

Course No: EQUIP 2208  
Course Title: Electronics I  
Date: 12/03/2018  
No. of Questions: (4)  
Time: 1 hour  
Using Calculator (Yes)

University of Palestine



1<sup>st</sup> Midterm Exam  
2017/2018  
Total Grade: 30 Pts.

Instructor Name: \_\_\_\_\_  
Student No.: \_\_\_\_\_  
Student Name: \_\_\_\_\_  
College Name: \_\_\_\_\_  
Dep. / Specialist: \_\_\_\_\_  
Using Dictionary (No)

**Question One: (10 Pts.)**

**A) Write True (T) or False (F):**

| 1. | 2. | 3. | 4. | 5. |
|----|----|----|----|----|
|    |    |    |    |    |

1. A semiconductor is a material that has a conductivity level between a good conductor and an insulator. (    )
2. In the forward-bias region the diode current increases exponentially with increase in voltage across the diode. (    )
3. A p -type material is formed by adding acceptor atoms with five electrons to establish a high level of holes in the material. (    )
4. The diode in a parallel clipper circuit “clips” any voltage that forward biases it. (    )
5. The reverse breakdown voltage rating of the diode must be equal to the peak reverse-biasing AC voltage. (    )

**B) Given a diode current of 6 mA, at temperature ( $T=29^\circ$ ),  $n=1$ , and  $I_s=3 \text{ nA}$ , find the applied voltage  $V_D$ . ( $K=1.38 \cdot 10^{-23} \text{ J/K}$ ), ( $q=1.6 \cdot 10^{-19} \text{ C}$ )**

Course No: EQUIP 2208  
Course Title: Electronics I  
Date: 12/03/2018  
No. of Questions: (4)  
Time: 1 hour  
Using Calculator (Yes)

University of Palestine



1<sup>st</sup> Midterm Exam  
2017/2018  
Total Grade: 30 Pts.

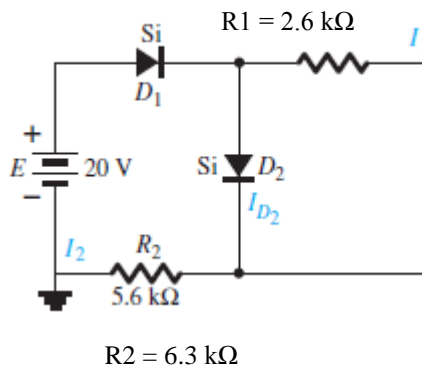
Instructor Name: \_\_\_\_\_  
Student No.: \_\_\_\_\_  
Student Name: \_\_\_\_\_  
College Name: \_\_\_\_\_  
Dep. / Specialist: \_\_\_\_\_  
Using Dictionary (No)

**Question Two:**

**(8 Pts)**

1. What is the major difference between majority and minority carriers?

2. For the circuit below, Find  $I_1$ ,  $I_2$  and  $I_{D2}$



Course No: EQUIP 2208  
Course Title: Electronics I  
Date: 12/03/2018  
No. of Questions: (4)  
Time: 1 hour  
Using Calculator (Yes)

University of Palestine



1<sup>st</sup> Midterm Exam  
2017/2018  
Total Grade: 30 Pts.

Instructor Name: \_\_\_\_\_  
Student No.: \_\_\_\_\_  
Student Name: \_\_\_\_\_  
College Name: \_\_\_\_\_  
Dep. / Specialist: \_\_\_\_\_  
Using Dictionary (No)

---

---

**Question Three:**

**(7Pts)**

*Design a power supply with input voltage 220 VAC, by using (15:1) step-down transformer passing through a full wave rectifier to get an output of 9 VDC.  
“Note/ write the name of each component used in the circuit”*

Course No: EQUIP 2208  
 Course Title: Electronics I  
 Date: 12/03/2018  
 No. of Questions: (4)  
 Time: 1 hour  
 Using Calculator (Yes)

University of Palestine



1<sup>st</sup> Midterm Exam  
 2017/2018  
 Total Grade: 30 Pts.

Instructor Name: \_\_\_\_\_  
 Student No.: \_\_\_\_\_  
 Student Name: \_\_\_\_\_  
 College Name: \_\_\_\_\_  
 Dep. / Specialist: \_\_\_\_\_  
 Using Dictionary (No)

**Question Four: (5 Pts.)**

*For each of the circuits below, find the output.*

| No. | Input | Circuit | Output |
|-----|-------|---------|--------|
| 1.  |       |         |        |
| 2.  |       |         |        |
| 3.  |       |         |        |
| 4.  |       |         |        |
| 5.  |       |         |        |

*End of Questions  
 Good Luck*