SHANKAR IAS ACADEMY

SINCE 2004

TM

Best Academy for Civil Services Exam Coaching

MATHEMATICS
Optional Quality Enrichment
Program (MQRP)
TEST SCHEDULE 2025
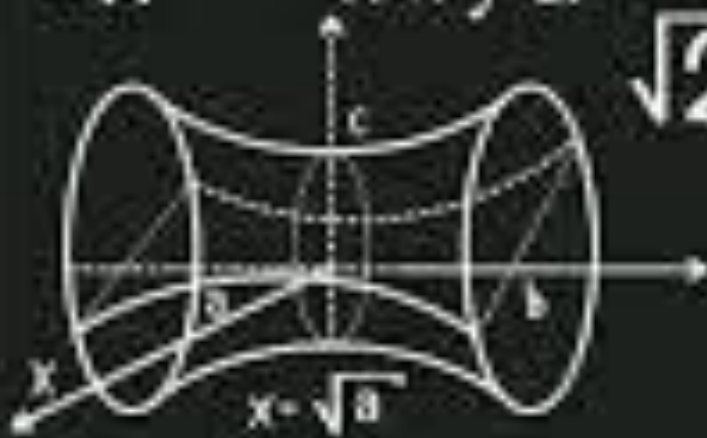
Mathematics Optional Quality enrichment program (MQEP) - 2025
For scoring more than 330 Marks

Test No.	Date	Syllabus	Topic Covered
1.	7th June 2025	Section A (Paper 1)	Linear Algebra Calculus, Solid Geometry
2.	14th June 2025	Section B (Paper 1)	Ordinary Differential equations, statics and Dynamics, vector Analysis
3.	21st June 2025	Section A (Paper 2)	Modern Algebra, Real Analysis, Linear programming problems and Complex Analysis
4.	28th June 2025	Section B (Paper 2)	Partial differential equations, Numerical Analysis, mechanics
5.	5th July 2025	Paper 1	Full Syllabus Paper I
6.	12th July 2025	Paper 2	Full Syllabus Paper 2
7.	19th July 2025	Paper 1	Full Syllabus Paper 1
8	26th July 2025	Paper 2	Full Syllabus Paper 2
9.	2nd Aug 2025	Paper 1 and Paper 2	Both Papers
10	9th Aug 2025	Paper 1 and Paper 2	Both Papers

Features:
➢ Detailed solution for every test (except test 9 and 10).
➢ One to one discussion after paper evaluation.
➢ Separate classes covering important concepts in each unit.
➢ Focusing on presentation and scoring high marks.

Fees for all students Rs.8,000/-

MENTORING SESSIONS:

Linear Algebra

Days	Topics to be covered
30th May	1. Vector spaces and sub spaces 2. Linear Dependence and Independence. 3. Basis and dimension 4. Linear Transformation
1st June	5. Rank and Nullity Theorem 6. Matrix of Linear Transformation 7. System of Linear equations 8. Eigen values and Eigen vectors 9. Cayley Hamilton Theorem 10. Similarity of matrices and diagonalisation

Integration

(Calculus, Real analysis, vector integration and complex integration

Days	Topics to be covered
3rd June	1. Riemann Integration 2. Improper integrals 3. Definite integrals 4. Double and triple integrals
5th June	5. Line, surface and volume integrals 6. Gauss divergence theorem 7. Greens Theorem 8. Stokes Theorem
7th June	9. Cayley Theorem, Cauchy integral formulae and Cauchy Residue theorem (CRT) 10. Application of CRT

(Calculus, Real analysis, Vector Differentiation)

Days	Topics to be covered

9th June	1. LCD of single and two variables
	2. Mean value theorems
	3. Application of LCD
	    (a) Jacobian
	    (b) Homogenous functions
	    (c) Taylor's Theorem
	    (d) Maxima and minima
	    (e) Curve tracing

12th June	4. Gradient, Divergence and curl 5. Analytic function 6. Harmonic function

Ordinary Differential equations (ODE)

Days	Topics to be covered
15th June	1. First order and first degree DE(FOFD) 2. Application of FOFD 3. Higher order DE 4. Cauchy and leganders equation
17th June	5. Second order DE 6. Claraiuts equation and singular solutions 7. Laplace Transforms

Partial Differential Equations

Days	Topics to be covered
19th June	1. Formation of DE 2. Lagrange auxiliary equations 3. Non linear DE

21st June	4. Higher order
	5. Application of PDE
	    (a) Wave equation
	    (b) Heat equation
	6. Conical forms

Linear programming problems (LLP)

Days	Topics to be covered
23rd June	1. Formation and graphical method 2. Transportation and Assignment problems. 3. Simplex method
25th June	4. Big M method 5. Two phase method

Numerical analysis

Days	Topics to be covered
27th June	1. Finding roots of an equation 2. Simultaneous equations 3. Numerical integration
29th June	4. Numerical integration 5. Interpolation 6. Number system conversion 7. Boolean algebra

Solid Geometry and modern algebra

Days	Topics to be covered
1st July	1. Plane and line 2. Groups, subgroups
2nd July	3. Sphere 4. Costes and Lagranges theorem, normal subgroups
3rd July	5. Cone and cylinder 6. Homomorphism of groups
4th July	7. Conicoids 8. Permutation groups and cyclically groups
5th July	9. Tangent plane and normals 10. Rings, fields 11. Ideals and homomorphism of rings

Statics and dynamics

Days	Topics to be covered
8th July	1. SHM 2. Projectile motion 3. Motion in a vertical plane
10th July	4. Virtual work and remaining topics

Mechanics

Days	Topics to be covered
12th July	Hydrodynamics