

DIPLOMA OF VOCATION
Industrial Electronics
Subject: Basics of Electronics Engineering
Subject Code: ECE-301
Semester: First
January 2021
Theory (External): 35 Marks
Time: 03 Hours

Instructions to the Students

1. This Question paper consists of two Sections. All sections are compulsory.
2. Section A comprises 10 questions of objective type in nature. All questions are compulsory. Each question carries 1 mark.
3. Section B comprises 8 essay type questions out of which students need to do any 5. Each question carries 5 marks.
4. Read the questions carefully and write the answers in the answer sheets provided.
5. Do not write anything on the question paper.
6. Wherever necessary, the diagram drawn should be neat and properly labelled

Roll Number									

SECTION –A (SHORT/OBJECTIVE TYPE QUESTIONS)
(10x1=10 Marks)

- A. What will happen to the number of electrons in the conduction band of a semiconductor as the temperature of the material is increased.
- B. Explain in brief about dielectric.
- C. What are the important specifications of diode?
- D. Name the different passive components
- E. Explain main difference between ideal and practical current source.
- F. Why we mostly prefer Silicon over Germanium?
- G. What is photodiode.
- H. What are the majority current carriers in an N –type semiconductor?
- I. In what respect is an LED different from an ordinary PN junction diode.
- J. Write down the applications of SMPS.

SECTION -B (ESSAY TYPE QUESTIONS)
(5x5=25 Marks)

1. (a) Draw the symbolic representation of practical AC voltage source
Explain the necessity of including an impedance in the representation.
(b) A DC voltage source having an open circuit voltage of 2V and an internal impedance of 1Ω . Obtain its equivalent current source representation.
2. (a) Discuss energy-mass relationship.
(b) Explain the working of a choke input filter.
3. (a) Explain the forward and reverse characteristics of PN junction diode.
(b) Write a short note on Zener Diode?
4. Explain why is it necessary to use a voltage regulator circuit in a power supply.
5. Explain working of half wave rectifier with its circuit diagram
6. Describe the working and Circuit Diagram of inverter.
7. Explain construction, working and applications of SMPS.
8. A zener diode is specified as having a breakdown voltage of 9.1V, with a maximum power dissipation of 364 mW. What is the maximum current the diode can handle?

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