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Reg. No. :

Code No. : 10438 E Sub. Code : CSPH 31

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2023

Third Semester

Physics

Skill Based Subject — MAINTENANCE OF
ELECTRICAL APPLIANCES

(For those who joined in July 2021 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. One nanofarad is

- (a) 1×10^{-12} F (b) 1×10^{-6} F
(c) 1×10^{-9} F (d) 1×10^9 F

2. One Kilowatt in joule is

- (a) one joule
(b) 10^6 joule
(c) 3.6×10^6 joule
(d) 1 unit of power consumed

3. Transformer oil should be

- (a) thicker than water
(b) thinner than water
(c) moisture free
(d) viscous free

4. In a transformer, iron losses are measured by

- (a) multimeter (b) short circuit test
(c) open circuit test (d) thermometer

5. The heating element in an electric water heater must have

- (a) high melting point
(b) high resistivity
(c) low temperature coefficient of resistance
(d) all the above

6. The capacity of a voltage regulator is expressed in
(a) volt (b) KV
(c) VA (d) KVA
7. A.C can be converted into D.C with
(a) filter (b) inverter
(c) rectifier (d) all the above
8. Solar panels produce
(a) A.C power
(b) D.C power
(c) both A.C and D.C power
(d) none of the above
9. Switches should always be
(a) in the live wire
(b) in the neutral wire
(c) in the earth wire
(d) anywhere

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10. RCD is
(a) Resistance Capacitance Devices
(b) Reverse Charge Devices
(c) Residual Current Devices
(d) None of the above

PART B — (5 × 5 = 25 marks)

Answer ALL questions choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Describe the construction and working of a galvanometer.
Or
(b) Explain the theory, how a galvanometer may be converted into a voltmeter.
12. (a) List out the uses of transformers.
Or
(b) Compare core type and shell type transformers.

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13. (a) Explain the principle and working of an electrical fan.

Or

(b) Explain the principle and working of a washing machine.

14. (a) Give and explain the colour code for insulating wires.

Or

(b) Describe the production of A.C. and D.C.

15. (a) Describe the different types of switches and their uses.

Or

(b) Explain the wiring of the earth leak circuit breaker (ELCB).

PART C — (5 × 8 = 40 marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Describe different types of capacitors (any five).

Or

(b) Discuss air-core and ferrite core inductors. Point out their specific uses.

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17. (a) Write in detail about classification of transformers.

Or

(b) Write about the maintenance of power transformers.

18. (a) Describe a fluorescent lamp and explain its working.

Or

(b) Give a layout diagram of (i) wet grinder and (ii) mixer. Describe their essential parts and their functions.

19. (a) Describe with a neat sketch three phase power generator and explain its working.

Or

(b) Discuss the various system of house wiring.

20. (a) Describe a ground fault protection method.

Or

(b) Explain the working of the circuit diagram of an inverter.

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