

Computer science
Standard level
Paper 1

Wednesday 4 May 2016 (afternoon)

1 hour 30 minutes

Instructions to candidates

- Do not open this examination paper until instructed to do so.
- Section A: answer all questions.
- Section B: answer all questions.
- The maximum mark for this examination paper is **[70 marks]**.

Section A

Answer **all** questions.

1. Outline **one** problem of maintaining legacy systems. [2]
2. Explain what is meant by user acceptance testing. [2]
3. Discuss **one** advantage and **one** disadvantage of printed material, when compared to online support, as a method to provide user documentation. [4]
4. Outline the use of a failover system. [2]
5. Describe the function of the control unit (CU) in the central processing unit (CPU). [2]
6. Describe how the cache memory can speed up the functioning of a processor. [2]
7. Outline **one** feature of the operating system that needs to be considered when running a game application. [2]
8. Construct the truth table for the following expression.
$$A \text{ XOR } (B \text{ OR } C)$$
 [3]
9. In an 8-bit register, state the binary representation of the hexadecimal number 3B. [2]

10. Trace the following fragment, for $N=139$ and $L=3$, by **copying** and completing the trace table given below.

```

D = N div L
Z = 1
B = false

loop while Z<L
    D = D div L
    Z = Z+1
    B = NOT B
end loop
if (D ≠ 0 AND B) then
    output(D, B)
else
    output(Z, NOT B)
end if
    
```

D	Z	B	Z<L ?	output
...

[4]

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