Prabhat Kumar College, Contai

Department of Mathematics

2nd Semester Mathematics (Hons) CBCS Pattern

Paper: C-3 **Time: 1 hours**

Answer any one :-

1. Define Derived Set and prove that $S \subset T \Rightarrow S' \subset T'$ where $S' and\ T'$ are the derived set of S and T.
2. Prove that every neighbourhood of limit point of a set $S \subseteq \mathbb{R}$ contains infinitely many points of S.
3. Define Closure of a set and prove that $\bar{S} = S \cup S'$ where S' are the derived set of S and $\bar{S}$ is the closure of S.
4. Let $S, T \subseteq \mathbb{R}$ be two open sets then prove that $S \cup T$ is an open set.