

INDIAN MARITIME UNIVERSITY
Time Bound Assignment
B Tech (ME) Arrear Examinations
September/October 2020
UG11T2104

BASIC ELECTRICAL AND ELECTRONICS ENGINEERING

Date: 15/09/2020

Max Marks: 70

Duration: 3 Hrs

Pass Marks: 35

Part – A (compulsory)

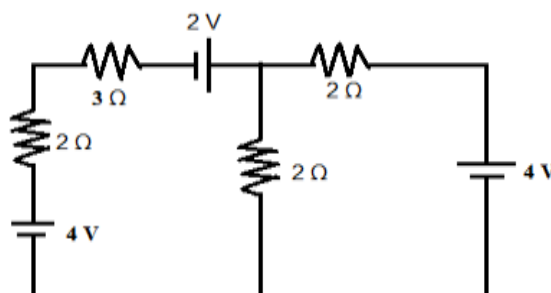
Answer the following (10x2=20 Marks)

1. What is the difference between emf and potential difference?
2. What are the limitations of Ohm's law?
3. A 120 V a.c circuit contains 10Ω resistance and 30Ω reactance in series. What would be the average power in the circuit?
4. A coil of 300 turns, wound on a core of non-magnetic material, has an inductance of 10 mH. Calculate (a) the flux produced by a current of 5 A and (b) the average value of emf induced when current of 5 A is reversed in 8 milliseconds.
5. Write the advantages of Permanent-magnet Moving Coil Instrument.
6. What is AC Bridge?
7. Explain the types of Cable Faults Commonly Found In the underground Cables.
8. What is semiconductor explain?
9. What is zener break down?
10. Explain working of npn transistor.

Part – B

Answer any 5 out of 7 questions (5 x 10= 50 marks)

11. a) State and Explain the Maximum Power Transfer Theorem. **[5 marks]**
- b) Using Node method, find the current in the 3Ω resistance shown in figure below. **[5 marks]**



- 12. a)** Write the comparison between Magnetic and Electric Circuits. **[5 marks]**
- b)** Two inductances of 15 mH and 25 mH are connected in series such that their fluxes oppose each other. They are so placed that the coefficient of coupling is 0.8 Calculate the total inductance of series combination. **[5 marks]**
- 13. a)** Draw and Explain the graphical representation of resonance in an R-L-C series circuit. **[5 marks]**
- b)** A coil of resistance 10Ω and inductance .014 H is connected in series with a capacitor of $150\ \mu F$ across a 200 V, 50 Hz supply. Calculate inductive reactance, capacitive reactance, impedance, Current, voltage across coil and capacitor. **[5 marks]**
- 14.** What is transducer? Where are they used and what for? **[10 marks]**
- 15.** Draw and Explain construction of Dynamometer type wattmeter. Write the advantages and disadvantages. **[10 marks]**
- 16.** Write the short notes: (a) field emission, (b) Photoelectric emission **[5 + 5 = 10 marks]**
- 17. a)** Define Half Wave Rectifier? What are the advantages and disadvantages? **[5 marks]**
- b)** How will use Transistor as an Amplifier? **[5 marks]**

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