



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



RRB (JE)-2019

Online Test Series

STAGE - II

ELECTRICAL AND ALLIED ENGINEERING

No. of Tests : 20

 Subject Wise Tests	16
 Full Length Mock Tests	4

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	Basic concepts + Circuit law	37	37	30 Min	07-05-2019
Test-03	Tech	Magnetic Circuit	37	37	30 Min	09-05-2019
Test-04	Non-Tech	Physics and Chemistry	37	37	30 Min	11-05-2019
Test-05	Tech	AC Fundamentals	37	37	30 Min	12-05-2019
Test-06	Tech	Electrical Machines	37	37	30 Min	14-05-2019
Test-07	Non-Tech	Basics of Computers and Applications	37	37	30 Min	16-05-2019
Test-08	Tech	Measurement and measuring instruments	37	37	30 Min	17-05-2019
Test-09	Tech	Generation, Transmission and Distribution	37	37	30 Min	19-05-2019
Test-10	Non-Tech	Basics of Environment and Pollution Control	37	37	30 Min	21-05-2019
Test-11	Tech	Synchronous Machines	37	37	30 Min	22-05-2019
Test-12	Tech	Estimation and costing	37	37	30 Min	24-05-2019
Test-13	Non-Tech	General Awareness + Basics of Environment and Pollution Control	37	37	30 Min	26-05-2019
Test-14	Tech	Basic Electronics	37	37	30 Min	27-05-2019
Test-15	Tech	Utilization of Electrical Energy	37	37	30 Min	29-05-2019
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	28-06-2019
Test-19	Full Length Mock Test - 3	150	150	2 Hours	21-07-2019
Test-20	Full Length Mock Test - 4	150	150	2 Hours	28-07-2019

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

(Electrical 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
Total	150	150
Time in Minutes	120	

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
General Awareness	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.
Physics and Chemistry	Up to 10th standard CBSE syllabus.
Basics of Computers and Applications	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.
Basics of Environment and Pollution Control	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
Basic concepts	Concepts of resistance, inductance, capacitance, and various factors affecting them. Concepts of current, voltage, power, energy and their units.
Circuit law	Kirchhoff's law, Simple Circuit solution using network theorems.
Magnetic Circuit	Concepts of flux, mmf, reluctance, Different kinds of magnetic materials, Magnetic calculations for conductors of different configuration e.g. straight, circular, solenoidal, etc. Electromagnetic induction, self and mutual induction.
AC Fundamentals	Instantaneous, peak, R.M.S. and average values of alternating waves, Representation of sinusoidal wave form, simple series and parallel AC Circuits consisting of R.L. and C, Resonance, Tank Circuit. Poly Phase system – star and delta connection, 3 phase power, DC and sinusoidal response of R-L and R-C circuit.
Measurement and measuring instruments	Measurement of power (1 phase and 3 phase, both active and re-active) and energy, 2 wattmeter method of 3 phase power measurement. Measurement of frequency and phase angle. Ammeter and voltmeter (both moving coil and moving iron type), extension of range wattmeter, Multimeters, Megger, Energy meter AC Bridges. Use of CRO, Signal Generator, CT, PT and their uses. Earth Fault detection.
Electrical Machines	(a) D.C. Machine – Construction, Basic Principles of D.C. motors and generators, their characteristics, speed control and starting of D.C. Motors. Method of braking motor, Losses and efficiency of D.C. Machines. (b) 1 phase and 3 phase transformers – Construction, Principles of operation, equivalent circuit, voltage regulation, O.C. and S.C. Tests, Losses and efficiency. Effect of voltage, frequency and wave form on losses. Parallel operation of 1 phase /3 phase transformers. Auto transformers. (c) 3 phase induction motors, rotating magnetic field, principle of operation, equivalent circuit, torque-speed characteristics, starting and speed control of 3 phase induction motors. Methods of braking, effect of voltage and frequency variation on torque speed characteristics, Fractional Kilowatt Motors and Single Phase Induction Motors: Characteristics and applications.
Synchronous Machines	Generation of 3-phase e.m.f. armature reaction, voltage regulation, parallel operation of two alternators, synchronizing, control of active and reactive power. Starting and applications of synchronous motors.

Subject Name	Syllabus
Generation, Transmission and Distribution	Different types of power stations, Load factor, diversity factor, demand factor, cost of generation, inter-connection of power stations. Power factor improvement, various types of tariffs, types of faults, short circuit current for symmetrical faults. Switchgears and Protection: Rating of circuit breakers, Principles of arc extinction by oil and air, H.R.C. Fuses, Protection against earth leakage / over current, etc. Buchholz relay, Merz-Price system of protection of generators & transformers, protection of feeders and bus bars. Lightning arresters, various transmission and distribution system, comparison of conductor materials, efficiency of different system. Cable – Different type of cables, cable rating and derating factor.
Estimation and costing	Estimation of lighting scheme, electric installation of machines and relevant IE rules. Earthing practices and IE Rules.
Utilization of Electrical Energy	Illumination, Electric heating, Electric welding, Electroplating, Electric drives and motors
Basic Electronics	Working of various electronic devices e.g. P N Junction diodes, Transistors (NPN and PNP type), BJT and JFET. Simple circuits using these devices.