

**EXAMINE QUESTIONS on the
Numerical Methods and Their Application to Model Problems**

Theoretical questions:

1. Computing the values of an analytic functions.
2. Computing the values of exponential functions.
3. Computing the values of logarithmic functions.
4. Computing the value of SINE function.
5. Computing the value of COSINE function.
6. Computing the value of TAN function.
7. Computing the values of square roots.
8. Computing the values of cube roots.
9. Computing the values of reciprocals.
10. Computing the values of the reciprocal of a square root.
11. Chebyshev's quadrature formula for numerical integration.
12. Gaussian quadrature formula for numerical integration.
13. A cubature formula of Simpson type.
14. The method of Krylov for finding eigenvalues of a matrix.
15. The method of Krylov for finding eigenvectors of a matrix.
16. The method of Danilevsky for finding eigenvalues of a matrix.
17. The method of Danilevsky for finding eigenvectors of a matrix.
18. The halving method for numerical solution of the non-linear algebraic equations.
19. The Lobachevsky-Graeffe method for finding of real roots of the non-linear algebraic equations.
20. The Lobachevsky-Graeffe method for finding of complex roots of the non-linear algebraic equations.
21. Method orthogonalization for system of linear algebraic equations.
22. The method of iteration for solution of system of non-linear algebraic equations.
23. Newton's method for solution of system of non-linear algebraic equations.

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