



TONBRIDGE SCHOOL

Sample Paper for Entrance into Year 12

Computer Science

Name:

School:

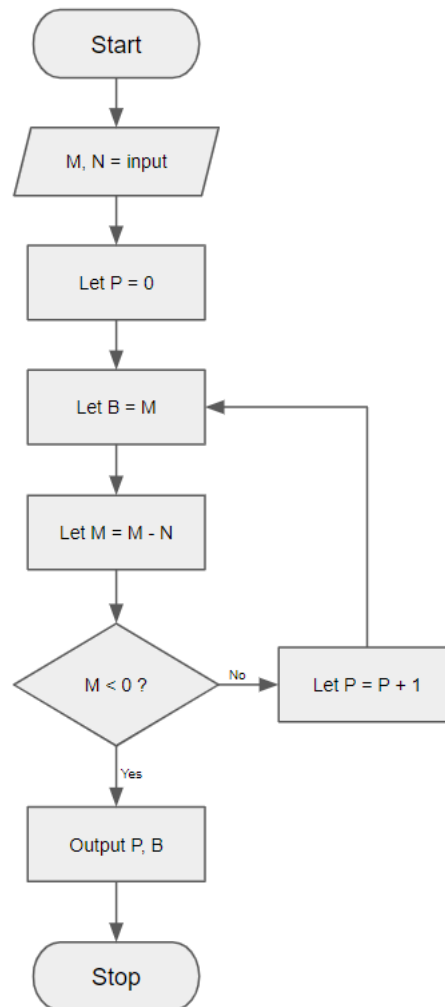
Time allowed : 45 min

Total Marks : 30

Answer all FIVE questions in the spaces provided on the question paper

- No calculators are allowed.

1. Consider the following algorithm, represented as a flowchart.



Write a short paragraph explaining what the algorithm does. Be careful to explain clearly what the values M, N, P and B represent. How does the output relate to the input? [6 marks]

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2. Imagine you have a pen and paper, and a calculator that can only do division. Explain how you could use these to calculate the first 1000 primes. [6 marks]

3. Approximately how many litres of water are there in a swimming pool? State all your assumptions. [6 marks]

4. A 12-hour digital clock reads H:M, where H is hours and M is minutes. Using mathematical expressions involving H and M, explain how you could calculate the angle ($\leq 180^\circ$) between the hands of an analogue clock showing the same time. [8 marks]

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5. Adam has Covid-19. Chen does not have Covid-19. Adam is standing too close to Britt. Britt is standing too close to Chen.

Which one of the following statements is correct?

- A. It is certainly **true** that that someone with Covid-19 is standing too close to someone without Covid-19.
- B. It is certainly **not true** that that someone with Covid-19 is standing too close to someone without Covid-19.
- C. It **cannot be determined** whether someone with Covid-19 is standing too close to someone without Covid-19.

Explain. [4 marks]

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