

(6 pages)

Reg. No. : .....

Code No. : 10871 E      Sub. Code : ESPH 23

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Second Semester

Physics — Main

Skill Enhancement Course – HOME ELECTRICAL  
INSTALLATION

(For those who joined in July 2023 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. A single winding transformer is called

- (a) A power transformer
- (b) A distribution transformer
- (c) A welding transformer
- (d) An auto transformer

2. Why we use low internal resistance in series with an ammeter?

- (a) Low selectivity
- (b) High selectivity
- (c) Low voltage drop on ammeter
- (d) High voltage drop across ammeter

3. Batteries are generally connected in \_\_\_\_\_.

- (a) Series
- (b) Parallel
- (c) Either series or parallel
- (d) Neither series nor parallel

4. Multi-core cables generally use \_\_\_\_\_.

- (a) Oval shaped conductors
- (b) Sector shaped conductors
- (c) Square shaped conductors
- (d) Either (a) or (b)

5. Which size wire has the highest current carrying capacity?

- (a) 4 gauge                      (b) 10 gauge
- (c) 12 gauge                    (d) 18 gauge

6. Which of the following metal is used to make electrical wire?

- (a) Copper                      (b) Silver
- (c) Lead                        (d) Magnesium





7. The windings of two phase alternator are \_\_\_\_\_ from each other.

- (a)  $120^\circ$                       (b)  $180^\circ$   
(c)  $90^\circ$                         (d)  $0^\circ$

8. How much energy in kilowatt hour is consumed in operating ten 50 watt bulbs for 10 hours per day in a month (30 day).

- (a) 1500                        (b) 5000  
(c) 15                          (d) 150

9. Which among these fuse is very fast in operation?

- (a) Semiconductor fuse  
(b) HRC type fuse  
(c) Cartridge types fuse  
(d) Kikkat type fuse

10. During electrical work, which one of the following avoids electric shock?

- (a) Dry wood  
(b) Wet rope  
(c) Metal rod  
(d) Wet wood

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PART B — ( $5 \times 5 = 25$  marks)

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

Each answer should not exceed 250 words.

11. (a) Explain the process of electromagnetic induction.

Or

(b) Write the symbols and nomenclature of AC ammeter and voltmeter.

12. (a) Define transmission losses. Explain the types of transmission losses.

Or

(b) Explain the tests to identify the quality of connecting wires.

13. (a) Explain the different types of switches.

Or

(b) Describe the methods of fixing tube lights and fans.

14. (a) Explain the work done by electrical energy. Explain power rating of electrical appliances and give its unit.

Or

(b) Explain Joule's heating effect.

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15. (a) Write the different between fuse and circuit breakers.

Or

- (b) Give the do's and don'ts to avoid electric shocks at home.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Draw a simple electrical circuit and explain.

Or

- (b) Explain the different types of capacitors.

17. (a) Explain the production and transmission of electricity.

Or

- (b) Write the difference between series and parallel connection with diagram. Which connection is better series or parallel? Give reasons.

18. (a) Describe the installation of an electric bell with neat diagram.

Or

- (b) Explain the electrical wiring used for AC and fridge.

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19. (a) Describe single and three phase connection.

Or

- (b) (i) Explain the different measures to save electrical energy.

- (ii) Define energy audit and give its uses.

20. (a) Explain the color specification of electrical wire as per insulation.

Or

- (b) Describe short circuiting and over loading.

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