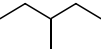


Question 7 (Answer: **D**)

- Oxygen is far more electronegative than sulfur, so the O–H bond is strongly polar.
- That allows hydrogen bonding between water molecules – much stronger than the forces in H₂S.
- Boiling point is set by the *intermolecular* forces, not by the strength of the bonds inside the molecule.

3(a)	M1 (family of molecules / compounds / series with) same general formula OR (family of molecules where) molecular formula differs (only) by (units of) CH _{2(n)} . M2 similar chemical properties / reactions
3(b)	M1 strong C–H (bonds) M2 non-polar (C–H / molecule / bonds)
3(c)	cracking
3(d)(i)	M1  M2 
3(d)(ii)	M1 B < A < hexane. M2 hexane / unbranched has stronger / more IMFs M3 hexane / unbranched requires most / more energy
3(e)(i)	H ₂ ((g)) OR hydrogen (gas)
3(e)(ii)	M1 +215 + (–156) – (+48) = M2 +11 kJ mol ^{–1}
3(e)(iii)	C ₆ H ₁₄ + 9½O ₂ → 6CO ₂ + 7H ₂ O