Roll No. ....

Y – 3177 (A)

M.A./M.Sc. (Mathematics) (Second Semester) (SPECIAL)

EXAMINATION, August 2021

(SECOND CHANCE)

Paper – 203

TOPOLGY

Time : Three Hours

Maximum Marks : 85 *Minimum Pass Marks : 29*

Note—Attempt *all* questions.

1. Let $A \subseteq X$ where X is a topological space. Then prove that the closure of A, $\overline{A}$ is given by : $\overline{A} = \{x \in X :$ every neighbourhood of x intersect $A\}$. 17
2. State and prove Lindelof theorem. 17
3. Let X be a topological space. If $\{A_i\}$ be a non-empty class of connected subspaces of X such that $\cap A_i \neq \phi$ then prove that $A = \cup A_i$ is a connected subspace of X. 17
4. State and prove Lebesgue covering lemma. 17
5. State and prove Uryson Lemma. 17