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Question Paper Code : X 20660

B.E./B.Tech. DEGREE EXAMINATIONS, NOV./DEC. 2020
Second Semester
Civil Engineering
GE 6252 – BASIC ELECTRICAL AND ELECTRONICS ENGINEERING
(Common to all Branches)
(Regulations 2013)
(Common to : PTGE 6252 – Basic Electrical and Electronics Engineering for B.E. (Part – Time) – First Semester – Civil Engineering)
(Regulations 2014)

Time : Three Hours Maximum : 100 Marks

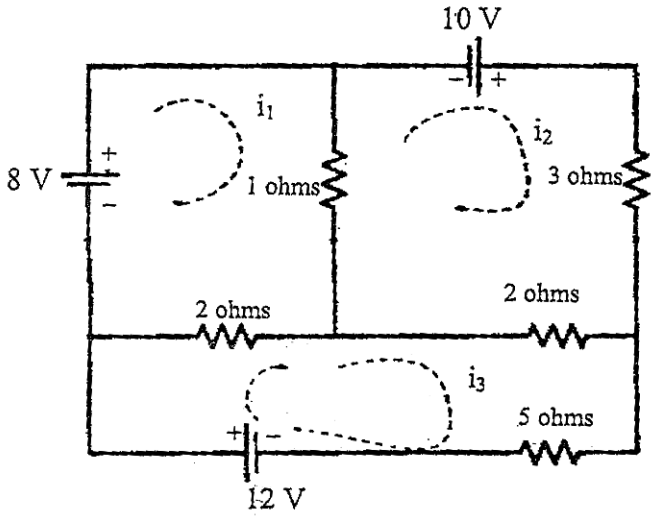
Answer ALL questions.

PART – A **(10×2=20 Marks)**

1. State Kirchhoff's Voltage Law.
2. Mention the errors in Moving iron instruments.
3. List out the types of single phase induction motors.
4. Calculate the e.m.f generated by a 4-pole, wave-wound armature having 45 slots with 18 conductors per slot when driven at 1200 r.p.m. the flux per pole is 0.016 Wb.
5. What is the difference between zener and avalanche breakdown ?
6. Define ripple factor.
7. State De Morgan's theorem.
8. What is register in digital systems ?
9. List out the limitations of amplitude modulation.
10. What is the function of a satellite transponder ?

PART – B **(5×16 =80 Marks)**

11. a) For the give circuit, determine the current in 5 Ω resistor. **(16)**



(OR)

b) i) Explain the construction and working of an Energy Meter. **(12)**

ii) How do you extend the range of an ammeter and a voltmeter ? **(4)**

12. a) Explain the construction and principle of operation of a DC generator with neat sketch. **(16)**

(OR)

b) i) Derive the torque and speed equations of DC motor. **(8)**

ii) Explain the construction details of single phase transformer. **(8)**

13. a) i) Explain the working of PN junction diode and mention its applications. **(8)**

ii) Draw the circuit diagram for full wave rectifier and explain its working. **(8)**

(OR)

b) For the CE transistor configuration, draw the circuit and explain the input and output characteristics. **(16)**

14. a) i) List various types of logic gates with its logic symbols and truth table. List also universal gates. **(8)**

ii) Realize the logic expression Y = (A + B) (A' + C) (B + D) using basic gates. **(8)**

(OR)

b) Explain the full adder circuit with its expressions and truth table. **(16)**

15. a) Describe the principle of modulation and its needs. Write the short note on amplitude modulation and frequency modulation. **(16)**

(OR)

b) Describe the functional block diagram of Monochrome TV transmitter and receiver with a neat sketch. **(16)**

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