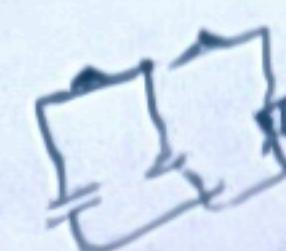


Seat No: \_\_\_\_\_

Enrollment No: \_\_\_\_\_



**PARUL UNIVERSITY**  
**FACULTY OF ENGINEERING & TECHNOLOGY**  
**B.Tech. Winter 2023 - 24 Examination**

Semester: 1

Subject Code: 303106103

Subject Name: Electrical and Electronics Engineering

Date: 17/01/2024  
Time: 2:00 pm to 4:30 pm  
Total Marks: 60

**Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

**Q.1 Objective Type Questions - ( Fill in the blanks, one word answer, MCQ-not more than Five in case of MCQ) (15)**

(All are compulsory) (Each of one mark)

1. In the CE characteristics the input resistance is given by \_\_\_\_\_  
 a)  $\Delta VCE/\Delta IB$    b)  $\Delta VBE/\Delta IB$    c)  $\Delta VBE/\Delta IC$    d)  $\Delta VBE/\Delta IE$
2. Bridge rectifier is an alternative for  
 a) Full wave rectifier   b) Peak rectifier   c) Half wave rectifier   d) None of the mentioned
3. In Parallel circuit which parameter is same?  
 (A) Current   (B) Voltage   (C) Power   (D) None
4. In Series circuit  $R_1=4\Omega$  and  $R_2=4\Omega$ . What is Req?  
 (A)  $8\Omega$    (B)  $2\Omega$    (C)  $10\Omega$    (D)  $5\Omega$
5. In the CE configuration the output resistance is given by \_\_\_\_\_  
 a)  $\Delta VCE/\Delta IB$    b)  $\Delta VBE/\Delta IB$    c)  $\Delta VBE/\Delta IC$    d)  $\Delta VCE/\Delta IC$
6. What is responsible for the current to flow?  
 a) Protons   b) Electrons   c) Nucleus   d) Protons and Electrons
7. The Form factor value of sine wave is \_\_\_\_\_.  
 1.57
8. Power Factor of Pure resistive circuit is \_\_\_\_\_ (Unity/ zero)
9. For an RC circuit, the phase angle is always \_\_\_\_\_ (Positive/Negative)
10. Two Resistance of  $10\Omega$  and  $10\Omega$  connected in parallel. What is the total resistance? 10
11. What is the input of rectifier? Ac
12. What is the unit of Apparent Power?
13. What is the unit of current? Amperes
14. What is the output of rectifier? dc
15. If voltage is  $200V$  and Resistance is  $20\Omega$ , what is the value of Current ( $I$ ) 10.

**Q.2 Answer the following questions. (Attempt any three)**

(15)

- A) Explain Positive Clipper.
- B) Explain KVL and KCL with example.
- C) Define the following. (i) Voltage (ii) Current (iii) Frequency (iv) Cycle (v) Time Period (vi) Resistor
- D) State Thevenin's Theorem and explain all steps with circuit diagram.

**Q.3 A) Explain Half-wave Rectifier with neat circuit diagram and waveform.**

(07)

- B) Explain Various Clamping methods and explain any one.

(08)

**OR**

- B) Explain R-L circuit with neat circuit diagram and waveform. Define power equation and power factor.

(08)

**Q.4 A) Derive the equation of delta to star and star to delta transformation.**

(07)

**OR**

- A) Give the comparison between sensors and transducers.

(07)

- B) Write down the steps of Norton's theorem and find the current through  $R_L = 1\text{ k}\Omega$  resistor for given circuit using Norton theorem:

