



# KERALA DEVASWOM RECRUITMENT BOARD

## **Mode of Examination and Syllabus**

Name of Post	:	Assistant Engineer (Electrical)
Name of Devaswom	:	Travancore Devaswom Board
Category Number	:	4/2022
Duration of the test	:	1 hour 15 minutes
Medium of Questions	:	English
Mode of test	:	Objective type (Multiple choice) Test (OMR Valuation)
Total Questions	:	100
Total Marks	:	100

## **Syllabus - Main Topics**

- Part I - General knowledge, Current affairs and Renaissance in Kerala
- Part II - Questions based on the Educational Qualifications fixed for the post
- Part III - Temple Affairs, Hindu Culture, Customs and Traditions, Various Devaswom Boards etc.

## **Detailed Syllabus based on the main topics**

### **Part I**

#### **General Knowledge, Current Affairs and Kerala Renaissance**

**Marks – 10**

1. Current International, National, Regional events & Achievements in the field of Politics, Science and Technology, Arts, Literature, Education, Space exploration, Sports and Cinema.
2. Constitution of India – Preamble. Constituent Assembly. Important features of Indian Constitution. Procedure for amendment to Constitution. Important Constitutional amendments and its purpose. Central State relations. Principles of Secularism. Rights and duties of Citizenship. Judiciary - Central and State - Powers and Functions. Administration of Union Territories. Constitutional Authorities. Administrative and Financial Service under Union and State Government.
3. 125 years of Gandhi legacy. Making of Mahatma. Philosophy of Mahatma. Role of Mahatma in the Freedom Movement. Political, Economical & Social ideas of Mahatma Gandhi. Gandhiji's vision of peace. Gandhian interventions – Quit India Movement, Salt Sathyagraha. Fight against Castism, untouchability and Communal intolerance.
4. Public Administration. Bureaucracy – Features and Functions. Executive, Judiciary and Legislature. Indian Civil Service. State Civil Service – State Administrative Service, Information Commissions – Central & State. Lokpal. Lokayuktha. Human Rights – Central and State Human Rights Commissions – Functions. Acts and Rules regarding Consumer Protection. District Administration – District Collectors. Office of the Advocate General. Various Tribunals and Commissions, Boards and Corporations.

5. State and Union Territories in India, Geographical features. Climate, natural vegetation. Principal Crops. Important river systems. Key industries. Various Tourist Hotspots. Great Islands of India.
6. Indian Economy. National Income. Per Capita Income. Economic planning in India. Niti Ayog. Economic institutions of National Eminence – Functions. Reserve Bank. Public Revenue. State and Central Budget. Goods and Service Tax. GST Council Structure. Central Board of Indirect Taxes and Customs.
7. Environmental challenges. Climate changes. Ocean warming. Need to re-design the path of Economic and Industrial growth. Natural farming. Use of Environmental Energy. International/National Organizations, Government organizations and Agencies working for the protection and betterment of nature. Important Environmental Acts and Rules in India. Internationally acclaimed Environmentalists - their contributions. Important International agreements on conservation of protection of nature. World Climate Summit.
8. Social welfare, Social security and Social development, Legislations and Programmes of Central and State Governments. Social Service Legislations like Right to Information Act, Prevention of atrocities against Women and Children, Food Security Act etc., Social Welfare Programmes like Employment Guarantee Programme, Organ and Blood Donation etc.
9. Kerala Renaissance – Sree Narayana Guru and other reformers. Anticaste movement. Other Reform movements in Kerala. Caste organizations. Temple Entry movements. Nationalist movements in Kerala. Malabar Rebellion of 1921. - Nature of the Revolt. Salt Satyagraha. Travancore State Congress and the Struggle for Responsible Government. Kochi Rajya Praja mandalam. Left movements. Karshaka Sangham in Malabar. Punnapra Vayalar. Aikya Kerala Movement – First Communist Ministry, Historic Legislations – Liberation

Movements. First Communist Ministry – Historic legislations. ‘Kerala Model’ Development. Panchayat Raj and Peoples Planning. Democratic decentralization in India especially in Kerala.

## **Part II**

### **Syllabus based on the Educational Qualification**

**Total Marks : 80**

#### **Basic Electrical Engineering : 15 marks**

- Kirchoff’s current and voltage laws, Analysis of resistive circuits-Mesh analysis, Node analysis, Star-Delta transformation, Comparison of Electric and Magnetic circuits, Analysis of series and parallel magnetic circuits, magnetic circuits with air gap.
- Alternating current fundamentals – Period, Frequency, RMS and average values, peak factor, form factor, complex impedance – series and parallel impedances and admittances. Phasor analysis of RL, RC, RLC circuits. Active, Reactive power and apparent power, Resonance in series and parallel circuits.
- Three phase systems : star and Delta Connections, Three phase three wire and three phase four wire systems.

#### **Network theory : 10 marks**

- Superposition theorem, Thevenins theorem, Norton theorem, Reciprocity theorem, Maximum power transfer theorem, Dependant and Independent sources.

#### **Machines : 25 marks**

- Electromagnetic principles for machines, DC generators and Motors – voltage equations, characteristics, Construction details, Different types

- Transformers – Emf equation, Losses and efficiency, Equivalent circuit
- Alternators – Basic principle, armature windings, Armature reaction, Voltage Regulation, Synchronisation
- Synchronous Motor – Principle, performance and power relation
- Induction motor – 3 phase and single phase – Principle of operation, Mechanical power and torque. Starting methods of single phase I/M

#### **Control System : 5 marks**

- Open and closed loop systems, Signal flow graph, Transfer function, Masons gain formula, Routh stability criterion, Steady state error, steady state error coefficient, Stability

#### **Electronics : 15 marks**

- Analog electronics : Semiconductors, PN junction diode, Zener diode, BJT- Principle of operation, different configuration, Half wave rectifier, full wave rectifier, zener voltage regulator
- Digital Electronics : Number system and codes, Combinational logic circuits – Adder, subtractor, multiplexer, demultiplexer, decoder, encoder. Flip flops, registers, counters, ADC, DAC
- Microprocessor : 8085 Architecture, Addressing mode, Instruction set, Simple program

#### **Power system : 5 marks**

- Modelling of power system components, per unit quantities, symmetrical components, sequence impedances and sequence networks of generators, transformers and transmission line. Power angle curve, steady state stability limit

#### **Power Electronics : 5 marks**

- Structure and characteristics of power semiconductor devices such as TRIAC, GTO, Power MOSFET, IGBT. Turn on methods, Inverters

**Part III -**

**Temple Affairs, Hindu culture, Customs and Traditions,**  
**Various Devaswom Boards etc.**

**Total Marks : 10**

Temple Affairs. Famous Temples in Kerala - Deities, Peculiarities, Location. Temple Festivals. Special ceremonial and devotional functions in temples – It's importance and Social relevance. Temple Arts. Famous Temple Artists. Temple Architecture in Kerala – It's peculiarities and ethnic importance. Great Spiritual leaders, Saints, Thinkers and Philosophers in Hinduism – Their contributions. Holy books of Hinduism – Vedas, Puranas and Upanishads – Basic knowledge. Concept of Devaswoms. History of temples in Kerala. Events that lead to the formation of Devaswoms. Temple Entry Proclamation. Travancore-Cochin Hindu Religious Institutions Act 1950. Present day Administration of Temples in Kerala and Various Devaswom Boards. Kerala Devaswom Recruitment Board - Formation, powers and responsibilities - Hierarchical setup.

Controller of Examinations  
Kerala Devaswom Recruitment Board

**NOTE :- It may be noted that apart from the topics detailed above, questions from other topics prescribed for the educational qualification of the post may also appear in the question paper. There is no undertaking that all the topics above may be covered in the question paper.**