



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

APPSC-AEE (Prelims)

Online Test Series

ELECTRICAL ENGINEERING

No. of Tests : 18

 Subject Wise Tests	15
 Full Length Mock Tests	3

All tests will be available till 10th Feb 2019

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	GS	Economic development in India since independence with emphasis on Andhra Pradesh + Science & Technology and information Technology + Current affairs	30	30	30 Min	20-12-2018
Test-02	Tech.	Electric Circuits	30	30	30 Min	21-12-2018
Test-03	Tech.	Electrical Measurements and Instruments	30	30	30 Min	22-12-2018
Test-04	GS	Social- economic and political history of modern India with emphasis on Andhra Pradesh + General Science + Current affairs	30	30	30 Min	23-12-2018
Test-05	Tech.	DC Generators and Motors + Transformers	30	30	30 Min	24-12-2018
Test-06	Tech.	Transmission & Distribution + Over Head Line Insulators	30	30	30 Min	25-12-2018
Test-07	GS	Indian polity and governance: constitutional issues, public policy, reforms and e-governance initiatives with specific reference to Andhra Pradesh + Bifurcation of Andhra Pradesh and its Administrative, Economic, Social, Cultural, Political, and Legal implications/problems + Current affairs	30	30	30 Min	26-12-2018
Test-08	Tech.	3-Phase Induction Motors + Single phase induction Motors	30	30	30 Min	27-12-2018
Test-09	Tech.	Underground Cables + Fault Calculations	30	30	30 Min	28-12-2018
Test-10	GS	Physical geography of Indian sub-continent and Andhra Pradesh + Disaster management: vulnerability profile, prevention and mitigation strategies, Application of Remote Sensing and GIS in the assessment of Disaster + Sustainable Development and Environmental Protection + Current affairs	30	30	30 Min	29-12-2018
Test-11	Tech.	3-Phase Alternators + 3-Phase Synchronous Motors	30	30	30 Min	30-12-2018
Test-12	Tech.	Generating Stations + Illumination	30	30	30 Min	31-12-2018

Test No	Subject Name		No. of Questions	Max Marks	Duration	Date of Activation
Test-13	GS	Logical reasoning, analytical ability and data interpretation + Data Analysis: a) Tabulation of data b) Visual representation of data c) Basic data analysis (Summary Statistics such as mean, median, mode, variance and coefficient of variation) and Interpretation	30	30	30 Min	02-01-2019
Test-14	Tech.	Protection + Circuit Breakers	30	30	30 Min	03-01-2019
Test-15	Tech.	Economic Aspects + Utilization of Electrical Energy	30	30	30 Min	04-01-2019

Full Length Mock Tests

Test No	Mock codes	No. of Questions	Max Marks	Duration	Date of Activation
Test-16	Full Length Mock Test - 1	150	150	2 Hours 30 Min	10-01-2019
Test-17	Full Length Mock Test - 2	150	150	2 Hours 30 Min	17-01-2019
Test-18	Full Length Mock Test - 3	150	150	2 Hours 30 Min	24-01-2019

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

Syllabus for General Studies & Mental Ability (Part-A)

Subject Name	Syllabus
GENERAL STUDIES AND MENTAL ABILITY	<ol style="list-style-type: none">1. Events of national and international importance.2. Current affairs- international, national and regional.3. General Science and its applications to the day to day life Contemporary developments in Science & Technology and information Technology4. Social- economic and political history of modern India with emphasis on Andhra Pradesh.5. Indian polity and governance: constitutional issues, public policy, reforms and e-governance initiatives with specific reference to Andhra Pradesh.6. Economic development in India since independence with emphasis on Andhra Pradesh.7. Physical geography of Indian sub-continent and Andhra Pradesh.8. Disaster management: vulnerability profile, prevention and mitigation strategies, Application of Remote Sensing and GIS in the assessment of Disaster.9. Sustainable Development and Environmental Protection10. Logical reasoning, analytical ability and data interpretation.11. Data Analysis:<ol style="list-style-type: none">a) Tabulation of datab) Visual representation of datac) Basic data analysis (Summary Statistics such as mean, median, mode, variance and coefficient of variation) and Interpretation12. Bifurcation of Andhra Pradesh and its Administrative, Economic, Social, Cultural, Political, and Legal implications/problems.

Syllabus for Electrical Engineering (Part-B)

Subject Name	Syllabus
Electric Circuits	Active and passive network elements – dependent and independent sources – response of passive elements to arbitrary excitations – energy stored in inductance and capacitance – Kirchoff's law – formation of mesh and Nodal Integro differential equations – their solutions by classical and Laplace transformation methods – Transient and steady state response of RL, RC elements to impulse, step, ramp and sinusoidal inputs – single phase AC circuits – methods of solutions – poly phase circuits – analysis of balanced and unbalanced circuits – measurements of three phase power.
Electrical Measurements and Instruments	Absolute and secondary instrument types – Principle of operation of different type of instrument – extension of instrument ranges – measurement of voltage, current, power and energy – localization of cable faults – Murray loop and Varley loop tests – Cathode ray Oscilloscope.
Illumination	Solid angle, luminous flux, luminous intensity – Illumination and candle power – laws of Illumination – flood lighting, street lighting – electric lamps.
DC Generators and Motors	Types of DC generators – EMF equation – constructional details – characteristics of shunt, series and compound generators – Armature reaction – types of DC motors – Torque developed in a DC motor – speed controls of DC motors and starters.
Transformers	Constructional details – Principle of operation – vector diagrams on no load and load – regulation and efficiency – equivalent circuits and tests for the determination of parameters of equivalent circuits – types of three phase transformers and their applications – Scott connection of transformers.
3-Phase Induction Motors	Principle of operation – Cage and Slip ring motors – torque slip characteristics – methods of speed control.
3-Phase Alternators	Principle of operation and constructional details – types of Alternators – synchronous impedance – voltage regulation – short circuit ratio and its importance – Phasor diagrams of round rotor and salient pole machines – synchronization – behaviour of an alternator connected to infinite bus – effect of varying excitation current and mechanical torque – power angle curves – control of active and reactive powers.
3-Phase Synchronous Motors	Principle of operation – torque developed and methods of starting – V and Inverted V curves – effects of variations of excitation – synchronous condensers.
Single phase induction Motors	Types of single phase motors – Types of Single phase induction motors – characteristics and methods of starting – shaded pole induction motor.

Subject Name	Syllabus
Transmission & Distribution	Line constants – Inductance and Capacitance calculations – Representation of over head Lines – Short, Medium and Long lines – ABCD constants – Mechanical Design – Sag, Tension Calculations, Tuned Power Lines.
Over Head Line Insulators	Types of Insulators – Potential distributions over a string of suspension insulators – string efficiency – Methods of improving string efficiency.
Underground Cables	Insulation of cables – Grading of cables – Capacitance Measurement in cables – Testing of Cables – Power frequency withstand tests.
Fault Calculations	Balanced Fault calculations on systems – Symmetrical components – Types of faults – Analysis of unbalanced faults.
Generating Stations	Location and types, types of hydroelectric power stations, layout of a hydro-power plant, types of turbines used – Pumped storage installations – Layout of thermal electric power stations, types of turbines used, condensers, cooling towers, boiler feed pump; energy flow diagram of steam power plant. Nuclear power generation; Nuclear fission – types of nuclear power reactors – Principle of a fast breeder reactor.
Protection	Characteristic of Relays – Over current, directional and distance protection of lines. Protection of Alternators against stator faults, rotor faults, loss of excitation, unbalanced loading, overloading, failure of prime-mover. Over speeding and over voltage. Protection of transformers against winding faults, overloads and external short circuits.
Circuit Breakers	Air-blast, oil, minimum oil, vacuum – Sulphur hexafluoride and d.c. circuit breakers – Relative merits and demerits.
Economic Aspects	Generation costs and their classification, load curve, load utilization and plant capacity factors. Load sharing between base load and peak-load stations. Load forecasting. Economical distribution of load between unit within a plant and between plants. Modeling of fuel costs for thermal generation. Optimal operation of an all thermal generating system and of a hydro-thermal system. Consideration of transmission losses.
Utilization of Electrical Energy	Industrial drives – Motors for various drives –Estimating and Rating – Testing of D.C. and A.C. motors – Neutral Earthing.