**M1.** (a) Electrophile: e- pair / lone pair acceptor or e- deficient species or e-seeking species (1)

For 'species' accept atom, molecule, ion NOT '+' ion NOT 'attracted to '-' charge'

Addition: reaction which increases number of substituents or convert double bond to single bond or where two molecules form one molecule (1)

(b) (High) e<sup>-</sup> dense or e<sup>-</sup> rich C=C or e<sup>-</sup> rich  $\pi$  bond or 4 e<sup>-</sup> between the C's (1) NOT just 'C=C'

causes induced dipole in Br<sub>2</sub> (1)

Ignore refs to 'temporary' can score M2 from  $\delta^{+}$  /  $\delta^{-}$  on  $Br_{2}$  in (c) unless a contradicting error in (b)

(c) Mechanism:

If incorrect alkene, lose M3 (wrong cation)
Mark M4 conseq on M3
If M1 curly
arrow C = C

arrow C TC

Name of product: 1,2-dibromopropane (1)

(d) addition (1)

Not additional

[10]

2

2

5

M3.C
[1]
M4.C
[1]

[1]