



Prifysgol Cymru
Y Drindod Dewi Sant
University of Wales
Trinity Saint David

LOCATION: LONDON

LLEOLIAD:

LEVEL 6

LEFEL 6

EXAMINATION PERIOD

JANUARY 2018

CYFNOD ARHOLIADAU

2018

MODULE CODE: ACUA6001_LON
DATA CENTRE VIRTUALISATION

TIME: 2 HOURS

ANSWER THREE QUESTIONS OUT OF FOUR

Equipment or materials required – None

Adnoddau neu ddefnyddiau sydd eu hangen - Dim

The following case study is provided to the students in advance of the examination:

SWANSEA DATA LTD IS AN ORGANISATION THAT HAS 3 PHYSICAL DATA CENTRES OFFERING A SINGLE RELIABLE DATA CENTRE USING VIRTUALISED TECHNOLOGY TO PROVIDE A VIRTUALISED DATA CENTRE. THE DATA CENTRE OFFERS CLOUD STORAGE AND VIRTUALISED SERVICES FOR FEE PAYING CUSTOMERS. SWANSEA DATA'S PHYSICAL LOCATIONS ARE CONNECTED BY FIBRE HIGH-BANDWIDTH BROADBAND CONNECTIONS AND THEY MIRROR EACH OTHER'S DATA STORAGE FOR RESILIENCY. THE ORGANISATION PROVIDES SECURE, SAFE STORAGE AND SERVICES TO ITS CUSTOMERS AT A PREMIUM PRICE. FOR THIS TO HAPPEN THE SECURITY, HARDWARE SERVERS AND STORAGE SYSTEMS HAVE BEEN CAREFULLY DESIGNED. WITH YOUR UNDERSTANDING OF VIRTUALISATION TECHNOLOGY AND DATA CENTRE INFRASTRUCTURE MANAGEMENT, PREPARE 1 PAGE OF HAND WRITTEN NOTES ABOUT THE FOLLOWING TOPICS:

STORAGE AREA NETWORKS (SAN)

SECURITY, RELIABILITY (INCLUDING POWER SUPPLIES) AND
ANALYSIS

VIRTUALISATION AND CISCO NEXUS DEVICES

BARE METAL HYPERVISORS AND VIRTUAL MACHINES

ANSWER THREE QUESTIONS OUT OF FOUR

1.

- a. Server virtualisation comprises several components working in synergy to deliver a holistic solution. With reference to that explain the following:
- i. Type-1 Hypervisor **[5 marks]**
 - ii. Type-2 Hypervisor **[5 marks]**
 - iii. Virtual switching **[5 marks]**
 - iv. Virtual machines **[5 marks]**
 - v. Virtual hosting **[5 marks]**

2.

- a. Describe the advantages of virtualisation.
[14 marks]
- b. Explain the following terms:
- i. SaaS
 - ii. PaaS
 - iii. IaaS
- [6 marks]**
- c. Briefly describe a commercial server infrastructure product commonly used for virtualisation?
[5 marks]

3.

- a. Explain what is a Storage-Area Network (SAN).
[4 marks]
- b. Explain the concepts of infrastructure simplification, information lifecycle management, and business continuity in a Storage-area network (SAN).
[15 marks]
- c. Explain how a SAN protects data from corruption.
[6 marks]

4.

- a. Describe the importance of security policy and how it influences all the organisational design?
[10 marks]
- b. Explain the disaster recovery systems that are important to a virtualised data centre.
[15 marks]

Diwedd/End