Exam questions.

1. Sets. Methods used for them
2. Finite and infinite sets. Examples
3. Equilibria of set theory
4. Cartesian product of sets
5. Conscious gatherings. Examples
6. Cantor-Bernstein theorem
7. Relations
8. Binary relations. Methods used for them.
9. Properties of binary relations. Binary relationship matrix.
10. Special binary relations.
11. Equivalence relation.
12. Separation theorem. Examples.
13. Ordered sets.
14. Functions.
15. Dirichlet principle. Examples.
16. Addition rule.
17. Multiplication rule.
18. Method of mathematical induction.
19. Input and output formula.
20. Application of input and output formula.
21. Number of bijections in finite sets.
22. Number of injections in finite sets.
23. Number of surjections in finite sets.
24. Substitutions. Layouts and dials.
25. Binomial coefficients. Pascal's triangle.
26. Recurrence relations. Examples.
27. Theorem for solving recurrence equations.
28. Divisibility in the ring of integers.
29. Euclid's algorithm.
30. Theorem on the canonical classification of numbers.
31. Definition of generating functions. Examples.
32. Properties of generating functions.
33. Solving equations related to comparison.
34. Chinese theorem on remainders. Examples.
35. Chain parts.
36. Favorable particle properties.
37. Connection between simple and chain particles.
38. Relationship between simple and suitable particles.
39. Multiplicative Euler function.

Multiplicative Möbius function

41. Properties of multiplicative functions.
42. Solving equations in integers. Examples.
43. Finding large prime numbers.
44. Counts. Various characteristics of a graph.
45. Graph isomorphism and homomorphism.
46. Operations applied to graphs.

47. Degrees of the roofs of the graphs.
48. Distance of graphs. Properties.
49. Matrices corresponding to graphs.
50. Internal Counts. Examples.
51. Directed and undirected graphs. Multigraph.
52. Chain. Road. Cycle.
53. Bound Counts.
54. Planar graphs.
55. Trees and their properties.
56. Planar graphs. Coloring graphs.
57. Eulerian graphs. Examples.
57. Criterion for checking graphs for Eulerianness.
58. Boolean function. Logical functions of two variables.
59. Equality of functions. Real and artificial variables.
60. Basic equivalences in logic algebra.
61. Rules of logic algebra.
62. Find MDNF and MKNF.
63. Theorem and consequences of the classification of functions of logic algebra by variables.
64. Full system properties. Examples.
65. Zhegalkin theorem.