C16- EE-**106**

6040

BOARD DIPLOMA EXAMINATION, (C-16)

JUNE-2019

DEEE - FIRST YEAR EXAMINATION

BASIC ELECTRICAL ENGINEERING

Time: 3 Hours Max.Marks:80

PART-A

10x3=30M

Instructions: 1) Answer **all** questions. Each question carries **3** marks.
2) Answer should be brief and straight to the point and shall exceed **five** simple sentences.

1) State limitations of ohms law.

2) Define specific resistance and state its SI units.

3) Define thermal Efficiency.

4) List any 3 applications of infra red lamps.

5) State and explain Fleming's left Hand rule.

6) Draw the field patterns due to (a) Solenoid (b) Toriod.

7) Derive an expression for lifting power of a magnet.

8) Define self and Mutual Inductances.

9) State different types of capacitors.

10) Define Absolute and Relative permittivity.

PART-B

5x10=50M

Instructions: 1) Answer any Five questions and each question carries Ten marks.

2) The answer should be comprehensive and the criteria for valuation is the content but not the length of the answer.

11) (a) State the laws of resistance. 5M

(b) Explain the effect of temperature on resistance for different materials. 5M

12) Two resistances of 4 ohms and 6 ohms in parallel are in series with another resistance of 12 ohms. If the current flowing in 12 ohms resistor is 2A, 10M

Determine (i) The current flowing through 4 ohms and 6 ohms resistors and (ii) Voltage across the whole circuit.

13) Find the current taken by a 400V d.c. motor driving on pump to raise 1000 litres of water per minute to a height of 25 metres above the level of the sump. The efficiency of motor is 80% and pump efficiency is 90%. 10M

14) Explain the operation of (i) electric kettle and (ii) electric cooker with a neat sketch. 10M

15) (a) Compare magnetic circuit and electrical circuit. 5M

(b) Explain the concept of magnetic field lines around current carrying conductor. 5M

16) Derive an expression for energy stored in a magnetic field. 10M

17) The combined inductance of two coils A and B when connected in series are 0.6H and 0.3H for series aiding and series opposing connections respectively, if one of the coils when isolated has a self inductance of 0.1H. Calculate.

(i) The self inductance of the other coil (ii) The mutual inductance between the coils (iii) Coefficient of coupling. 10M

18) (a) Write the properties of electro static lines of force. 5M

(b) State and explain coulomb's laws of electro statics. 5M

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