
International Baccalaureate®
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**COMPUTER SCIENCE**
**HIGHER LEVEL**
**PAPER 3**

Monday 19 May 2014 (afternoon)

1 hour

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INSTRUCTIONS TO CANDIDATES

- Do not turn over this examination paper until instructed to do so.
- Answer all questions.
- The maximum mark for this examination paper is *[30 marks]*.

*Answer **all** questions.*

**1.** Outline the meaning of the following terms:

(a) *threat landscape* *[2 marks]*

(b) *whitelisting*. *[2 marks]*

**2.** (a) Traditionally, security systems concentrated on the inspection of traffic entering a network. By making reference to specific malware, explain why Intrusion Prevention Systems (IPS) should scan for traffic **leaving** a network. *[4 marks]*

(b) Denial of Service (DoS) attacks are designed to overload a system, making it cease to function as normal.

By looking at **one** particular type of DoS attack listed on page 4 of the Case Study, explain **both** how the attack is designed to interrupt the operation of a company network **and** the measure(s) that the company should take to counteract such attacks. *[4 marks]*

**3.** The SSL protocol has been incorporated into the transfer of data across networks in order to provide an additional layer of security. Explain how it is possible for man-in-the-middle attacks to successfully intercept data sent using this protocol. *[6 marks]*

**4.** The chief executives of the pharmaceutical company, Western Heights, decided to follow the lead of many major enterprises in embracing a *Bring Your Own Device* (BYOD) policy with its workforce. This decision was taken after lengthy meetings with its security officers, many of whom expressed doubts about the wisdom of such a policy.

By including reference to the rationale behind this decision, discuss **both** the security concerns that would have been expressed by the security officers **and** the measures that should now be taken in order to ensure the safety of the company's data taking into account this new policy. *[12 marks]*