

COMMUTATIVE ALGEBRA (MTH-518/618)

SURPRISE QUIZ (11/09/2017)

Time: 45 minutes

Maximum Marks: 10

Attempt all questions. Use separate page for each answer.

Problem 1. Let M be an Artinian A -module and $\phi : M \rightarrow M$ be a module homomorphism. If ϕ is injective then show that ϕ is isomorphism. (4)

Problem 2. Let M be an A -module and let I be the annihilator of M in A . Prove that A/I is a Noetherian ring. (3)

Problem 3. Find all primary, radical ideal of \mathbb{Z} . Also compute $Ass(m\mathbb{Z})$. (3)