13. Define a prepositional function and also discuss its algebra with suitable examples.

Or

Discuss the definition representation of finite fields and also explain splitting field with suitable examples.

Subject Code—0381-X

M. C. A. (Second Year) EXAMINATION

(5 Years Integrated Course) (D.E.)

(Batch prior to 2009 re-appear)

MATHEMATICS-II

MCA-205

Discrete Mathematical Structure

Time : 3 *Hours*   *Maximum Marks :* 100

Section A

Note : Attempt any *Seven* questions.   **7×7=49**

1. Discuss group axioms with suitable example.

2. Discuss cosets with examples.

3. Explain the difference between directed and undirected graphs.

4. What do you understand by polish motions ? Discuss it.

5. Give the examples of lattices.

6. Discuss Hase diagram with examples.

7. Explain Gate circuits with examples.

8. Explain integral domain with suitable examples.

9. What do you know about modular arithmetic ? Discuss it.

10. Define the difference between a grammar and language with examples.
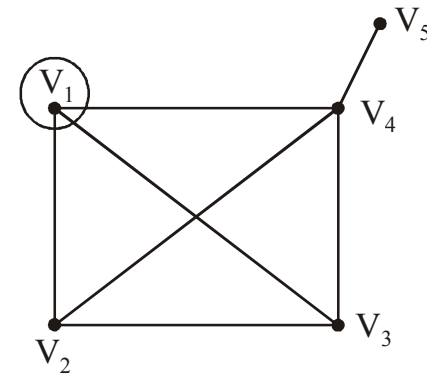
Section B

Note : Attempt all the questions.   **17×3=51**

11. Give all the proper subgroups of the symmetric groups (S_3, O). Which of them are normal subgroups ?

Or

Define Grammar and also discuss its various types.

12. Write the adjacency matrix for the graph given below :

Or

Define irreducible polynomial with suitable examples. Also discuss, how the roots of polynomial can be find out with suitable examples.