

Molecules

Mark scheme

1. (a) covalent/description of covalent 1
for 1 mark
- (b) forces/bonds between the molecules/particles (not atoms) are weak 2
for 1 mark each
- (c) non-flammable so it will not burn etc. 3
extremely unreactive so it will not react with materials in the transformer,
does not conduct electricity so it can insulate the transformer
gas so it has freedom to move and insulate whole area
for 1 mark each
- [6]**
2. (a) (i) idea that 2
- two hydrogen atoms share one pair of electrons
 - linked by a covalent bond
 - each then has two outer electrons / a full outer shell / two
 - electrons in the highest (occupied) energy level
- (2 marks may be awarded for a correct electron diagram i.e. with electrons on boundary of or within marked area).
any two for 1 mark each*
- (ii) idea that 2
- helium atoms do not give / take / share electrons / react
 - because the (outer) shell / orbit is full
- or**
- highest (occupied) energy level is full
- (but not just "contains two electrons")
for 1 mark each*
- (b) idea that 2
- the (attractive) forces between molecules are weak
- (not bonds between atoms)*
- so little energy is required / it is easy for molecules to escape from the liquid*
/ escape from other molecules*
- (allow evaporate / change into a gas)
for 1 mark each*
- [6]**