(6 pages)

Reg. No. : ....

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SSPH 3 A

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2018.

Third Semester

Physics

Skill Based Elective — MAINTENANCE OF
ELECTRICAL APPLIANCES

(For those who joined in July 2016 and afterwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer.

1. The S.I. unit of inductance is

    (a) Pascal   (b) Henry

    (c) Watt   (d) Ampere

2. The resistance $R\alpha$ ————

    (a) $\dfrac{l}{A}$ (b) lA

    (c) lA^2 (d) $\dfrac{l}{A^2}$

3. A transformer transfer energy by

    (a) inductive coupling (b) exchanging

    (c) conversion   (d) none

4. The electric ion converts ———— energy into heat energy.

    (a) mechanical   (b) thermal

    (c) electrical   (d) sound

5. The refrigerator uses ———— gas.

    (a) Nitrogen   (b) Freon

    (c) Ethane   (d) CO_2

6. The type of motor used in electric fan is ————

    (a) single phase induction motor

    (b) synchronous motor

    (c) d.c. motor

    (d) none of these

7. In a short circuit, current through the circuit is

   (a) zero   (b) non-zero

   (c) minimum   (d) infinity

8. In high temperature applications, the insulation material used is —————

   (a) PVC   (b) Enamel

   (c) Mica   (d) Rubber

9. The purpose of the filaments at the end of the flourescent lamp is to

   (a) ionize the gas

   (b) collect electrons

   (c) emit electrons

   (d) emit photons

10. The fuse must be placed in ————— with the circuit to be protected.

    (a) parallel   (b) series

    (c) anywhere   (d) none

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Three capacitors A, B, C have capacitance 15 μF, 20 μF and 35 μF respectively. Calculate the effective capacitance when they are connected.

    (i) Parallel

    (ii) Series.

    Or

    (b) Explain various types of resistors.

12. (a) Obtain an expression for the voltage transfer ratio of a transformer.

    Or

    (b) Briefly explain the various uses of transformers.

13. (a) Explain the function of mixer.

    Or

    (b) Describe the construction and working of electric ion.

14. (a) Describe star connection.

Or

(b) Write a note on single phase AC generator.

15. (a) Write a note on fuses.

Or

(b) Describe the construction and working of 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) Explain various types of capacitors.

Or

(b) Explain with relevant theory how a galvanometer may be converted into voltmeter.

17. (a) Describe the construction and working of cone and shell type transformers.

Or

(b) What is a transformer? Explain the principle and working of auto transformer.

18. (a) Write a note on :

(i) Elective fan

(ii) Refrigerator.

Or

(b) Describe the construction and working of a flourescent lamp.

19. (a) Describe various systems of domestic wiring.

Or

(b) Describe the construction and working three phase A.C generator.

20. (a) Describe with neat diagram the Earth Leak Circuit Breaker (ELCB) Explain its working.

Or

(b) Describe the construction and working of UPS.

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Nesamony Memorial Christian College, Marthandam