MAT215 ELEMENTARY NUMBER THEORY & CRYPTOGRAPHY ASSIGNMENT 2

MANJIL SAIKIA

Instructions.

- Due: before the lecture on **30th October 2025**.
- Must be submitted as a printed/written document.
- Begin each solution on a new page, and use only blank or dotted pages (not ruled).
- Staple the submission.
- State your sources at the top of each problem (even if you worked independently).
- Late penalty is 25% per late day.
- Failure to follow any of these instructions will result in 0 points.
- **All page numbers refer to the printed questions given to you, and which we consulted during the lectures.**

Problems. All problems carry equal weightage.

(1) Page 43, Exercise 2.11.8.
(2) Page 44, Exercise 2.11.16.
(3) Page 45, Exercise 2.11.19.
(4) Page 46, Exercise 2.11.39.
(5) Page 46, Exercise 2.11.43.
(6) Page 48, Exercise 2.11.51.
(7) Page 48, Exercise 2.11.55.
(8) Page 108, Exercise 4.9.5.
(9) Page 108, Exercise 4.9.13.
(10) Page 108, Exercise 4.9.5.
(11) Page 109, Exercise 4.9.26.
(12) Page 111, Exercise 4.9.37.
(13) Page 112, Exercise 4.9.46.
(14) Page 112, Exercise 4.9.47.
(15) Page 112, Exercise 4.9.48.
(16) Page 128, Exercise 5.6.3.
(17) Page 129, Exercise 5.6.7.
(18) Page 129, Exercise 5.6.8.
(19) Page 129, Exercise 5.6.9.
(20) Page 131, Exercise 5.6.22.