1. June/2022/Paper_11/No.18
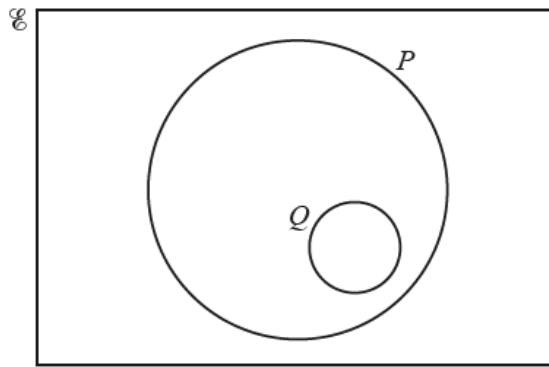
(a) In the Venn diagram, shade the region represented by $P \cap Q'$.

[1]

(b) A club has 32 members.
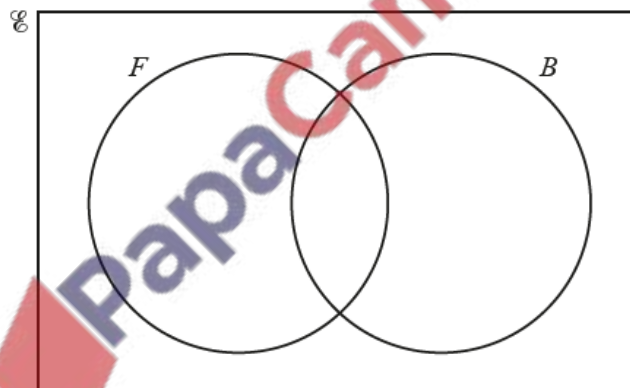14 of the members are female and 18 of the members are male.
5 of the females have black hair.
6 of the males have black hair.

$\mathcal{E}$ = {members of the club}
F = {females}
B = {members with black hair}

Complete the Venn diagram to show this information. [2]

2.

(a) $\mathscr{E} = \{a, b, c, d, e, f, g, h, i, j\}$
$P = \{a, e, i\}$
$Q = \{f, g, h, i, j\}$
$R = \{c, d, e, f, g\}$

    (i) Find $P \cup Q$.
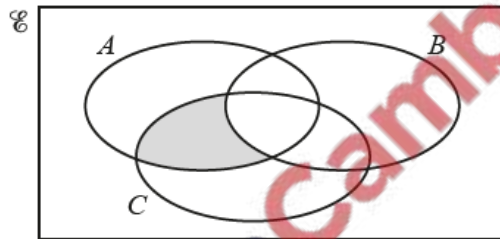
        .... [1]

    (ii) Find $n(P' \cap (Q \cup R))$.

        .... [1]

(b)

Use set notation to describe the shaded subset in the Venn diagram.

        .... [1]