

Semester - IV

Computer Programming in C (with ANSI features)-Theory and Practical-II

Course No. MM-CP-410

Duration of Examination: 3 hrs

Maximum Marks: 100

(a) External Exam: 80

(b) Internal Exam: 20

UNIT-I

Arrays and Pointers-Declaring and Array. Arrays and Memory. Initializing Arrays. Encryption and Decryption. Pointer Arithmetic. Passing pointers as Function Arguments. Accessing Array elements through pointers. Passing Arrays as Function Arguments. Sorting Algorithms. Strings.

UNIT-I

Multidimensional Arrays. Arrays as pointers. Pointers in pointers. Storage classes- Fixed vs. Automatic Duration. Scope .Global variables. The register specifier. ANSI rules for the syntax and Semantics of the storage-class keywords. Dynamic Memory Allocation.

UNIT-III

Structures and Unions- structures. Linked Lists. Unions. enum Declarations.Functions-Passing Arguments. Declaration and Calls. Pointers to Functions. Recursion .The main () Function .Complex Declarations.

UNIT-IV

The C Preprocessor- Macro Substitution. Conditional Compilation. Include Facility. Line Control. Input and output –streams, Buffering . The <Stdio.h> Header File. Error Handling. Opening and Closing a File. Reader and Writing Data. Selecting an I/O Method. Unbuffered I/O Random Access. The standard library for Input/ Output.

References

1. Gerald, C.F Applied Numerical Analysis, Addison Weley, Reading Mass (1970).
2. M.K. Jain,S.R.K. Iyenger and R.K Jain Numerical Methods for scientific and Engineering Computations: wiley Eastern Ltd.(1978).
3. Samuel P. Harkinson and Gly L. Steele Jr., C: A Reference Manual 2nd Edition, Prentice Hall, 1984.
4. Brian W. Kernighan & Dennis M. Ritchie, The C programme Language, 2nd Edition (ANSI features) Prentice Hall 1989.

Core Text Books for M.A/M.Sc Mathematics (I-IV Semester)

1. I.N.Herstein : Topics in Algebra.
2. K.S.Miller : Elements of Modern Abstract Algebra.
3. Surjeet Singh and Qazi Zameer-ud-din: Modern Algebra
4. P.B.,Bhattacharaya and S.K.Jain : Basic Abstract Algebra.
5. J.B. Fraleigh : A first course course in Abstract Algebra.
6. J.A.Gallian :contemporary Abstract Algebra.
1. R. Goldberg : Methods of Real Analysis
2. W.Rudin : Principles of Mathematical Analysis
3. J.M.Apostol : Mathematical Analysis
4. S.M.Shah and Saxena: Real Analysis
5. A.J.White :Real Analysis , An Introduction
6. L.Royden :Real Analysis
13. G.F.Simmons : Introduction to topology and Modern Analysis
14. J. Munkres : Topology
15. K.D. Joshi : Introduction to General topology
16. J.L.Kelley : General topology
17. Mardeshwar ; General topology
18. S.T. Ha : Introduction to General topology
19. L.Ahlfors, Complex Analysis.
20. E.C.Titchmarsh , Theory of functions .
21. J.B.Conway ,Functions of a Complex Variable-1.
22. Richard Silverman, Complex Analysis.
23. H.A.Priestly, Introduction to complex Analysis.
24. Nihari Z. Conformal mapping
25. A.I.Markushevich :Theory of Functions of a Complex variable
26. Nihari Z. : Conformal Mapping.
27. S.Lang : Complex Analysis.
- 28.E.Hille : Analytic Function Theory (2- vol).
- 29.Liang –Shin Hahn, Bernard Epstein : Classical Complex Analysis.
- 30.D.Sarason: Complex Function Theory
- 31.W.H.J.Fuchs :Topics in the Theory of Functions on one Complex Variable.
- 32.Introduction to Matrix Analysis by Richard Bellman , McGraw Hill Book Company.
- 33.Elementary Matrix Algebra by Franz E. Hohn, American Publishing company Pvt.ltd.
- 34.A Text Book of Matrices by Shanti Narayan, S. Chand and company Ltd.
- 35.Matrix Anaylsis by Rajendra Bhatia , Springer.
- 36.Fourier Series and Boundary value Problems by Churchill.
- 37.Methods of Real Analysis by Goldberg , Oxford and IBH Pub. Co.
- 38.Fourier Serties by Rainville.
39. John Mc Cleary: Geometry from a differentiable Viewpoint. (Cambridge Univ. Press) .
- 40.F. Harary, Graph Theory ,Addison-Wisley.
- 41.Narsingh Deo : Graph Theory with Applications to Engineering and Computer Sciences, P-III.

42. D.B. West Introduction to Graph Theory prentice, Hall, India.
43. J. Clark and D.A Holton: A First book at Graph Theory, World Scientific.
44. O. Ore: Theory of Grpahs, AMS.
45. K.R Parthasarty : basic Graph Theory, Tata Mc-Graw Hill
46. Liu : Discrete Mathematics.
47. W.T.Tutte : Connectivity in Graphs, University of Toronto Press.
48. W. Klingenberg: A course in Differential Geometry (Spring Verlag)
49. C.E. Weatherburn: Differential Geometry of Three dimensions.
50. T. Willmore : An Introduction to Differential Geometry
51. J. M. Lee : Riemannian manifolds ,An Introduction to Curvature (Spring)
52. B.V.LImaya: Funtional Analysis.
53. C.Goffman G. Pedrick: A First Course in Functional Analysis.
54. L.A. Lusternick & V.J. Sobolov. : Elements of Functional Analysis
55. J.B. Conway : A Course in Functional Analysis
56. Royden, L. :Real Analysis (PHI)
57. Goldberg , R. : Methods of Real Analysis
58. Barra ,De. G. : Measure theory and Integration (Narosa)
59. Rana ,I.K. : An Introduction to Measure and Integration.
60. Rudin, W. Principles of Mathematical Analysis.
61. Chae, Lebesgue Integration.
62. T.M.Apostol : Mathematical Analysis
63. S.M.Shah and Saxena : Real Analysis
64. P.Hartmen : Ordinary Differential Equations

65. W.T.Reid : Ordinary Differential Equations
66. E.A.Coddington and N.Levinson :Theory of Ordinary Differential Equations.
67. Partial differential equations by R.Courant.
68. Lectures on Partial differential equations by G. Petrosky.
69. Partial differential equations by Lipman Bers, Fritz John.
70. Partial differential equations by Fritz John. Partial differential equations by I. C. Evans.
71. Partial differential equations by I. N. Sheddon.