topology – A First Course", PHI (Second edition)

Unit 1: Chapter 2 (Sec 2.1 to 2.10)
        Chapter 3 (Sec 3.1 to 3.4)
Unit II: Chapter 3 (Sec 3.5 to 3.7)
        Chapter 4
Unit III: Chapter 5
        Chapter 7 (Sec 7.1 to 7.3)

Functional Analysis

Text Book

G.F. Simmons, "Introduction to Topology and Modern Analysis", Mc-Graw Hill. 1963
Unit IV: Chapter 9.
Unit V : Chapter 10 and 11.

References:

1. J. Dugundji, "Topology", PHI, New Delhi, 1975
2. Goffman and Pedrick, "First course in Functional Analysis", PHI
3. B.V. Limays, "Functional Analysis", Wiley Eastern.