

Physics

Section I – Part B (continued)

Marks

Question 24 (8 marks)

In terms of band structures and relative electrical resistance, describe the differences between a conductor, an insulator and a semiconductor.

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Conductor :- Has a relatively very low resistance. The gap between the conduction band and valency band is very small to non-existent.

~~Insulator~~ Insulator :- Has a very high resistance relative to the others. The gap is very large between the conduction band and the valency bands making it hard for the electrons to pass between the two.

Semiconductor :- Has a resistance which is low and a gap between the conduction band and valency band that is smaller than an insulator but larger than a conductor.