## Assignment No.1

## 7th September 2020

## Note:

- (1)Each question carry 5 marks.
- (2) You are given 30 minutes to submit this assignment.
  - 1. Prove the following, giving justification for each step:

$$\neg(\exists x P(x) \land \forall y \neg(M(x,y))) \land P(a) \to \exists z M(a,z)$$

2. Use Peano's Axioms to prove the following, giving justification for each step:

$$(2+2) = S(S(S(S(0))))$$

3. Write in your own words (within 100 words) what you think the course is all about.