

CHECK LIST FOR THE EXAM FOR NUMERICAL PROGRAMMING II

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The following list might be helpful for your exam preparation.

- (1) Adjoint method
- (2) A-stability
- (3) Backward differentiation formula
- (4) Bessel function
- (5) Bilinear form
- (6) Centered finite difference
- (7) Chebyshev method
- (8) Checkerboard numbering
- (9) Clenshaw algorithm
- (10) Coarse grid correction
- (11) Composition method
- (12) Conforming mesh
- (13) Crank–Nicolson scheme
- (14) Diffusion equation
- (15) Dirichlet boundary conditions
- (16) Elliptic equation
- (17) Euler methods
- (18) Error estimator
- (19) Energy conservation
- (20) Equidistant grid
- (21) Fast Fourier transform
- (22) Finite difference
- (23) Finite element method
- (24) Five-point stencil
- (25) Fourier collocation
- (26) Full reweighting
- (27) Gauß–Seidel method
- (28) Galerkin method
- (29) Gram matrix
- (30) Harmonic oscillator
- (31) Heat equation
- (32) Hermite functions
- (33) Hamiltonian equation
- (34) Hat (tent) functions
- (35) Hyperbolic cross
- (36) Hyperbolic equation
- (37) Incomplete Cholesky factorization
- (38) Implicit methods

- (39) Krylov space
- (40) Lanczos method
- (41) Laplacian
- (42) Linear iterative method
- (43) Linear multistep method
- (44) L-shaped domain
- (45) L-stability
- (46) Mass matrix
- (47) Matrix exponential
- (48) Method of lines
- (49) Method of time layers (Rothe method)
- (50) Moving frame solution
- (51) Multigrid method
- (52) Neumann boundary conditions
- (53) Nonuniform grid
- (54) One-sided finite difference
- (55) Order reduction
- (56) Parabolic equation
- (57) Preconditioned conjugate gradient
- (58) Predictor polynomial
- (59) Poisson equation
- (60) Robin boundary conditions
- (61) Runge–Kutta methods
- (62) Schrödinger equation
- (63) Shape functions
- (64) Simplified Newton iteration
- (65) Sparse linear system
- (66) Spectral method
- (67) Splitting method
- (68) Stability domain
- (69) Stability function
- (70) Step-size restriction
- (71) Stiff ordinary differential equation
- (72) Stiffness matrix
- (73) Störmer–Verlet method
- (74) Strang splitting
- (75) Symmetric method
- (76) Symplectic matrix
- (77) Unitarity
- (78) Three-point stencil
- (79) Time-reversibility
- (80) Toeplitz matrix
- (81) Trapezoidal rule
- (82) Trotter splitting
- (83) Variational equation
- (84) V-cycle
- (85) Wave equation
- (86) Weak solution