Topics to be included in the final exam 2021

Topics	Exercise
1. Orthogonal trajectories (rectangular)	Practice questions provided in class
2. Differential Equations and their Classification, Solutions or Integrals of Differential Equations	Ex 1.1: (1-8, 11-18, 21-24, 27-32, 37, 38, 44, 47)
3. Formation of Differential Equation, General and Particular solution, Initial value problem	Ex 1.2: (1-14,31-33)
4. Variable Separable form.	Ex 2.2: (1-28)
5. Linear Differential Equations	Ex 2.3: (1-34)
6. Exact and Non Exact form	Ex 2.4: (1-16, 21-25, 27-30)
7. Solution by substitution (Homogeneous), Bernoulli Differential Equations	Ex 2.5: (1-30)
8. Applications of First Order Differential Equations	Ex 2.7: (2-4,13-15,31-33 + all examples in the book)
9. Initial and Boundary value problem. 10. Homogeneous DEs' 11. Linear Dependence and Independence, 12. Wronskian 13. Non-homogeneous Linear Differential Equation.	Ex 3.1: (1-4,7,8,13,19, 23-34)
14. Reduction of order	Ex 3.2: (1-14)
15. Homogeneous Linear Equations with Constant Coefficients	Ex 3.3: (1-14,15-25,29-40)
16. Undetermined coefficients Method (Superposition approach) Particular Solution	Ex 3.4: (1-25,27-30, 37-40)
17. Cauchy Euler equation.	Ex 3.6: (1-15,19-24,25-30)
18. Laplace transform	Ex 4.1: (1-36)
19. Inverse Laplace transforms	Ex 4.2: (1-30)
20. Transforms of Derivatives	Ex 4.2: (31-40)
21. Translation on the s-axis and t-axis	Ex 4.3: (1-18,21-30,37-48)
22. Convolution Theorem	Ex 4.4: (1-10)
23. The Dirac Delta Function	Ex 4.5: (1-10)
24. Partial Derivative	Ex 13.8: (1-4, 9-20, 31-36)