Roll No. | | | | | | | | | | | | | Total No. of Pages : 02

Total No. of Questions : 09

B.Sc.(Hons) Aircraft Maintenance (2018 Batch)(Sem.–2)

ELECTRICAL FUNDAMENTALS-I

Subject Code :BSCRAM-203-18

M.Code :75835

Time : 3 Hrs. **Max. Marks : 60**

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

SECTION-A

1. Write briefly / Fill in the blank :

a) What is basic difference between atoms and molecules?

b) How electricity conducts in vacuum (i.e. there is no medium)?

c) Compare potential difference and electromotive force.

d) A 2 ohm resistor is connected in series with a parallel combination of two resistors of 4 ohmeach. What is equivalent value of this series -parallel combination?

e) Define time-constant graphically.

f) What is basic concept of eddy current? Is it harmful or useful for any circuit?

g) Which power factor (i.e. lagging, leading or unity) is considered better?

h) Define efficiency of a transformer.

i) Draw input-output characteristics of a high pass filter.

j) Kirchhoff's laws are applicable to …….. (linear/nonlinear/both linear and nonlinear)circuits.

SECTION-B

2. State and explain Coulomb's law.

3. State Ohm's law and explain it with the help of a suitable example.

4. Explain color coding of a resistor. What will be color code of a resistor having value 100000±5% ohm?

5. Discuss different types of capacitors. How are capacitors tested?

6. Draw Hysteresis (B-H) curve. Where is it used?

SECTION-C

7. A series-connected R-L-C circuit, supplied with an ac voltage source of 230V (rms) and 50-Hz,has R = 4Ω, L = 25mH and C= 4μF. Determine source current and power factor.

8. Discuss basic working principle of a transformer. A 200kVA, 250/500-V transformer delivers power at full load and at 0.8 p.f. lagging. The losses of the transformer at full load are 500W. Calculate its efficiency.

9. Write short notes on operation, uses and applications of filters.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.