Raniganj Girls' College

Department of Mathematics

(TOPOLOGY)

Some Important Question:

Define Homeomorphism in a topological space. Define continous function in a topological space. (2+2=4)
Define base in a topological space. (2)
Define Kuratowski Closure operator & give an example. (2+1=3)
State and prove Pasting Lemma. (1+4=5)

5. Define Derived set. Let (X,T) be a topological space and X={a,b,c} and T={φ, X, {a}, {a,b},{a,c}}, find the limit points of the set A={a,c} (3)

6. Let (X,P) and (Y,Q) be two topological space then prove that a mapping $f:X \rightarrow Y$ is open iff

$$int(f(A)) \Rightarrow f(int A)$$
 (5)

7. Let (X,P) and (Y,Q) be two topological spaces, then prove that a function $f:X \rightarrow Y$ is P-Q continous iff for every sub set B of Y,

$$f^{-1}(c|B) = c|(f^{-1}(B)).$$
 (5)