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**Question Paper Code: 52306**

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2019

Second Semester

Civil Engineering

01UEE206- BASIC ELECTRICAL AND ELECTRONICS ENGINEERING

(Common to Mechanical Engineering)

(Regulation 2013)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions.

PART A - (10 x 2 = 20 Marks)

1. What are the limitations of ohm's law?
2. What is the use of copper shading band in energy meter?
3. Why series motor cannot be started without any load?
4. Why the transformer rating is in kVA?
5. What is doping of a semiconductor?
6. What is meant by uncontrolled rectifiers?
7. Draw the symbol and truth table of EX-NOR gate.
8. What is decade counter?
9. Sketch the block diagram of basic communication system.
10. Define the term modulation.

PART - B (5 x 16 = 80 Marks)

11. (a) Briefly explain the construction and working of attraction type moving iron instrument. (16)

Or

- (b) Explain the principle and operation of dynamometer type wattmeter and derive deflecting torque. Write advantages and disadvantages. (16)
12. (a) Explain the principle, construction and working of a D.C motor. Also explain its types. (16)

Or

- (b) (i) Explain the working of capacitor start single phase induction motor with suitable diagram. (8)
- (ii) A single phase,  $25\text{Hz}$  transformer has 50 primary turns and 600 secondary turns. The cross sectional area of the core is  $400\text{sq.cm}$ . If the primary of the transformer is connected to  $230\text{V}$  supply, find (a) the secondary induced emf (b) the flux density (peak) in the core. (8)
13. (a) Explain the half wave and full wave rectifier with neat circuit diagram and wave forms. (16)

Or

- (b) Draw and explain the input and output characteristics of CB, CE and CC configuration in Bipolar Junction Transistor. (16)
14. (a) Explain with neat sketches the output waveform of 4 bit synchronous counters and draw the logic diagram with the help of truth table. (16)

Or

- (b) Write in detail about Analog to Digital converter and Full adder with necessary diagram. (16)
15. (a) Explain the principle of Amplitude and Frequency modulation. (16)

Or

- (b) Draw the block diagram of a TV transmitter and TV receiver. Explain its working in detail. (16)