**Curriculum Plan: B.Sc.(H), Mathematics, III Year (Semester V)**

**Discrete Mathematics**

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| **Ms. Garima Gaur**Assistant ProfessorDepartment of MathematicsKalindi College (University of Delhi)Delhi- 110008Mobile: 9953227989**E- mail**: garimagaur@kalindi.du.ac.in |  | **Marks Distribution**  | **Theory** |  75 Marks |
| **Internal Assessment** |  25 Marks |
| **Classes Assigned** | **Lectures** |  3 per week |
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| **Practical** |  |
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| **References** |  | **1. Davey, B. A., & Priestley, H. A. (2002). Introduction to Lattices and Order (2nd ed.). Cambridge University press, Cambridge.** **2. Goodaire, Edgar G., & Parmenter, Michael M. (2011). Discrete Mathematics with Graph Theory (3rd ed.). Pearson Education (Singapore) Pvt. Ltd. Indian Reprint.** **3. Lidl, Rudolf & Pilz, Gunter. (2004). Applied Abstract Algebra (2nd ed.), Undergraduate Texts in Mathematics. Springer (SIE). Indian Reprint.** |
|  | **Week** | **Topics** |  |
|  | **1st week** 20-24thJULY | Introduction to graphs. |  |
| **2nd week** 26-31st JULY | Königsberg bridge problem, Instant insanity game. |
|  | **3rd week** 2-7th AUG |  Definition, Examples and basic properties of graphs |  |
| **4th week** 9-14th AUG | Subgraphs, Pseudographs. |  |
| **5th week** 16-21st AUG | Complete graphs, Bipartite graphs. |  |
|  |  | Isomorphism of graphs. |  |
|  | **6th week** 23-28th AUG | Paths and circuits. |  |
|  | **7th week** 31st AUG- 4th SEP | Eulerian circuits, Hamiltonian cycles. |  |
|  | **8th week** 6-11th SEP | Adjacency matrix, Weighted graph, Travelling salesman problem. |  |
|  | **9th week** 13-18th SEP | Shortest path, Dijkstra’s algorithm. |  |
|  | **10th week**20-25th SEP | Boolean polynomial functions. |  |
|  | **11th week**27th SEP-1st-0CT | Disjunctive normal form and conjunctive normal form. |  |
|  | **12th week**4-9th OCT | Minimal forms of Boolean polynomial. |  |
|  | **13th week**18-23rd OCT | Quine−McCluskey method, Karnaugh diagrams. |  |
|  | **14th week**25-30th OCT | Switching circuits and applications of switching circuits. |  |
|  | **15TH and 16TH Week**1-15TH NOV  | Revision and discussion of previous year papers. |  |