C14- AEI-**106**

4048

BOARD DIPLOMA EXAMINATION, (C-14)

MARCH/APRIL-2019

DAEIE - FIRST YEAR EXAMINATION

BASIC ELECTRICAL ENGINEERING

Time: 3Hours] [Max.marks:80

PART-A **10x3=30M**

Instructions: 1) Answer **all** questions and each question carries **three** marks.
2) Answer should be brief and straight to the point and shall not exceed five simple sentences.

1) Define resistance and mention its S.I unit.

2) Define conductane and mention its S.I unit.

3) Define Electrical work and mention its S.I unit.

4) Define Thermal efficiency.

5) Draw the lines of force around a magnet.

6) State Flemming's Left hand rule.

7) State the co-efficient of coupling.

8) Define Mutual inductance.

9) State Gauss theorem.

10) List the parts of lead acid battery.

PART-B

5x10=50M

Instructions: 1) Answer any **five** questions. Each question carries **ten** marks.
2) The answers should be comprehensive and the criteria for valuation is the content but not the length of the answer.

11) a) The resistance of coil of wire increases from 40Ω at 10^0 c to 48.25Ω at 60^0 c. Find the temperature coefficinet at 0^0c of the wire. 7M
b) Define temperature coefficient of resistance. 3M

12) A residential house has th following load:
a) 10 lamps of 60W each, working for 8 hours a day
b) 6 lamps of 100W each, working for 5 hours a day
c) 2 heaters of 1000W each working for 3hours a day
d) 5 ceiling fans of 80W each working for 12 hours a day
e) One 1.5 HP pump set of efficiency 85% running 2hours a day.
Calculate the monthly electricity bill with the rate of Rs.1.35 for first 50 units and Rs. 2.15 for the remaining units.

13) Explain the construction and working of Geyser with diagram.

14) Explain the mechanical force on a current carrying conductor placed inside a magnetic field with diagram.

15) a) Plot the filed patterns due to straight current carrying conductor and solenoid. 5M
b) Derive the formula for capacitance of a capacitor. 5M

16) a) Derive an expression for energy stored in a magnetic field. 6M
b) State Faraday's laws of electromagnetic induction. 4M

17) a) Compare Electrstatic and Magnetic circuit. 5M
b) Explain the equivalent capacitance when two capacitors are connected in parallel. 5M

18) Write the chemical reactions during charging and discharging of both Lead -Acid battery and Nickel-iron cell.

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