UNIVERSITY OF BOLTON

CREATIVE TECHNOLOGIES

COMPUTER NETWORKS AND SECURITY

SEMESTER TWO EXAMINATIONS 2018/2019

ENTERPRISE INFRASTRUCTURE

MODULE NO: SEC5005

Date: Wednesday 22nd May 2019   Time: 10:00 – 12:00

INSTRUCTIONS TO CANDIDATES: There are **SIX** questions.

Answer **ANY FOUR** questions.

All questions carry equal marks.

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Computer Networks and Security
Semester Two Examination 2018/19
Enterprise Infrastructure
Module No. SEC5005

Question 1

1a.   Explain what is meant by the term "Patch Tuesday"

(3 marks)

The 2017 WannaCry attack infected roughly 200,000 unpatched
Windows computers around the world exploiting a vulnerability that had
been patched two months earlier.

1b.   How does the WannaCry example justify administrators patching
systems as soon as possible?

(6 marks)

1c.   Why might an administrator delay installing a software patch?

(6 marks)

1d.   Based on your answers to questions 1b and 1c how can an
administrator make use of the tools in Windows Server to manage
software updates in a managed network?

(10 marks)

Question 2

2a.   Windows Server features role-based configuration. Give examples of
three roles that a server can be configured to perform and briefly
explain each of them.

(6 marks)

2b.   What are the benefits of moving to a command-line interface for
Windows Server making use of Powershell?

(6 marks)

2c.   Using examples explain how Powershell cmdlets can provide powerful
tools for system administration.

(6 marks)

2d.   How can Powershell scripts provide powerful and useful functionality to
administer users, computers and other objects in a Windows network.

(7 marks)

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Question 3

3a.   In the context of Active Directory, explain the difference between an organisational unit and a group.

(5 marks)

3b.   Active Directory allows the construction of complex hierarchies which can reflect the exact structure of an organisation. Speculate why the University of Bolton has opted to go for a simplified structure where users are grouped as either Staff or Students.

(10 marks)

3c.   Explain the terms "Forest", "Tree" and "Domain" in the context of Active Directory.

(6 marks)

3d.   What is meant by the following URL:
LDAP://ou=crt,ou=schools,dc=bolton,dc=com
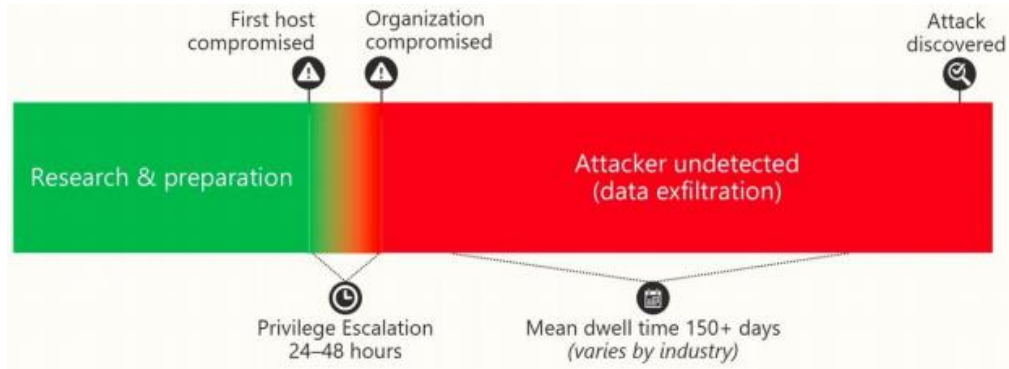
(4 marks)

Question 4

4a.   Using examples explain how a group policy object can control the behaviour of users of computers on a windows network.

(10 marks)

4b.   Explain the <u>precedence</u> rules for applying group policies to objects within a managed network. You should include the rules for Filters, Blocking and Enforcing in your answer.

(10 marks)

4c.   What is the difference between User policies and Computer policies in terms of the order they are applied.

(5 marks)

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Question 5

5a.   Examine the following diagram:

In the diagram above, what is meant by the term "Privilege Escallation" and how does it play a part in attacking a Windows network?

(5 marks)

5b.   Microsoft describe the first stage of their security advice for Windows Server as "Building a secure foundation". What is meant by this phrase and what specific steps are recommended to build a secure foundation?

(10 marks)

5c.   Explain how Just Enough Admin (JEA) and Just In Time (JIT) admin can be used in a Windows network to keep systems secure.

(10 marks)

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Question 6

6a.   "A Windows installation image is analogous to an IKEA flatpack." Do you agree with this statement? Give reasons for your answer.

(5 marks)

6b.   Identify and describe five elements which are incorporated into a Windows installation image.

(10 marks)

6c.   Explain why it may be useful to build a Reference Installation before creating an installation image.

(5 marks)

6d.   How would you manage the process of deploying Windows images on a network where different types of Windows desktop computer are in use?

(5 marks)

END OF QUESTIONS