

# **Tutorial Letter 205/2/2018**

## **Computer Networks COS2626**

### **Semester 2**

### **School of Computing**

This tutorial letter contains the solution to Assignment 05 for semester 2

BARCODE

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## 1 INTRODUCTION

Dear Student,

This tutorial letter, designated COS2626/**205**/2/2018, contains the solution to Assignment 05 for Semester 2.

You should have at this stage received the following study material:

- COS2626/**101**/3/2018 (Start-up letter - Available under Official Study Material on *myUNISA*)
- COS2626/**201**/2/2018 (Solution to Assignment 01 - Available under Additional Resources on *myUNISA*)
- COS2626/**202**/2/2018 (Solution to Assignment 02 - Available under Additional Resources on *myUNISA*)
- Assignment 03 does not contain a solution as this was a community engagement project.
- COS2626/**204**/2/2018 (Solution to Assignment 04 - Available under Additional Resources on *myUNISA*)
- COS2626/**205**/2/2018 (Solution to Assignment 05 - Available under Additional Resources on *myUNISA*)

**BEST WISHES THE EXAMINATION  
THE LECTURERS  
COS2626**

## 2 SOLUTION TO ASSIGNMENT 05: SEMESTER 2

Cloud Computing and Remote Access
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### Question 1

From the list below, HOW MANY are distinguishing features of cloud computing?

- On-demand service
- Elastic services and storage
- Support for multiple platforms
- Resource pooling and consolidation
- Metered service

1. 2
2. 3
3. 4
4. **5**

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### Question 2

Organizations with common interests, such as regulatory requirements, performance requirements, or data access, might share resources in a \_\_\_\_\_.

1. public cloud
2. private cloud
3. **community cloud**
4. hybrid cloud

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### Question 3

Which service in Windows Server 2012 R2 authenticates remote users and computers to the Windows domain and its corporate network resources?

1. Active Directory
2. Group Policy
3. **Direct-Access**
4. RAS (Remote Access Service)

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**Question 4**

When using a site-to-site VPN (Virtual Private Network), what type of device sits at the edge of the LAN (Local Area Network) and establishes the connection between sites?

1. VPN proxy
2. VPN server
3. VPN transport
4. **VPN gateway**

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**Question 5**

Which security encryption protocol requires regular re-establishment of a connection and can be used with any type of TCP/IP (Transmission Control Protocol/Internet Protocol) transmission?

1. L2TP (Layer 2 Tunneling Protocol)
2. TLS (Transport Layer Security)
3. **IPSec (Internet Protocol Security)**
4. SSL (Secure Sockets Layer)

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**Question 6**

When using public and private keys to connect to an SSH (Secure Shell) server, where must your public key be placed before you can connect?

1. In an authorization file under your home directory on your computer.
2. **In an authorization file on the host where the SSH server is.**
3. In the /etc/ssh/keys folder.
4. In the /var/run/ssh/public folder.

Page: 354, Chapter 7

**Question 7**

How often should administrators and network users be required to change their password?

1. **60 days**
2. 90 days
3. 120 days
4. 180 days

Page: 366, Chapter 7

**Question 8**

The act of taking advantage of a vulnerability is known as \_\_\_\_\_.

1. hacking
2. poisoning
3. snooping
4. **exploit**

Page: 386, Chapter 8

**Question 9**

Risks associated with transmission and hardware is inherent in which OSI (Open Systems Interconnection) layers?

1. Physical and Application
2. Transport and Data Link
3. Presentation and Session
4. **Physical, Data Link and Network**

Page: 388, Chapter 8

**Question 10**

A security flaw that allows unauthorized users to gain access to a system is known as which one of the following?

1. **backdoor**
2. banner-grabbing
3. buffer overflow
4. ping of death

Page: 390, Chapter 8

**Question 11**

Which one of the following is NOT an important factor when choosing a firewall?

1. Does the firewall support user authentication?
2. **Does the firewall detect and log suspicious activity?**
3. Does the firewall allow you to manage it centrally and through a standard interface?
4. Does the firewall protect the identity of your internal LAN's addresses from the outside world?

Page: 407, Chapter 8

**Question 12**

What kind of firewall blocks traffic based on application data contained within the packets?

1. Host-based firewall
2. **Content-filtering firewall**
3. Packet-filtering firewall
4. Stateless firewall

Page: 407, Chapter 8

**Question 13**

Which of the following TWO statements regarding malware are NOT TRUE?

- a. A virus may damage files or systems or annoy users by flashing messages or pictures on the screen.
- b. Macro viruses were the first type of virus to infect executable files
- c. Network viruses propagate themselves via network protocols.
- d. Viruses do not alter other programs in the same way that other threats do, but they may carry worms.

1. a and b
2. b and c
3. **b and d**
4. c and d

Pages: 415-416, Chapter 8

**Question 14**

Which of the following should be included in an anti-malware policy?

- a. Every computer in an organization should be equipped with malware detection and cleaning software that regularly scans for malware.
- b. Organizations should impose penalties on users who do not follow the anti-malware policy.
- c. Each organization should have an anti-malware team that focuses on maintaining the anti-malware measures.
- d. Users should be allowed to alter or disable the anti-malware software.

1. only b and d
2. only a, c and d
3. **only a and c**
4. a, b, c and d

Pages: 419-420, Chapter 8

**Question 15**

The following list of CHARACTERISTICS describes \_\_\_\_\_ management.

- Assess, monitor, and maintain all network aspects
- Scope differs according to network's size and importance
- Several network management disciplines
- All share same goals
  - Enhance efficiency and performance
  - Prevent costly downtime and loss
- Predict problems before they occur

1. asset
2. change
3. baseline
4. **network**

Page: 435, Chapter 9

**Question 16**

Three versions of SNMP (Simple Network Management Protocol) exist. Which version requires the most complex configuration?

1. SNMPv1
2. SNMPv2
3. **SNMPv3**

Page: 438, Chapter 9

**Question 17**

Which protocol in Linux is a standard for generating, storing, and processing messages about events on a system?

1. Event Viewer
2. event log
3. ls
4. **syslog**

Page: 442, Chapter 9



**Question 18**

A \_\_\_\_\_ monitor continuously monitors network traffic whereas a (n) \_\_\_\_\_ monitor can monitor traffic at a specific interface between a server or client and the network

1. **network; interface**
2. interface; network

Page: 443, Chapter 9

**Question 19**

Which one of the following techniques could be used to prevent clients from downloading more than 50 GB of data per day through a given network interface?

1. Caching
2. Load balancing
3. **Traffic policing**
4. Clustering

Page: 446, Chapter 9

**Question 20**

Which one of the following is NOT a type of client on the VoIP (Voice over IP) network?

1. analog telephones
2. IP telephones
3. softphones
4. **digital phones**

Pages: 449-451, Chapter 9

**Question 21**

SIP (Session Initiation Protocol) and H.323 regulate \_\_\_\_\_ for VoIP or video-over-IP clients and servers.

1. call signaling only
2. control only
3. **call signaling and control**
4. communication between media gateways

Page: 460, Chapter 9

**Question 22**

The subnet mask 255.255.255.0 in binary is \_\_\_\_\_.

1. 11111111.00000000.00000000.00000000
2. 11111111.11111111.00000000.00000000
3. 11111111.11111111.11111111.00000000
4. **11111111.11111111.11111111.00000000**

Page: 491, Chapter 10

**Question 23**

CIDR (Classless Interdomain Routing) notation takes the network ID or a host's IP address and follows it with a \_\_\_\_\_, followed by the number of bits used for the network ID.

1. \
2. !
3. **/**
4. \*

Page: 493, Chapter 10

**Question 24**

Which software allows you to define VMs (Virtual Machines) and manage resource allocation and sharing among them?

1. Host
2. Guest
3. Switch
4. **Hypervisor**

Page: 507, Chapter 10

**Question 25**

With which network connection type does the VM obtain IP addressing information from its host?

1. Bridged mode
2. Managed mode
3. **NAT mode**
4. Host-only mode

Page: 514, Chapter 10

**Question 26**

Which IEEE (Institute of Electrical and Electronics Engineers) standard specifies how VLAN (Virtual Local Area Network) information appears in frames and how switches interpret that information?

1. 802.16
2. **802.1Q**
3. 802.11ac
4. 802.3

Page: 519, Table 10-4, Chapter 10

**Question 27**

Which interface on a switch manages traffic among multiple VLANs?

1. Access port
2. Console port
3. Serial port
4. **Trunk port**

Page: 522, Chapter 10

**Question 28**

Which TWO items make up a Bridge ID?

- a. 2 byte priority field
- b. MAC address
- c. Relevant port number
- d. Software version

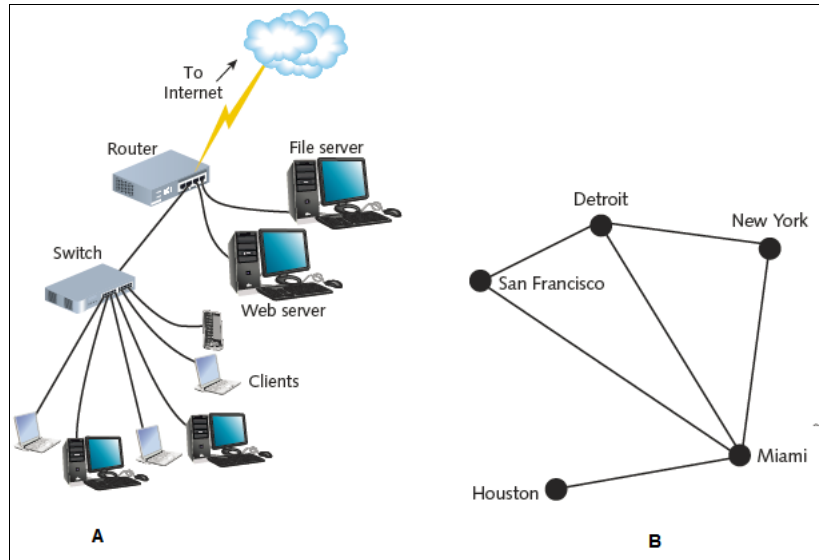
1. **a and b**
2. b and c
3. c and d
4. a and d

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## Wide Area Networks

### Question 29

In the following diagram, 'A' represents a \_\_\_\_\_ and 'B' represents a \_\_\_\_\_.



1. WAN (Wide Area Network (WAN)); LAN
2. **LAN;** **WAN**

Page: 549, Figures 11-1 -11-2, Chapter 11

### Question 30

Study the following list of CHARACTERISTICS.

- Each site connected to two other sites to form a ring pattern
- Connects locations rather than local nodes
- Relies on redundant rings
  - Data rerouted upon site failure
- Expansion
  - Difficult, expensive
- Best use
  - Connecting maximum five locations

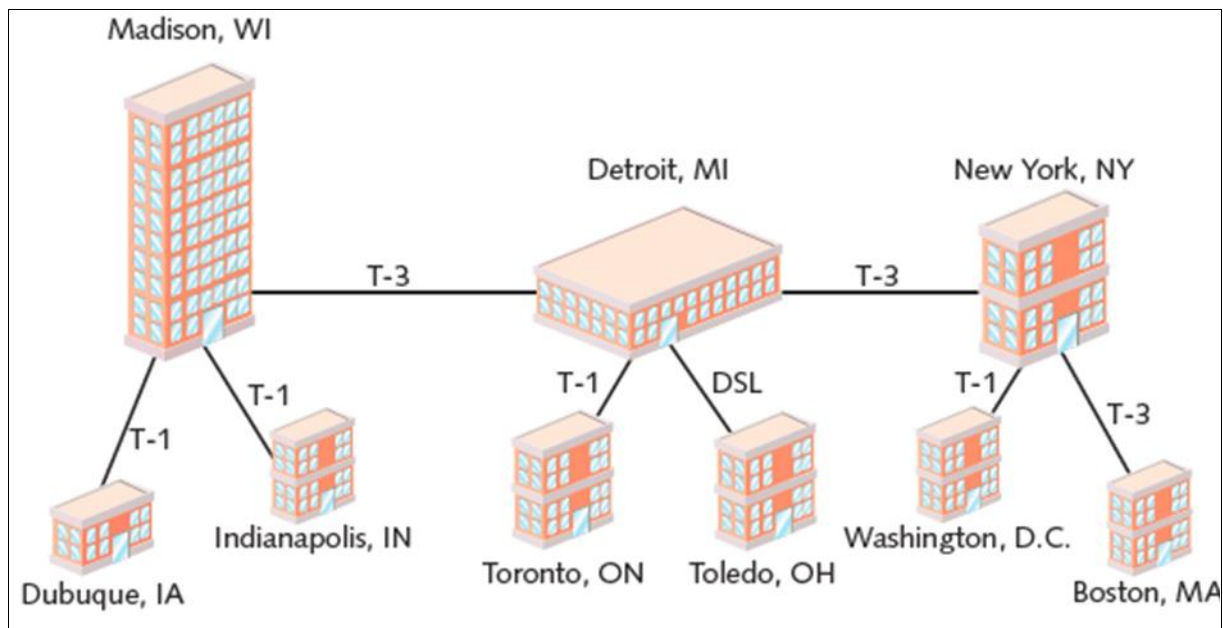
The characteristics above describe a \_\_\_\_\_ topology.

1. bus
2. **ring**
3. star
4. hybrid

Pages: 550-551, Chapter 11

**Question 31**

The following diagram is a typical illustration of a \_\_\_\_\_ topology WAN.



1. hybrid
2. partial-mesh
3. full-mesh
4. **tiered**

Page: 554, Figure 11-7, Chapter 11

**Question 32**

What is the DIFFERENCE between the terms downstream and upstream?

- a. The term downstream refers to data travelling from the carrier's switching facility to the customer.
- b. The term upstream refers to data travelling from the customer to the carrier's switching facility.
- c. The term upstream refers to data travelling from the carrier's switching facility to the customer.
- d. The term downstream refers to data travelling from the customer to the carrier's switching facility.

1. **a and b**
2. c and d
3. neither a nor b
4. neither c nor d

Page: 567, Chapter 11

### Question 33

Which one of the following is an ADVANTAGE of leasing a frame relay circuit over leasing a dedicated circuit?

1. You are guaranteed to receive the maximum amount of bandwidth specified in the circuit contract
2. **You pay only for the bandwidth you have used.**
3. The paths that your data will take are always known.
4. Frame relay is a newly established network technology with more features than other technology.

Page: 566, Chapter 11

### Question 34

A device called a DSL (Digital Subscriber Line) \_\_\_\_\_ aggregates multiple DSL subscriber lines and connects them to the carrier's CO (Central Office).

1. converter
2. **access multiplexer**
3. modem
4. multiporter

Page: 569, Chapter 11

### Question 35

In metro settings, end-to-end, carrier-grade Ethernet networks can be established via what protocol?

1. Metro Carrier Transport
2. **(CET) Carrier-Ethernet Transport**
3. Intra-city Ethernet
4. Ethernet SONET

Page: 580, Chapter 11

## Industrial and Enterprise Networking

**Question 36**

In the context of the basic components specific to an ICS (Industrial Control System), an \_\_\_\_\_, also called the \_\_\_\_\_, collects and stores raw data.

- |                                |                            |
|--------------------------------|----------------------------|
| 1. actuator;                   | fieldbus                   |
| 2. <b>acquisitions server;</b> | <b>I/O server</b>          |
| 3. RTU (Remote Terminal Unit); | MTU (Master Terminal Unit) |
| 4. aggregator;                 | bus system                 |

Page: 607, Chapter 12

**Question 37**

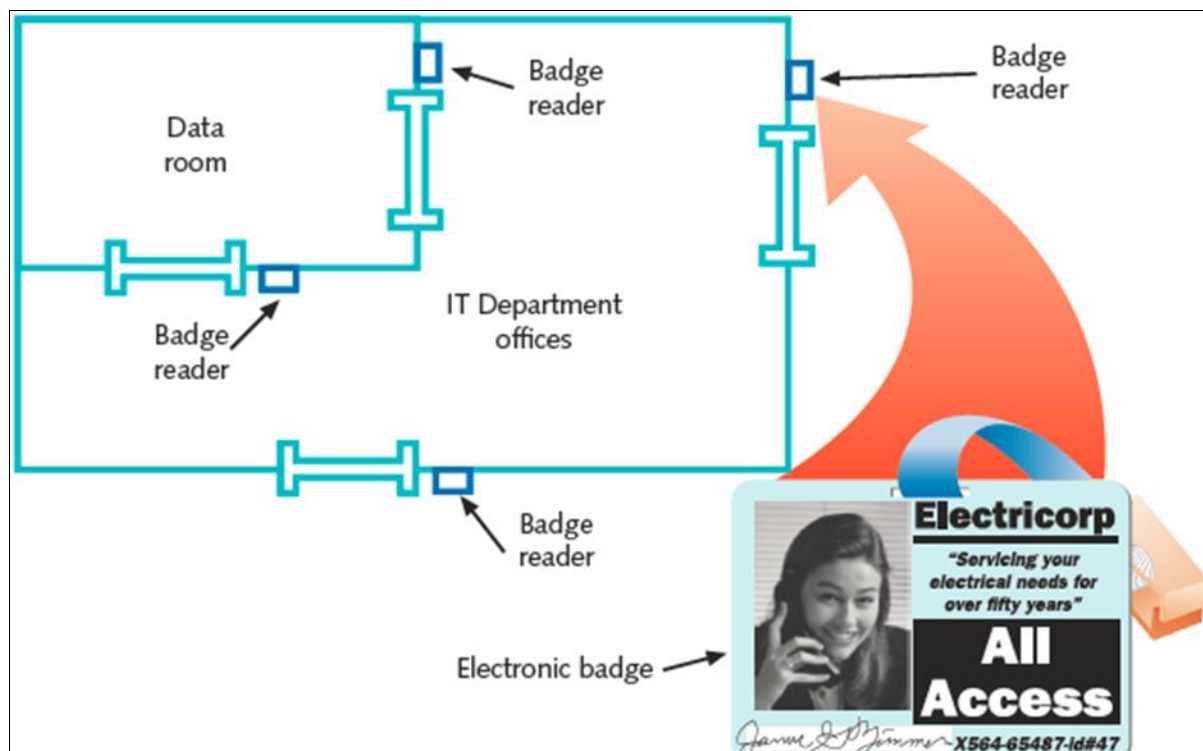
Use the application's automatic uninstall utility, or maintain a complete copy of the previous installation of the application and reinstall it over the upgrade refers to which type of software upgrade.

1. **Shared application upgrade**
2. Operating system upgrade
3. Client software upgrade
4. Operating system patch

Page: 615, Table 12-1, Chapter 12

### Question 38

Which physical security lock is depicted in the following diagram?



1. keypad
2. **access badges**
3. biometric device
4. mantrap

Page: 618, Figure 12-6, Chapter 12

### Question 39

In the context of physical security controls, which one of the following cards specifically contains an internal lithium battery?

1. Smart cards
2. **Active cards**
3. Passive cards
4. Proximity cards

Page: 619, Chapter 12



**Question 40**

Identify the CORRECT disaster recovery contingency in the following table.

a.	The person to call who first notices the problem.
b.	Coordinates the resources necessary to solve the problem.
c.	Focuses on solving the problem quickly.
d.	Acts as official spokesperson for the organization.

1. **(a) dispatcher; (b) manager; (c) technical support specialist; (d) public relations specialist**
2. (a) manager; (b) technical support specialist; (c) public relations specialist; (d) dispatcher
3. (a) technical support specialist; (b) public relations specialist; (c) dispatcher; (d) manager
4. (a) public relations specialist; (b) dispatcher; (c) manager; (d) technical support specialist

Page: 626, Chapter 12