In preparation for the examination candidates should attempt the following practical tasks by writing and testing a program(s).

The headteacher of a school needs a program to record and count the votes for a class captain. Each student in the class will be allowed one vote. There can be up to 30 students in a class.

Write and test a program for the headteacher.

- Your program must include appropriate prompts for the entry of data.
- Error messages and other output need to be set out clearly.
- All variables, constants and other identifiers must have meaningful names.

You will need to complete these three tasks. Each task must be fully tested.

TASK 1 – Set up the voting

Each class can choose from up to four different students as candidates for their class captain. Set up a routine that allows:

- between two and four different candidate names to be input and stored
- the candidate names to be displayed with a number (1, 2, 3 or 4) beside each name
- a choice of 1, 2, 3 or 4 to be entered to record a vote; all other entries are rejected
- up to four totals set to zero ready to record the votes
- a maximum of 30 votes to be cast

TASK 2 – Record and count each vote

Input a number 1, 2, 3 or 4; add 1 to the appropriate total.

Output the name of the candidate voted for or output ‘invalid vote’ if a vote is rejected.

TASK 3 – Show the result

When all the votes have been cast, display the candidates’ names with their totals in descending order of totals. If there is a clear winner, display the candidate’s name with the words ‘NEW CLASS CAPTAIN’ beside it; otherwise display ‘NO OVERALL WINNER’.