MA-403 Assaignment-4 Due on: 7/11/2022 IIT, Dharwad (N. S.N. SASTEN)

Note: (1) write your name and refishations number in capitals. (2) Submit have copies only by 7/11/2022

Q1: Find all ir raducible polynomials over #3 in X for degrees 1,2,3,4. (20) (20=2+3+5+10)

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QZ-qWrite the mut tables of a finite fields

Fi, Fz of order & by defining mutiphications

on the set Fz = { ao+ax+azx²: ai ∈ { > 1} } }

Using the irraducible polynomials x³+x²+1

and x³+x+1 ones Fz:

b) Define a bijaction o: Fi > Fz explicitly

Such that, for able xx x2 EFI,

0 (xx + x2) = 0(xx) + 0(x2) & 0(xx x) = 0(xx)

(Note that, as a bijection of bels, 0 is first
a bijection of the bet 153)

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(30=15+15)