1. Ross 24.2.

2. Ross 23.2.

3. Let \((f_n)\) be uniformly convergent sequence of continuous functions on \([a, b]\), prove that there exists \(M > 0\) such that \(|f_n(x)| \leq M\) for any \(n \in \mathbb{N}\) and \(x \in [a, b]\).

4. Prove the series \(\sum_{n=1}^{\infty} (-1)^n \frac{x^n}{n^2}\) converges uniformly on every bounded interval, but does not converge absolutely for any \(x\).