

## CERTIFICATE COURSE 2021-22

Department Conducts a Certificate course on “**BASIC ELECTRONICS TRAINING**”. The Duration of the Course is 30 hours. This course will provide the students an idea of basic idea of electronic components and their uses and applications.

### CERTIFICATE COURSE IN BASIC ELECTRONICS TRAINING

#### SYLLABUS

##### **Module 1: Electronics & Electrical Components Identification**

Vaccum tubes – Resistors- Capacitors- Batteries- switches-Diodes – Transistors – Integrated chips – Bread board – voltage supplies- multimeters

##### **Module 2: Uses of Electronics components for basics electronic devices**

Use of resistors and capacitors in a circuit- charging and discharging of capacitors- Uses of transistors transistor connections- Uses of diodes- filter circuits- Zener diodes- voltage regulators

##### **Module 3: Cathode Ray Oscilloscope operations**

Identification of CRO knobs- Testing of CRO and PROBES- Measurements using CRO- Familiarisation of Function Generators- Operation of Function Generator

##### **Module 4: Skill Development**

Soldering of electronic components – full wave & bridge rectifiers – powerpack – manufacturing of LED bulbs

##### **Books For Reference**

- 1. Basic Electrical Engineering – V.K Mehta & Rohit Mehta (2006) – S.Chand publishers**
- 2. Electrical Technology – Volume I – B.L.Tereja S.Chand publishers**
- 3. Malvino Electronic Principles (1998) sixth edition – Albert Paul Malvino – Tata Mcgraw Hills publishers**

ANDHRA CHRISTIAN COLLEGE GUNTUR  
DEPARTMENT OF PHYSICS

Academic year 2021-22

Topic - BASIC ELECTRONICS TRAINING

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10<sup>th</sup> B.Sc

17  
20  
MAX Marks: 20M  
Time: 1 Hour

1 A half wave rectifier has a 200 V rms. source and the step-down transformer has a turns ratio of 4 : 1. What will be the peak voltage across the load ignoring the drop across the diode (a)

- a. 70.7v
- b. 40 v
- c. 100 v
- d. 50 v

✓

2. If a silicon diode is operating in forward bias in a circuit with 12 V supply and 240  $\Omega$  resistor, then what will be the voltage drop across the diode? (e)

- a. 1.5 V
- b. 6 V
- c. 12 V
- d. 0.3 V
- e. 0.7 V

✓

3. Which of the following is a trivalent doping element? (c)

- a. Arsenic
- b. Antimony
- c. Boron
- d. Phosphorous

✓

4. A half wave rectifier has a 200 V rms. source and the step-down transformer has a turns ratio of 4 : 1. What will be the peak voltage across the load ignoring the drop across the diode? (a)

- a. 70.7 V
- b. 40 V
- c. 100 V
- d. 50 V

✓

5. What will be the power dissipation across a silicon diode carrying a current of 50 mA? (c)

- a. 25 mW
- b. 50 W
- c. 35 mW
- d. 100 mW

✓

6. Which among the following is a current controlled device? (d)

X

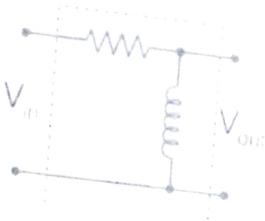
- a. MOSFET
- b. BJT
- c. IGBT
- d. JFET

7. When a PN junction is forward biased

- a. Depletion region decreases
- b. Minority carriers are not affected
- c. Holes and electrons move away from junction
- d. All of above

✓ (a)

8. Identify the filter name given the circuit? ( )



✓ (c)

- a. High pass
- b. Band Pass
- c. Low pass
- d. Bandstop

9. For normal operation of NPN transistor:

- a. Emitter Base Junction must be reverse biased and Base-collector junction must be forward biased
- b. Emitter Base Junction must be reverse biased and Base-collector junction must be reverse biased
- c. Emitter Base Junction must be forward biased and Base-collector junction must be forward biased
- d. Emitter-Base Junction must be forward biased and Base-collector junction must be reverse biased

~~(a)~~

10. A buck converter is used to:

- a. Exactly double the voltage
- b. Stabilize the voltage
- c. Step up the voltage
- d. Step down the voltage

✓ (d)

11. Which of the following is the simplest and cheapest filter circuit in electronics?

X (d)

- a. Series Inductor Filter
- b. Choke Input LC Filter
- c. Capacitor Input Filter
- d. RC Filter

12. PIV of a diode indicates

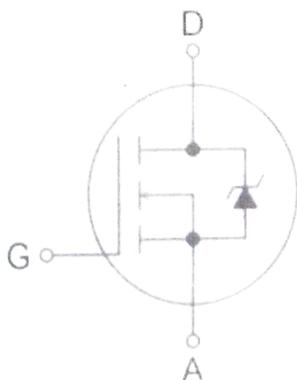
(b)

- a. Peak Instantaneous Voltage
- b. Peak Inverse Voltage
- c. Peak Inverse value
- d. PIV do not apply to diodes

~~(d)~~

13. The diagram given below represents the standard symbol of which of the following components?

(d)



- a. BJT
- b. p-Channel MOSFET
- c. IGBT
- d. n-Channel MOSFET

14. What is the advantage of online UPS over offline UPS?

(c)

- a. Online UPS provides stable output frequency
- b. Online UPS supplies stable power output
- c. Online UPS is free from variation and transition problems
- d. Online UPS works on single-phase or 3-phase supply

15. A transistor (BJT) works as a variable resistance when?

- a. Emitter junction is forward biased and collector junction is reverse biased
- b. Emitter junction is reverse biased and collector junction is forward biased
- c. Emitter junction junction is reverse biased and collector junction is reverse biased
- d. Emitter junction is forward biased and collector junction is forward biased

(a)

16. What is the purpose of a transistor in electronic circuits?

- a. To regulate voltage
- b. To store data
- c. To filter noise
- d. To amplify or switch electronic signals

(d)

17. Which type of semiconductor device acts as a one-way valve for electric current?

- a. Diode
- b. Inductor
- c. Transistor
- d. Capacitor

(a)

18. What is the purpose of a transistor in electronic circuits?

- a. To filter noise
- b. To amplify or switch electronic signals
- c. To regulate voltage
- d. To store data

(b)

19. The fixed resistors restrict the flow of current up to what level?

- a. Variable range
- b. Any range
- c. Certain level
- d. Infinite level

(c)

20. Capacitance can be defined as the ratio of the electric charge on each conductor to what between them?

- a. Potential difference
- b. Electric difference
- c. Potential energy
- d. Voltage difference

(a)