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| Salahaddin University–Erbil |  | Module: | Mathematical Analysis |
| College of Basic Education | Stage: | Third |
| Department: Mathematics | Round: | Second |
| First Semester Examination  2022-2023 | Time: | 2 Hours |

Q1: Define an ordered field F, and show that for any

if ,and then . (10 Marks)

Q2: Define infinite set, and show that is an infinite set.

(10 Marks)

Q3: State Dense of rational numbers, show that between any two distinct real numbers, there is infinite set of rational number. (10 Marks)

Q4: Use method to show that a sequence converges to. (10 Marks)

Q5: Prove or disprove the following: (5+5+5+5) Marks

1. If then .
2. If converges to and converges to , then converges to ..
3. .
4. is a Cauchy sequence.

Examiner: Dr. Sami Ali Hussein