

**FURTHER DETAILS REGARDING MAIN TOPICS OF
PROGRAMME NO. 04/2016 (Item No. 9)**

METER READER/SPOT BILLER

KERALA STATE ELECTRICITY BOARD

(CATEGORY No. 557/2014)

PART I A: BASIC ELECTRICITY

Matters, atomic structure, electric circuits and its types, ohms law, law of resistance, specific resistance, temperature co-efficient series and parallel connection of resistors, Kirchhoff's laws, Wheatstone's bridge causes of fire due to electricity and its extinguishing methods safety precautions. Hand tools, wires.

PART I B: AC FUNDAMENTALS

Definition of AC terms, AC and its advantages, AC through resistance, inductance, capacitance, inductive reactance, RL, RC, RLC series and parallel circuits, power and power factor, comparison of single phase and 3 phase system, Interconnection of 3 phase system, Necessity of high power factor and its improvement.

PART I C: MAGNETISM

Properties of magnet, types of magnet, important definitions, magnetic materials, hysteresis loss, determination of the direction of magnetic flux produced around a conductor, solenoid, its field and polarity, faraday's laws of electromagnetic induction, Lenz's law, eddy current, self inductance, mutual inductance, capacitors, different types of capacitors, connection of capacitors, electrolysis, faraday's law of electrolysis, Primary cells, secondary cells and special cells.

PART I D: ELECTRIC MACHINES:

Transformer- single phase –construction,type, losses, efficiency, regulation

3 phase- connections, parallel operations, parts, cooling, oil testing

AC motors- single phase, classification, application

3 phase motors- types, slips, speed change, types of starter, application, torque, losses and efficiency.

AC generators-parts, synchronizing

DC generators- parts, characteristics, types, applications, efficiency, EMF equation
DC motor- parts, types, 2 point starter, 3 point starter, 4 point starter.

PART I E: INSTRUMENTS& EARTHING

Classification, MC & MI meter, dynamo type wattmeter, static wattmeter, multimeter, megger, Ohm-meter, earth tester, power factor meter, frequency meter, energy meter single phase and 3 phases.

Necessity of earthing, rules for earthing, plate earthing, pipe earthing, earth resistance values

PART I F: GENERATION, TRANSMISSION & DISTRIBUTION

Generation, types of generating stations, History

Transmission- O.H. lines, U.G. cables, Insulators, poles& towers, lines protecting equipments, circuit breakers.

Distribution- isolators, ELCB, MCB, ACB, OCB, Different types of switches, different types of electrical accessories

Laws of illumination- carbon filament lamp, metal filament lamp, mercury vapour lamps, sodium vapour lamp, fluorescent lamp.

PART II: BASIC ELECTRONICS

Semiconductors, Diode, Transistor, IC, OPAMP, FET, SCR, UGT, DIAC, TRIAC, Opto electronic components, rectifier, filters, amplifiers, transistor connection, basic computers, basic digital electronics.

PART III: APPLIED MECHANICS & HEAT ENGINE

Stress, strain, metals, ores, purification, burnouses, alloys, malleability, ductility, tempering, hardening, annealing, bending moment, shearing force, I.C. engines, E.C. engines, two stroke, four stroke, diesel engine, petrol engine, cylinder arrangement.

PART IV: GENERAL KNOWLEDGE, CURRENT AFFAIRS & RENAISSANCE IN KERALA

General Knowledge

Facts about India

Geography of India – Physical features – Climate – Soils – Rivers – Famous sites – etc.

Demography – Economic and social development – Poverty alleviation – Economy and planning – etc.

History of India – Period from 1857 to 1947 – National movement

Facts about Kerala

Geographical Facts – Physical features – Climate – Soils – Rivers – Famous sites – etc.

Renaissance in Kerala

Important Events/Movements/Leaders

Brahmananda Swami Sivayogi, Chattampi Swami, Sree Narayana Guru, Vagbhatananda, Thycaud Ayya, Ayya Vaikundar, Poikayil Yohannan (Kumara Guru), Ayyankali, Pandit Karuppan, Mannathu Padmanabhan, V.T. Bhattathirippad, Dr. Palpu, Kumaranasan, Vakkom Moulavi, Blessed Kuriakose Elias Chavara, Etc.

Current Affairs

Important world, national and regional events related to the political and scientific fields, sports, cinema and literature etc.

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.