

**ELECTRONIC**

- 1. A
- 2. A
- 3. C
- 4. A
- 5. A
- 6.

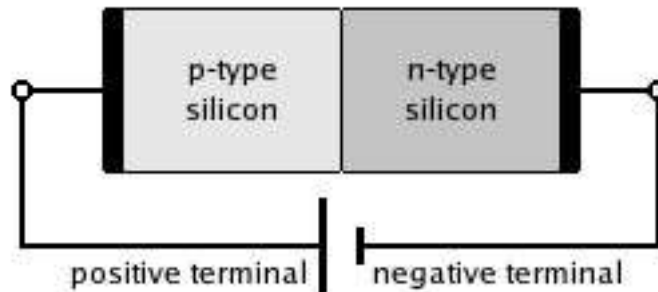
- doping tetravalent element with trivalent element; P1
- During the bonding there is a deficit of electron - hole P1

7.

- (a) supply connected correctly (to left & right) B1  
load connected correctly (to top & bottom) B1 [2]
- (b) e.g. power supplied on every half-cycle  
greater average/mean power  
(any sensible suggestion, 1 mark) B1 [1]
- (c) (i) reduction in the variation of the output voltage/current B1 [1]  
(ii) larger capacitance produces more smoothing M1  
either product RC larger  
or for the same load A1 [2]

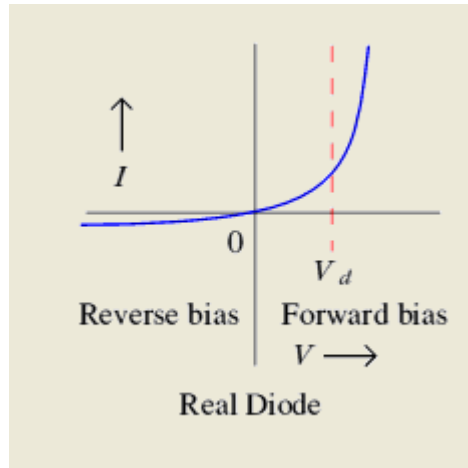
8.

(a)



P and N portions shown [1m]  
Positive terminal to p-type [1m]

(b)



Axes labeled [1m]  
Reverse characteristics [1m]  
Forward characteristics [1m]

[Total 5m]

9.

(a) Intrinsic - these are pure semiconductor materials [1m]

Extrinsic- these are semi-conductors into which impurities have been added [1m]

(b) The process of adding certain elements (impurities) to enhance conductivity [1m]

(c) Antimony, arsenic or phosphorous [1m]

[Total 3m]