

## Mark schemes

**Q1.**

B

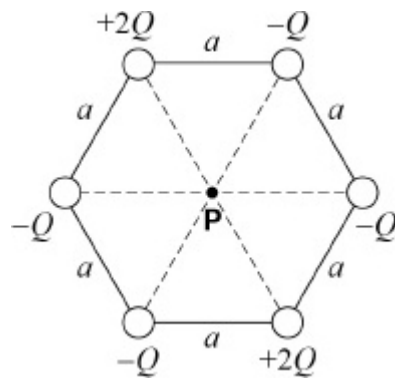
*the charge stored on a capacitor consisting of two parallel plates of area  $1 \text{ m}^2$  separated by  $1 \text{ m}$  when the potential difference between the plates is  $1 \text{ V}$*

**[1]****Q2.**

A

 $16F$ **[1]****Q3.**

D

**[1]****Q4.**

B

 $1.38 \times 10^{-7} \text{ V m}^{-1}$  downwards**[1]****Q5.**

A

*an electron and a positive pion*

**[1]****Q6.**

C

 $10^{36}$ **[1]**

**Q7.**

C

$$\frac{2Q}{\pi\epsilon_0 d^2}$$

[1]

**Q8.**

A

$$20\ \mu\text{N}$$

[1]

**Q9.**

A

*vertically down the plane.*

[1]

**Q10.**

C

*the electric potential of the sphere.*

[1]

**Q11.**

C

$$4.0 \times 10^{-14}\ \text{m}$$

[1]

**Q12.**

B

[1]

**Q13.**

A

[1]