



COMSATS Institute of Information Technology
Attock campus

Department of Mathematics

Assignment # 01

Class: MSc-I
Subject: Set Topology
Instructor: Dr. Atiq ur Rehman

Due Date: 14-03-2018
Course Code: MTH251
Marks: 05

Question # 1

Define finite and infinite sets.

Question # 2

Let τ be a cofinite topology on \mathbb{N} . Then write any three element of τ and write any three subset of \mathbb{N} , which are not member of τ .

Question # 3

Let τ be a topology on \mathbb{N} define as follows:

$$\tau = \{\varnothing, E_n = \{n, n+1, n+2, \dots\} : n \in \mathbb{N}\}$$

If $A = \{101, 102, 103\}$, then write the interior and closure of A .

Question # 4

Let τ be a topology on \mathbb{R} consisting of \mathbb{R}, \varnothing and all infinite open intervals $(-\infty, a)$, where $a \in \mathbb{R}$.

- i. If $A = [5, 7]$, then write the interior A .
- ii. If $B = (7, 9]$, then write the closure of B .
- iii. If $C = [1, \infty)$, then write the exterior of C .

Academic Honesty Requirements:

You are encouraged to work with others in the completion of assignments but it doesn't include copying. However, in the spirit of Academic Honesty, which includes crediting others for their contribution to your work, please include one of the following statements with every submitted assignment on title page:

1. I worked alone on this assignment.
2. I worked with the following: List their full names. Include their relationship to you if they are not also a member of this class.