



**ACE**  
Engineering Academy  
(Leading institute for ESE/GATE/PSUs)



# RRB (JE)-2019

**Online Test Series**

**▶ STAGE - II**

**CIVIL AND ALLIED ENGINEERING**

**No. of Tests : 20**

 Subject Wise Tests	<b>16</b>
 Full Length Mock Tests	<b>4</b>

## TEST SERIES HIGHLIGHTS

- ★ Rank will be given for each test.
- ★ Test wise and overall statistics.
- ★ Comparison with toppers.
- ★ Question wise and test wise time analysis & comparison with toppers on time management.

## Subject-wise Tests

*Tests will be activated at 6:00 pm on scheduled day*

Test No	Subject Name		No. of Questions	Max Marks	Duration	Date of Activation
Test-01	Non-Tech	General Awareness	37	37	30 Min	06-05-2019
Test-02	Tech	Geo Technical Engineering + Computer Aided Design	37	37	30 Min	08-05-2019
Test-03	Tech	Design of Concrete Structures + Design of Steel Structures	37	37	30 Min	10-05-2019
Test-04	Non-Tech	Physics and Chemistry	37	37	30 Min	11-05-2019
Test-05	Tech	Estimating and Costing + Contracts and Accounts + Building maintenance	37	37	30 Min	13-05-2019
Test-06	Tech	Building drawing + Hydraulics	37	37	30 Min	15-05-2019
Test-07	Non-Tech	Basics of Computers and Applications	37	37	30 Min	16-05-2019
Test-08	Tech	Building Construction + Building materials + Building finishes + Irrigation Engineering	37	37	30 Min	18-05-2019
Test-09	Tech	Construction of substructure + Surveying	37	37	30 Min	20-05-2019
Test-10	Non-Tech	Basics of Environment and Pollution Control	37	37	30 Min	21-05-2019
Test-11	Tech	Construction of superstructure + Environmental Engineering	37	37	30 Min	23-05-2019
Test-12	Tech	Engineering Mechanics + Concrete Technology + Advanced Construction Techniques and Equipment	37	37	30 Min	25-05-2019
Test-13	Non-Tech	General Awareness + Basics of Environment and Pollution Control	37	37	30 Min	26-05-2019
Test-14	Tech	Mechanics of Structures + Theory of structures	37	37	30 Min	28-05-2019
Test-15	Tech	Transportation Engineering + Highway Engineering	37	37	30 Min	30-05-2019
Test-16	Non-Tech	Physics and Chemistry + Basics of Computers and Applications	37	37	30 Min	31-05-2019

## Full Length Mock Tests

Test No		No. of Questions	Max Marks	Duration	Date of Activation
Test-17	Full Length Mock Test - 1	150	150	2 Hours	17-06-2019
Test-18	Full Length Mock Test - 2	150	150	2 Hours	29-06-2019
Test-19	Full Length Mock Test - 3	150	150	2 Hours	22-07-2019
Test-20	Full Length Mock Test - 4	150	150	2 Hours	29-07-2019

**Note:** The Syllabus considered as per Notifications of RRB. ACE Engineering Academy does not take any responsibility for deviations in syllabus in the final RRB exam. As per Notification of RRB each question carries '1' mark and negative marking of 1/3rd (i.e. 0.33 Marks) for each wrong answer.

## **Syllabus for RRB (JE) STAGE-II** **(Civil and Allied Engineering)**

Subjects	STAGE-II	
	No. of Questions	Marks for each Section
General Awareness	15	15
Physics and Chemistry	15	15
Basics of Computers and Applications	10	10
Basics of Environment and Pollution Control	10	10
Technical Abilities	100	100
<b>Total</b>	<b>150</b>	<b>150</b>
<b>Time in Minutes</b>	<b>120</b>	

The section wise distribution given in the above table is only indicative and there may be some variations in the actual question papers.

Subject Name	Syllabus
<b>General Awareness</b>	Knowledge of Current affairs, Indian geography, culture and history of India including freedom struggle, Indian Polity and constitution, Indian Economy, Environmental issues concerning India and the World, Sports, General scientific and technological developments etc.
<b>Physics and Chemistry</b>	Up to 10th standard CBSE syllabus.
<b>Basics of Computers and Applications</b>	Architecture of Computers; input and Output devices; Storage devices, Networking, Operating System like Windows, Unix, Linux; MS Office; Various data representation; Internet and Email; Websites & Web Browsers; Computer Virus.
<b>Basics of Environment and Pollution Control</b>	Basics of Environment; Adverse effect of environmental pollution and control strategies; Air, water and Noise pollution, their effect and control; Waste Management, Global warming; Acid rain; Ozone depletion.

## Technical Abilities

Subject Name	Syllabus
Engineering Mechanics	Force (resolution of force, moment of force, force system, composition of forces), Equilibrium, Friction, Centroid and Center of gravity, Simple machines.
Building Construction	Building components (substructure, superstructure), type of structure (load bearing, framed and composite structures).
Building materials	Masonry materials (stones, bricks, and mortars), Timber and miscellaneous materials (glass, plastic, fiber, aluminum steel, galvanized iron, bitumen, PVC, CPVC, and PPF).
Construction of substructure	job layout, earthwork, foundation (types, dewatering, coffer dams, bearing capacity).
Construction of superstructure	stone masonry, brick masonry, Hollow concrete block masonry, composite masonry, cavity wall, doors and windows, vertical communication (stairs, lifts, escalators), scaffolding and shoring.
Building finishes	Floors (finishes, process of laying), walls (plastering, pointing, painting) and roofs (roofing materials including RCC).
Building maintenance	Cracks (causes, type, repairs- grouting, guniting, epoxy etc.), settlement (causes and remedial measures), and re-baring techniques.
Building drawing	Conventions (type of lines, symbols), planning of building (principles of planning for residential and public buildings, rules and byelaws), drawings (plan, elevation, section, site plan, location plan, foundation plan, working drawing), perspective drawing.
Concrete Technology	Properties of various types/grades of cement, properties of coarse and fine aggregates, properties of concrete (water cement ratio, properties of fresh and hardened concrete), Concrete mix design, testing of concrete, quality control of concrete (batching, formwork, transportation, placing, compaction, curing, waterproofing), extreme weather concreting and chemical admixtures, properties of special concrete (ready mix, RCC, pre-stressed, fiber reinforced, precast, high performance).

Subject Name	Syllabus
<b>Surveying</b>	Types of survey, chain and cross staff survey (principle, ranging, triangulation, chaining, errors, finding area), compass survey (principle, bearing of line, prismatic compass, traversing, local attraction, calculation of bearings, angles and local attraction) leveling (dumpy level, recording in level book, temporary adjustment, methods of reduction of levels, classification of leveling, tilting level, auto level, sources of errors, precautions and difficulties in leveling), contouring (contour interval, characteristics, method of locating, interpolation, establishing grade contours, uses of contour maps), area and volume measurements, plane table survey (principles, setting, method), theodolite survey (components, adjustments, measurements, traversing), Tacheometric survey, curves (types, setting out), advanced survey equipment, aerial survey and remote sensing.
<b>Computer Aided Design</b>	CAD Software (AutoCAD, Auto Civil, 3D Max etc.), CAD commands, generation of plan, elevation, section, site plan, area statement, 3D view.
<b>Geo Technical Engineering</b>	Application of Geo Technical Engineering in design of foundation, pavement, earth retaining structures, earthen dams etc., physical properties of soil, permeability of soil and seepage analysis, shear strength of soil, bearing capacity of soil, compaction and stabilization of soil, site investigation and sub soil exploration.
<b>Hydraulics</b>	properties of fluid, hydrostatic pressure, measurement of liquid pressure in pipes, fundamentals of fluid flow, flow of liquid through pipes, flow through open channel, flow measuring devices, hydraulic machines.
<b>Irrigation Engineering</b>	Hydrology, investigation and reservoir planning, percolation tanks, diversion head works.
<b>Mechanics of Structures</b>	Stress and strain, shear force and bending moment, moment of inertia, stresses in beams, analysis of trusses, strain energy.
<b>Theory of structures</b>	Direct and bending stresses, slope and deflection, fixed beam, continuous beam, moment distribution method, columns.
<b>Design of Concrete Structures</b>	Working Stress method, Limit State method, analysis and design of singly reinforced and doubly reinforced sections, shear, bond and development length, analysis and design of T Beam, slab, axially loaded column and footings.
<b>Design of Steel Structures</b>	Types of sections, grades of steel, strength characteristics, IS Code, Connections, Design of tension and compression members, steel roof truss, beams, column bases.

<b>Subject Name</b>	<b>Syllabus</b>
<b>Transportation Engineering</b>	Railway Engineering (alignment and gauges, permanent way, railway track geometrics, branching of tracks, stations and yards, track maintenance), Bridge engineering (site selection, investigation, component parts of bridge, permanent and temporary bridges, inspection and maintenance), Tunnel engineering (classification, shape and sizes, tunnel investigation and surveying, method of tunneling in various strata, precautions, equipment, explosives, lining and ventilation).
<b>Highway Engineering</b>	Road Engineering, investigation for road project, geometric design of highways, construction of road pavements and materials, traffic engineering, hill roads, drainage of roads, maintenance and repair of roads.
<b>Environmental Engineering</b>	Environmental pollution and control, public water supply, domestic sewage, solid waste management, environmental sanitation, and plumbing.
<b>Advanced Construction Techniques and Equipment</b>	Fibers and plastics, artificial timber, advanced concreting methods (under water concreting, ready mix concrete, tremix concreting, special concretes), formwork, pre-fabricated construction, soil reinforcing techniques, hoisting and conveying equipment, earth moving machinery (exaction and compaction equipment), concrete mixers, stone crushers, pile driving equipment, working of hot mix bitumen plant, bitumen paver, floor polishing machines.
<b>Estimating and Costing</b>	Types of estimates (approximate, detailed), mode of measurements and rate analysis.
<b>Contracts and Accounts</b>	Types of engineering contracts, Tender and tender documents, payment, specifications.