

BASIC ELECTRONICS

2nd ECE/ ETV/EMP/COMP/CSE/IT/EEE/ECE(IT)/0664/2661/May,2015

Duration:3Hr

M. Marks:

75 Section - A

Q.1. Attempt any ten parts:
15)

(1.5 x10=

- (a) Resistivity of a semiconductors lies _____conductors and insulators.
- (b) While forming *pn* junction, the diffusion is restricted by _____.
- (c) An ideal diode has _____forward resistance.
- (d) Under normal operating voltage, the reverse current in a silicon diode is about in _____.
- (e) A zener diode is always operated in the _____region.
- (f) The three terminals of transistors are _____, base and _____.
- (g) A transistor is usually applied for _____.
- (h) The best biasing is achieved by adopting _____biasing circuit.
- (i) For a good voltage amplifier, its input impedance should be _____as compared to the source impedance.
- (j) A FET is also called as _____polar transistor.
- (k) The turn- on voltage for Silicon diode is _____.
- (l) Filter circuits are used to reduce _____.
- (m) PIV stands for _____.

Section – B

Q.2. Attempt any Six Questions:
5=30)

(6x

- (i) Explain Reverse Biasing of *PN* Junction.
- (ii) Write a note on varactor diode. Give its applications.
- (iii) Compare the forward volt-ampere characteristics of a Germanium and a silicon Diode with help of diagram.
- (iv) How transistor is used as an amplifier?
- (v) Explain why transistor should be biased.
- (vi) A bypass capacitor is connected C_E is connected across the emitter resistor R_E , why?
- (vii) Explain the working principle of a FET.
- (viii) Explain working of Capacitor- Input π Filter.

Section C

Note: Attempt any two

(2x 15=30)

Q. 3. With the help of circuit diagram explain the working of Full Wave Bridge Type Rectifier. Also prove the efficiency is 81.2%.

Q. 4. Explain the input and output characteristics of CE Configuration? Also derive the relation between α and β .

Q. 5. Write a note on

- (i) N-type Semiconductor
- (ii) Voltage Divider Biasing Circuit
- (iii) Drift and Diffusion Current

Q. 6. Explain Conductors, Insulators and Semiconductors on the basis their energy band diagrams.

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