23104801

QP CODE: 23104801

Reg No : .....

Name : .....

B.Sc DEGREE (CBCS) REGULAR/IMPROVEMENT/REAPPEARANCE EXAMINATIONS, FEBRUARY 2023

First Semester

B.Sc Physics Model I

Complementary Course - EL1CMT01 - ELECTRONICS - BASIC ELECTRONICS

2017 Admission Onwards

4D453F57

Time: 3 Hours Max. Marks : 60

Part A

*Answer any **ten** questions.*

*Each question carries **1** mark.*

1. What is Junction rule?
2. Draw the ideal model equivalent circuit of Diode.
3. Draw the circuit of Half wave rectifier.
4. Mention any two disadvantages of Centre tapped Full wave rectifier.
5. Mention any two advantages of Bridge Full wave rectifier.
6. Compare Centre tapped Full wave rectifier and bridge full wave rectifier.
7. Draw the characterisitics of photo diode.
8. Define output resistance of Commom Emitter Configuration.
9. Define current amplification factor in Common Collector configuration.
10. Mention any two advantages of base resistor biasing method.
11. Draw the circuit of biased series negative clipper.
12. Mention any two applications of differentiating circuit.

(10×1=10)

Part B

*Answer any **six** questions.*

*Each question carries **5** marks.*

13. A generator develops 200V and has an internal resistance of 100Ω. Find the power delivered to a load of (i) 100 Ω and (ii) 300Ω

14. Define semiconductors in basis of energy band and explain the effect of temperature on semiconductors?

15. Explain forward biasing and reverse biasing of PN junction.

16. Differentiate Avalanche and Zener breakdown.

17. Explain the working of Schottky diode.

18. Explain the Common Base configuration and describe the expression for current amplification factor.

19. Explain the transistor dc load line and Q point.

20. Explain the requirements of transistor biasing and the factors contributing thermal stability of BJT.

21. Draw and explain the working of biased positive clamper with input and output waveforms.

(6×5=30)

Part C

*Answer any **two** questions.*

*Each question carries **10** marks.*

22. Explain (a) N type semiconductors (b) P type semiconductors

23. Explain the working principle of Tunnel diode. Also draw the Tunnel diode equivalent circuit.

24. Explain the working and construction details of NPN transistor and PNP transistor.

25. Explain in detail the working of voltage multiplier circuit.

(2×10=20)