**UNIVERSITY OF MINES AND TECHNOLOGY**

**DEPARTMENT OF MATHEMATICAL SCIENCES**

MA 379 Element of Topology

Date: February 16, 2021 Quiz1 Time: 45 min

1) Define the term topology. Consider the following topology on X={a,b,c,d,e} , r={X,Ø,{a},{a,b},{a,c,d},{a,b,c,d},{a,b,e} }
   I. List the closed subset of X
   II. Determine the closure of the set {a},{b} and {e,c}.
   III. Which set in (ii) are densed in X?

2) Define a metric space. Check whether or not

ρ(x,y)= $\sum_{i=1}^{\infty} \frac{1}{2^i} \frac{|x_i - y_i|}{1+|x_i - y_i|}$ ∀ x,y ∈ X is a matric on X.

D.D.Zigli