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

**Discrete Mathematics**

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| **Ms. Garima Gaur**  Assistant Professor  Department of Mathematics  Kalindi College (University of Delhi)  Delhi- 110008  Mobile: 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. | | | |  |