

(6 pages)

Reg. No. :

Code No. : 20395 E Sub. Code : CSPH 31

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

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 — ($10 \times 1 = 10$ marks)

Answer ALL questions.

Choose the correct answer :

1. An ammeter is connected is _____ with the circuit.
- (a) parallel
 - (b) series
 - (c) parallel or series
 - (d) none of these

2. Calculate the number of units of electricity used if a bulb of 100 W is kept on for 5 hours.
- (a) 1 unit (b) 0.1 unit
 - (c) 5 unit (d) 0.5 unit
3. For short circuit test and open circuit test of transformers, the instruments are connected on _____
- (a) LV side and HV side respectively
 - (b) HV side and LV side respectively
 - (c) HV side only
 - (d) LV side only
4. Auto transformer is used in transmission and distribution when _____
- (a) operator is not available
 - (b) iron losses are to be reduced
 - (c) efficiency consideration is ignored
 - (d) transformation ratio is small
5. In refrigerators, for obtaining high coefficient of performance, the pressure range of compressor should be _____
- (a) high (b) low
 - (c) optimum (d) any value

6. Which of the following is used in automatic control of street lights?
(a) thermistor (b) photoconductor
(c) transistor (d) thermostat
7. Which of the following statements is incorrect for alternating current?
(a) it can be transmitted over long distance
(b) its production is cheaper
(c) it has a constant value
(d) its voltage can be easily changed
8. In wiring system, cheapest and simple method is _____
(a) Cleat wiring
(b) PVC sheath wire
(c) Lead connected wiring
(d) Wooden casing capping wiring
9. What is the major cause of the failure of the circuit breaker?
(a) trip circuit open
(b) trip latch defective
(c) spring defective
(d) all

10. Flemmings right hand rule is used to find the _____
(a) direction of rotation
(b) direction of flux
(c) direction of emf
(d) direction of torque

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Explain the flow of electrons in a conductor and current direction.

Or
(b) Describe the measurement of resistance and voltage using a multimeter.
12. (a) Compare core type and shell type transformers.

Or
(b) Discuss the various methods used to cool transformers.

13. (a) Describe a fluorexent lamp and explain its working.

Or

- (b) Explain the construction and working of voltage stabiliser.

14. (a) Write the differences between single phase and three phase connection.

Or

- (b) Explain electrical circuit overloading.

15. (a) Write the different types of fuses, their rating and specific uses.

Or

- (b) Give the principle of an electric motor and explain a DC motor.

PART C — (5 × 8 = 40 marks)

Answer ALL questions choosing either (a) or (b).
Each answer should not exceed 600 words.

16. (a) Describe the various forms of resistors.

Or

- (b) Describe the conversion of galvanometer into voltmeter.

17. (a) Write in detail about the classifications of transformers.

Or

- (b) Define : transformer. Mention the sources of energy loss in a transformer.

18. (a) Explain the various parts of a wet grinder and explain their functioning.

Or

- (b) With neat sketch, explain the construction and working of electric iron box.

19. (a) Describe star connection and delta connection with neat wiring diagram.

Or

- (b) Explain (i) electrical short circuiting (ii) colour code for insulating wires.

20. (a) Describe with a neat sketch, a relay and its functioning.

Or

- (b) Explain the function of an UPS with neat sketch.