IISER THIRUVANANTHAPURAM

Lecturer: Shrihari Sridharan

Topology

MAT404/MSM504 Quiz II

Max Score: 10	April 02, 2026	Duration: 45 minutes

General Instructions

- This question paper contains two questions.

Questions

1. Let (X, d) be a compact, Hausdorff metric space and $f : X \longrightarrow \mathbb{R}$ be a continuous function. Is f uniformly continuous on X? Justify.

2. Let $(X, \mathscr{T}_X)$ and $(Y, \mathscr{T}_Y)$ be two topological spaces and Y be compact. Prove: The function $f : X \longrightarrow Y$ is continuous if and only if the set Γ_f is closed in $X \times Y$, where

$$\Gamma_f \;=\; \Big\{(x, f(x)) \;:\; x \in X\Big\}.$$