Islamic University of Technology (IUT)
Department of CSE and SWE
Quiz-2 (Math-4141, Geometry and Differential Calculus)

Total time: 30 min
Total Marks: 20

Answer the following:

1. Find the maximum and minimum values and where they occur for the following: **05+05**
   i) $f(x) = \sqrt{5 - x^2}$, $\sqrt{5} \leq x \leq 0$, ii) $f(x) = x^3 + x^2 - 8x + 5$
2. Write the statements of Rolle's theorem with its geometrical meaning. Verify the Mean value theorem for $f(x) = x + \frac{1}{x}$ in the interval $\frac{1}{2} \leq x \leq 2$. **03+02+05**