2010 Electrotechnology

## Question 12

Three $30 \mu \mathrm{~F}$ capacitors are connected in series.
What is the total capacitance?

A $\quad 10 \mu \mathrm{~F}$
B $\times 30 \mu \mathrm{~F}$
C $\times 60 \mu \mathrm{~F}$
D $\times 90 \mu \mathrm{~F}$

HSC Statistics on this Question:


Band 1/2 Band 2/3 Band 3/4 Band 4/5 Band 5/6

| A 0\% | $15 \%$ | $10 \%$ | $64 \%$ | $75 \%$ |
| :--- | :--- | :--- | :--- | :--- |
| B 50\% | $8 \%$ | $0 \%$ | $14 \%$ | $12 \%$ |
| C 0\% | $15 \%$ | $0 \%$ | $0 \%$ | $12 \%$ |
| D 50\% | $62 \%$ | $90 \%$ | $21 \%$ | $0 \%$ |
| N 0\% | $0 \%$ | $0 \%$ | $0 \%$ | $0 \%$ |

The table and graph show, for the groups of students whose marks in the examination corresponded to the borderline between two bands, what percentages of each group selected the responses $A, B, C$ and $D . N$ is used to identify: No valid response.

Note that apparent anomalies in the table and graph, such as $0 \%$ or $100 \%$ of students choosing a particular response, can occur when there are no students (or very few students) who scored the particular
examination mark associated with that borderline.

