(6 pages) **Reg. No. :** .....

Code No. : 30755 E **Sub. Code : ESPH 31**

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

Third Semester

Physics — Skill Enhancement Course

MAINTENANCE OF ELECTRICAL APPLIANCES

(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 multimeter can be used to measure ————

(a) Phase (b) Pressure

(c) Resistance (d) Volume

2. The 33 KΩ resistor has a color code ————

(a) orange yellow orange

(b) orange black orange

(c) orange orange orange

(d) orange orange red

3. Power consumption of a ceiling fan is typically ————

(a) 40W (b) 40-50W

(c) 60-70W (d) 10-120W

4. Filament of an electric bulb is made up of ————

(a) tungsten (b) nichorme

(c) silver (d) zinc

5. The capacity of a washing machine is expressed in ————

(a) litre (b) $meter^3$

(c) kg (d) farad

6. The heating element in an electric water heater must have ————

(a) high melting point

(b) high resistivity

(c) small temperature coefficient of resistance

(d) all the above

7. An electric Kettle consumes 1 KW of electric power when operated at 220 V. A fuse wire of what rating must be used for it?

(a) 2A (b) 4A

(c) 1A (d) 5A

8. The working of a hair dryer is based on ————

(a) Ampere's law

(b) Ohm's law

(c) Wien's law

(d) Joule's law of heating

9. An electrically operated switch is ————

(a) fuse

(b) relay

(c) thermostat

(d) none

10. What is the main purpose of an electrical switch?

(a) To convert AC to DC

(b) To control the flow of electricity

(c) To convert DC to AC

(d) To measure the current flow

PART B — (5 × 5 = 25 marks)

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

11. (a) Write a short note on voltmeter.

Or

(b) List out the uses of transformers.

12. (a) Explain the principle and working of an electric bulb.

Or

(b) Write a short note on mixie.

13. (a) Explain electrical circuit overloading.

Or

(b) Give the principle of water pump motor.

14. (a) Write a note on room heater.

Or

(b) Explain the working principle of rice cooker.

15. (a) Discuss about the Residual Current Circuit Breaker (RCCB).

Or

(b) What are fuses? How do they functioning?

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 construction and working of a galvanometer.

Or

(b) Describe about the different types of capacitors.

17. (a) Explain the working principle of LED lamps.

Or

(b) With a neat sketch, explain the construction and working of an electric fan.

18. (a) Explain the principle and working of storage and instant type water heater.

Or

(b) Give the purpose of doing earthing. Explain different method of earthing.

19. (a) Explain in detail, electric toasters.

Or

(b) Describe about the electric iron and immersion rod.

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

Or

(b) Explain the working principle of ELCB.

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