Reg. No. : | | | | | | | | | | |

Question Paper Code: 41326

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2016

Second Semester

Civil Engineering

14UEE206 – BASIC ELECTRICAL AND ELECTRONICS ENGINEERING

(Common to Mechanical Engineering)

(Regulation 2014)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions.

PART A - (10 x 1 = 10 Marks)

1. Ohm's law is applicable at
   (a) 20° C (b) 37.5° C
   (c) constant temperature (d) none of these

2. The moving Iron instruments are used to measure
   (a) AC only (b) DC only
   (c) both AC and DC (d) none of these

3. A transformer
   (a) changesAC to DC (b) changes DC to AC
   (c) steps up or down DCvoltages (d) steps up or down ACvoltages

4. The brushes in the DC motor is made up of
   (a) Carbon (b) Aluminium (c) Nichrome (d) Copper

5. What cause the depletion region?
   (a) doping (b) diffusion (c) barrier potential (d)ions

6. The Zener diode used for

(a) convert AC to DC (b) convert DC to AC
(c) communication system (d)voltage regulator

7. What is the binary equivalent $(16)_{10}$

(a) $(10001)_2$ (b) $(10000)_2$ (c) $(11011)_2$ (d) $(11001)_2$

8. BJT is a

(a) unipolar device (b) bipolar device
(c) tripolar device (d) none of the above

9. The bandwidth for AM wave is

(a) fc (b) fm (c) 2fm (d) fc - fm

10. Which type of communication is known as space communication?

(a) optical (b) satellite (c) microwave (d) none of these

PART - B (5 x 2 = 10 Marks)

11. State Kirchoff's laws.

12. What are the different types of DC generator?

13. What is small signal amplifier?

14. What are shift registers?

15. Define the term modulation.

PART - C (5 x 16 = 80 Marks)

16. (a) (i) Explain the terms power and power factor in connection with AC circuits. (8)

(ii) Explain about construction and working of induction type energy meter. (8)

Or

(b) (i) Explain the construction and working principle of Electro Dynamometer type Watt meters in detail. (12)

(ii) List out the advantages of moving coil instruments over moving iron instruments. (4)

17. (a) (i) With neat sketch, explain the construction of DC generator. Also mention the type of materials used to make the parts. (10)

(ii) Mention the applications of DC motor. (6)

Or

(b) (i) Describe the construction and working principle of shaded pole single phase induction motor. (8)

(ii) Derive the EMF equation of a DC generator. (8)

18. (a) Draw and explain Zener diode shunt voltage regulator with its line and load regulations. (16)

Or

(b) (i) Compare CE, CB and CC configuration of the transistor in detail. (10)

(ii) Draw the output characteristics of CE transistor configurations and explain. (6)

19. (a) (i) Design a Full adder, construct the truth table, simplify the output equations and draw the logic diagram. (8)

(ii) Explain the operation of JK flip flop with suitable logic diagram. (8)

Or

(b) (i) Differentiate MUX and DEMUX. (4)

(ii) Examine the operation of DEMUX circuit in details. (12)

20. (a) (i) Draw the block diagram of an AM transmitter and explain its operation. (8)

(ii) Explain the operation of a FM transmitter. (8)

Or

(b) With block diagram, discuss about the satellite communication systems. Also specify its merits and demerits. (16)
