KGC (22) 1031 **Reg. No:……..**
REVISION - 2022 **Signature:……...**

KERALA GOVERNMENT CERTIFICATE EXAMINATION IN ELECTRICAL ENGINEERING - APRIL 2024

ELECTRICAL & ELECTRONICS - I

[Maximum Marks: 60] [Time: 3 hours]

PART A
(Maximum Marks: 20 x 1 = 20 Marks)

I. Answer the following questions by choosing the correct answer from the options given below. Each question carries 1 mark.

Q No.	Question	Module
1	What immediate action should be taken to rescue the victim, if he is still in contact with the electrical power supply? (a) Pull or push him from the contact by hand (b) Inform your authority about this electric shock (c) Call someone for helping to remove him from contact (d) Break the contact by switching of the power supply	M1.1
2	What does this sign indicate?  (a) Laser beam (b) Wear respiration (c) Risk of fire (d) Safety provision	M1.2
3	When treating an electrical burn, what should you do first? (a) Ensure that the casualty is still breathing. (b) Wash the burn with cold water. (c) Check for danger and ensure that contact with the electrical source is broken. (d) Check for level of response.	M1.3
4	What is the full form of RCCB? (a) Residual control circuit breaker (b) Residual current circuit breaker (c) Residual circuit current breaker (d) Residual current control breaker	M1.4

5	Why does the panel board have two separate Earthing? (a) Panel board is made in metal box (b) Control the stray field in the panel. (c) Reduce the voltage drop in the panel board. (d) Ensure one earthing in case of other failure.	M1.5
6	Metal conductors conduct electricity due to the flow of (a) electrons only (b) positive ions only (c) electrons and positive ions only (d) neutral atoms only	M2.1
7	In electricity, ampere-hours is the unit of (a) power (b) energy (c) strength of current (d) quantity of electricity	M2.2
8	What is a unidirectional voltage? (a) AC voltage (b) DC voltage (c) Both a and b (d) None of the above	M2.3
9	Electrical appliances are connected in parallel because it (a) Draws less current (b) Is a simple circuit (c) Makes the operation of appliances independent of each other (d) Results in reduced power loss	M2.5
10	Electrical loads will not work unless their electrical circuit is a ….. (a) Short circuit (b) Parallel circuit (c) Series circuit (d) Closed circuit	M2.6
11	Which of the following wiring system provides a long life to wiring? (a) Cleat wiring (b) Conduit wiring (c) Metal sheathed (d) Cab tyre sheath (CTS)	M3.1
12	Why armouring is provided in cables? (a) Protect from short circuit (b) Protect from surges (c) Protect from mechanical injury (d) Reduce voltage drop	M3.12

13	Which type switch is used for stair case wiring? (a) one way switch (b) limit switch (c) two way switch (d) push button	M3.3
14	The ACSR is used in place of copper in overhead line because of ……. (a) Higher current carrying capacity (b) Being lighter in weight (c) Economy (d) Higher tensile strength	M3.9
15	Which of the following is unit of inductance? (a) Ohm (b) Ampere turns (c) Henry (d) Weber/meter	M3.2
16	Which of the following device is used to charge battery? (a) Engine generator set (b) Motor generator set (c) Rectifier (d) Any of the above	M4.3
17	While preparing electrolyte for lead-acid battery (a) Acid is poured into water (b) Water is poured into acid (c) Anyone of the two can be added to other chemical (d) None of the above	M4.7
18	In a lead-acid cell, the capacity does not depend on its (a) Rate of discharge (b) Temperature (c) Rate of charge (d) Quantity of active materials	M4.3
19	The current flow through electrolyte is due to the movement of (a) Electrons (b) Ions (c) Holes (d) None of the above	M4.1
20	Which instrument is used to measure specific gravity of electrolyte in lead acid battery (a) Barometer (b) Manometer (c) Hydrometer (d) Psychomotor	M4.8

PART B
(Maximum Marks: 8 x 5 = 40 Marks)

II. Answer any eight questions from the following. Each question carries 5 Marks.

Q No	Question	Module
1	With a neat sketch explain pipe Earthing.	M1.5
2	Why are circuit breakers preferred to fuses?	M1.4
3	What is a lightning arrester? Write the names of different type lightning arrester.	M1.6
4	Write the short notes on peak value and frequency.	M2.21
5	What does Faraday's First Law and Second Law of Electromagnetic Induction state?	M2.19
6	State Fleming's right hand rule.	M2.17
7	What does underground cable mean? With neat sketch mark the parts of an underground cable.	M3.12
8	Define service connection. Write different type of service connections.	M3.6
9	What is conduit wiring? State merits and demerits of conduit wiring.	M3.2
10	With examples, explain primary cells.	M4.1
11	Briefly describe five ways to maintain lead acid batteries.	M4.3
12	What are secondary cells? What is the advantages of secondary cell over primary cells?	M4.1

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