(2) Figure on the right indicates full marks.

(3) All symbols and abbreviations have their usual meaning.

(4) Non-programmable calculators are allowed.

(5) Assume data if necessary.

1 Answer in short: 8

(a) What is covalent bond?

(b) Define: Q-point.

(c) What is barrier potential?

(d) What is donor level?

2 (a) Discuss the energy band structure of diode and discuss the forward and reverse bias characteristics of diode. 10

(b) Explain: Peak Inverse Voltage 4

OR

2 (a) What is semiconductor? Distinguish between intrinsic and extrinsic semiconductor. 10

(b) Explain in brief Minority carriers. 4
3  (a) Give full form of MOSFET. Discuss the construction and working of MOSFET.  
(b) Advantages of a FET over a BJT  

OR

3  (a) Draw and explain common base input and output characteristics of transistor.  
(b) Applications of BJT  

4  Write short note on: (Any TWO)  
(a) P-type semiconductor  
(b) Photo- transistor  
(c) Avalanche breakdown  
(d) Applications of LED.