



ACE[®]
Engineering Academy
Leading Institute for ESE/GATE/PSUs



ODISHA PUBLIC SERVICE COMMISSION Assistant Industries Officer

Online Test Series

Schedule

No.of Tests : 23	
Subject Wise Tests	17
Full Length Mock Tests	6

Note:

- ★ The Syllabus considered as per Notification of OPSC-AIO-2024/25. ACE Engineering Academy does not take any responsibility for deviations in syllabus in the final exam. As per Notification of OPSC-AIO-2024/25 each wrong answer will result in a deduction of 25% of the marks assigned to the question.
- ★ The Dates of Tests may Change according to the OPSC-AIO Exam schedule.
- ★ All Tests will be active till OPSC-AIO Examination.
- ★ Tests will be activated at 06:00 pm on the scheduled day.
- ★ Test series available in ENGLISH medium only.

Subject-wise Tests

Test No	Name of the Test	No. of Questions	Max Marks	Duration	Date of Activation
Test-01 (Paper-II)	Engineering Mechanics	30	60	36 Mins	15-02-2025
Test-02 (Paper-I)	Indian History	30	30	36 Mins	16-02-2025
Test-03 (Paper-II)	Basic Electronics	30	60	36 Mins	20-02-2025
Test-04 (Paper-I)	Indian Polity	30	30	36 Mins	21-02-2025
Test-05 (Paper-II)	Basic Civil Engineering	30	60	36 Mins	25-02-2025
Test-06 (Paper-I)	Quantitative Aptitude(Basic Numeracy & Arithmetic)	30	30	36 Mins	26-02-2025
Test-07 (Paper-II)	Basic Manufacturing Process	30	60	36 Mins	02-03-2025
Test-08 (Paper-I)	Geography of India	30	30	36 Mins	03-03-2025
Test-09 (Paper-II)	Environmental Engineering	30	60	36 Mins	07-03-2025
Test-10 (Paper-I)	General Mental Ability	30	30	36 Mins	08-03-2025
Test-11 (Paper-II)	Basic Electrical Engineering	30	60	36 Mins	12-03-2025
Test-12 (Paper-I)	Indian Economy with special emphasis on Industry	30	30	36 Mins	13-03-2025
Test-13 (Paper-II)	C & Data Structure	30	60	36 Mins	17-03-2025
Test-14 (Paper-I)	Logical Reasoning	30	30	36 Mins	18-03-2025
Test-15 (Paper-II)	Quality Management	30	60	36 Mins	22-03-2025
Test-16 (Paper-I)	Current Affairs	30	30	36 Mins	23-03-2025
Test-17 (Paper-I)	General English	30	30	36 Mins	25-03-2025

Full Length Mock Test Series

Test-18 (Paper-I)	Full Length Mock Tests-1 (General English, Awareness and Aptitude)	100	100	2 Hours	01-04-2025
Test-19 (Paper-II)	Full Length Mock Tests-2 (Basic Engineering)	150	300	3 Hours	07-04-2025
Test-20 (Paper-I)	Full Length Mock Tests-3 (General English, Awareness and Aptitude)	100	100	2 Hours	13-04-2025
Test-21 (Paper-II)	Full Length Mock Tests-4 (Basic Engineering)	150	300	3 Hours	19-04-2025
Test-22 (Paper-I)	Full Length Mock Tests-5 (General English, Awareness and Aptitude)	100	100	2 Hours	25-04-2025
Test-23 (Paper-II)	Full Length Mock Tests-6 (Basic Engineering)	150	300	3 Hours	01-05-2025

Syllabus

Paper-I

General English:

Grammar and Comprehension

General Awareness:

Current Affairs, Indian History, Indian Polity, Geography of India and Indian Economy with special emphasis on Industry

General Aptitude:

Quantitative Aptitude(Basic Numeracy & Arithmetic), General Mental Ability and Logical Reasoning

Paper-II

C & Data Structure:

Problem-solving process: Algorithms and Flow Chart, Structure of C Program, Character set Identifiers, Keywords, Data Types, Constant and Variables, Statements, Input and Output statements, Operator and Expressions, Precedence of Operators, Control Structures (If, If-else, Switch-case, For loop, While, do- While), Functions (Built-in, user-defined), Recursive Function. Introduction to Data Structure, Linear Linked List: Creation, Insertion, Deletion. Stack, Stack applications (Infix to postfix, postfix evaluation), Queue (linear & circular).

Engineering Mechanics:

Concurrent forces on a plane: Composition, resolution and equilibrium of concurrent coplanar forces, method of moment. Plane trusses, method of joints and method of section. Parallel forces on a plane: General case of parallel forces, center of parallel forces and center of gravity, Centroid of place and composite figures, Theorems of Pappus and Guildins. Moment of Inertia: Plane figure with respect to an axis in its plane and perpendicular to the plane, Polar moment of inertia, parallel axis theorem. Rectilinear translation: Kinematics, Principle of dynamics, D' Alembert's Principles, Principle of work and energy for a particle and a rigid body, Conservation of Energy, Principle of impulse and momentum for a particle and a rigid body, Conservation of momentum.

Basic Manufacturing Process:

Lathe, Milling Machine, Drilling machine - Components, types and applications. Foundry process/ Casting, Patterns, Pattern Materials, Pattern Allowances, Moulding Materials, Properties of Moulding Sand. Solidification of Casting, Types of Solidification, Special Casting Processes: Die Casting and Centrifugal Casting, Investment Casting, Casting defects. Welding: Classification of Welding Process, Gas Welding, Arc Welding, TIG, MIG, Resistance Welding.

Basic Electrical Engineering:

D.C. Networks: Kirchhoff's Laws, node voltage and mesh current methods, delta-star and star-delta conversions, superposition principle. Single Phase and three phase AC circuit: average and effective values of sinusoids, solution of R, L, C series circuits, solution of series and parallel circuits, series-parallel resonance. Line and phase quantities, Solution of the balanced three phase circuits, measurement of power in three phase circuits. Magnet circuit & Principle of Electromechanical energy conversion: Fundamental laws of electromagnetic induction, Solution of simple magnetic circuits. DC Machine: Construction, types, emf equation of generator, torque equation of motor, speed control of DC motors. AC Machines: Single Phase Transformer: Construction, emf equation, no load and load operation, voltage regulation and efficiency.

Basic Electronics:

Semiconductor Physics: Properties of Semiconductor, current flow in semiconductors, voltage-current characteristics of a p-n junction, Rectifiers. Bipolar Junction Transistor (BJT): Device structure, types and mode of operation, static characteristics, BJT as a switch, BJT as an amplifier, concept of biasing of BJT. JFET: Physical structure, operation and static characteristics. MOSFET: Physical structure, operation and static characteristics of D and E-type MOSFET. Integrated Circuits. Digital Electronics: Number system (Decimal, Binary, Octal and Hexadecimal), Conversion among number systems, signed-binary numbers, binary addition, subtraction, multiplication and division, logic gates, laws of Boolean Algebra, simplification of expressions.

Basic Civil Engineering:

Residential Buildings: NBC classification, Basic Components of a building, Fundamental requirements, selection of sites. Foundations: Classification, Bearing Capacity of Soil and related terms. Properties of Construction Materials: Physical, Mechanical and durability properties. Construction materials: Stone, bricks, cement, aggregate, mortar, concrete, timber, steel, non-ferrous metals, paint, plastic, glass, adhesive, tiles, composites. Conventional Water Treatment process: Screening, Plain Sedimentation, Sedimentation aided with Coagulation, Filtration and Disinfection.

Environmental Engineering:

Air Pollution: Causes, types and sources of air pollutants, Climatic and meteorological effect on air pollution concentration, formation of smog and fumigation. Control of Particulate emission. Air Quality Criteria and Practical Emission Standard.

Sources of Water Pollution, Adverse effect on human health, environment, aquatic life and plant life. Water Pollution remedial measures, Indian Standard for water pollution Control. Disposal of domestic and Industrial Solid Wastes.

Noise Pollution: Types & effects, Noise measurements and control, permissible noise limits.

Quality Management :

Philosophy of Quality management, Economics of quality and measurement of cost of quality, Total Quality Management (TQM), Quality function deployment, Quality Circle, concept of Zero defect, Six Sigma, Kaizen, Poka-Yoke & Taguchi.