Tutorial Letter 202/2/2018

Computer Networks

COS2626

Semester 2

School of Computing

This tutorial letter contains the solution to Assignment 02 for semester 2

BARCODE

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To be admitted to the examination, you must submit at least **ONE** assignment before the due date. The due dates for the assignments are as follows:

SEMESTER 1	
Assignment 01	10th August 2018
Assignment 02	31st August 2018
Assignment 03	21st September 2018

1 INTRODUCTION

Dear Student,

This tutorial letter, designated COS2626/**202**/2/2018, contains the solution to Assignment 02 for Semester 2.

In compiling this solution, we have provided a comprehensive explanation for each question together with the corresponding page references from the seventh edition of the prescribed book.

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

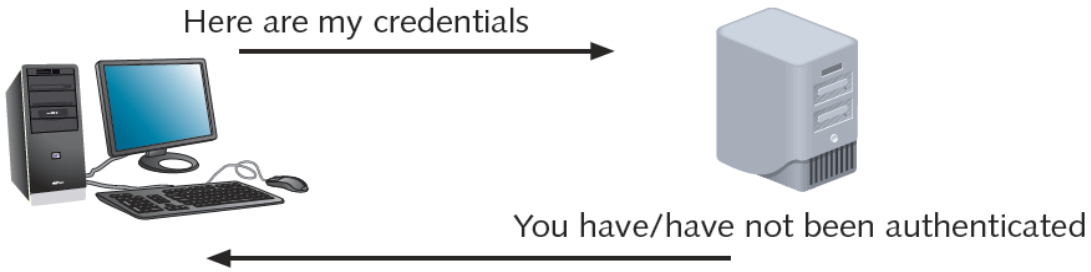
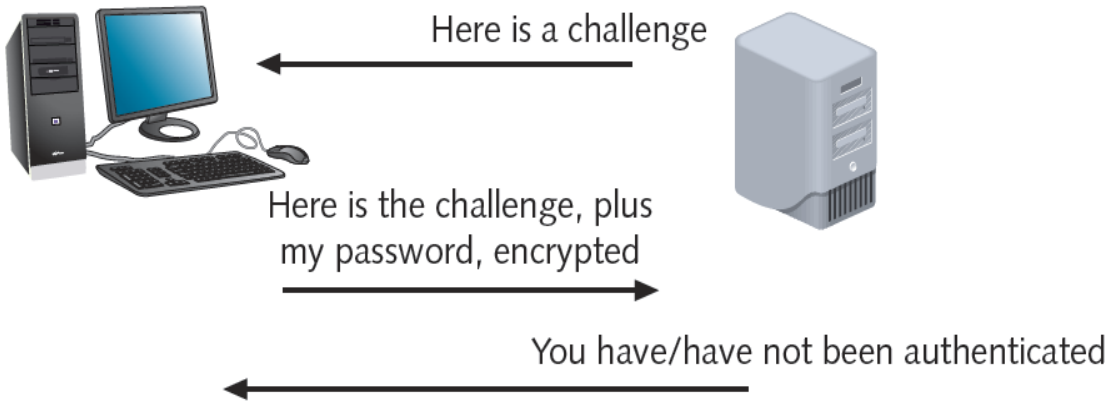
- COS2626/**101**/3/2018 (Start-up letter - Available under Official Study Material on *my*UNISA)
- COS2626/**201**/2/2018 (Solution to Assignment 01 - Available under Additional Resources on *my*UNISA)
- COS2626/**202**/2/2018 (This tutorial letter – Solution to Assignment 02 - Available under Additional Resources on *my*UNISA)

BEST WISHES FOR A SUCCESSFUL YEAR OF STUDY
THE LECTURERS
COS2626

2 SOLUTION TO ASSIGNMENT 02: SEMESTER 2

Question 1 **[2]**

Authentication protocols are the rules that computers follow to accomplish authentication.

1.1	The following diagram illustrates the two-step authentication in _____.  	[1]
PAP✓		
Page: 359, Figure 7-16, Chapter 7		
1.2	The following diagram illustrates the three-way handshake used in _____.  	[1]
CHAP✓		
Pages 359-360, Figure 7-16, Chapter 7		

Question 2 **[4]**

The following questions pertain to security risks. Study the statements and identify which risk category the risk belongs to.

2.1	Intruders or attackers using social engineering or snooping to obtain user passwords is a risk associated with _____.	[1]
people✓		
Page: 387, Chapter 8		
2.2	Computers hosting very sensitive data might coexist on the same subnet with computers open to the general public is a risk associated with _____.	[1]
Transmission and hardware✓		
Page: 389, Chapter 8		

2.3	Transactions that take place between applications, such as databases and Web-based forms, might allow interception. This is a risk associated with _____.	[1]
Protocols and Software✓		
Page 391, Chapter 8		
2.4	Hackers may obtain information about your user ID from newsgroups, mailing lists, or forms you have filled out on the Web. This is a risk associated with _____.	[1]
Internet Access✓		
Pages 391-392, Chapter 8		

Question 3 **[4]**

Name FOUR possible subheadings for the policy outline.

1. **Password Policy** 2. **Software Installation Policy** 3. **Confidential and sensitive data policy** 4. **Network access policy** 5. **Email use policy** 6. **Internet use policy** 7. **Remote access policy** 8. **Policies for connecting to customers' and vendor's networks** 9. **Policies for use of personal smartphones and laptops** 10. **Computer room access policy**
Page: 395, Chapter 8 Any 4 of the above

Question 4 **[3]**

List THREE reasons for implementing VoIP.

4.1	**Lower costs for voice calls.✓**	[1]
4.2	**Readily incorporates new or enhanced features and applications. ✓**	[1]
4.3	**Centralized voice and data network management. ✓**	[1]
Page: 449, Chapter 9		

Question 5 **[5]**

Match each term (5.1 – 5.5) with the correct description (a – e) below: Provide your answer by supplying only the option in the grid provided.				
5.1	runts	a	Loss due to an unknown protocol, unrecognized port, network noise or some other anomaly.	[1]
5.2	giants	b	Frames that are not actually data frames, but aberrations caused by a device misinterpreting stray voltage on the wire.	[1]
5.3	jabber	c	A device that handles electrical signals improperly, usually affecting the rest of the network.	[1]
5.4	ghost	d	Packets that exceed the medium's maximum packet size.	[1]
5.5	packet loss	e	Packets that are smaller than the medium's minimum packet size.	[1]

5.1	**e✓**	Page: 445, Chapter 9
5.2	**d ✓**	Page: 445, Chapter 9
5.3	**c✓**	Page: 445, Chapter 9
5.4	**b ✓**	Page: 445, Chapter 9
5.5	**a ✓**	Page: 445, Chapter 9

Question 6 **[4]**

6.1	What is a backup?	[1]
A backup is a copy of data or program files created for archiving or safekeeping✓.		
Page: 473, Chapter 9		
6.2	Various backup methods use the archive bit in different ways to determine which files should be backed up. Name THREE methods.	[3]
Full backup✓		
Incremental backup✓		
Differential backup✓		
Page: 474, Chapter 9		

Question 7 **[3]**

Provide THREE reasons why a network administrator might separate traffic.

7.1	**Enhance security✓**	[1]
7.2	**Improve performance✓**	[1]
7.3	**Simplify troubleshooting✓**	[1]

Page: 491, Chapter 10

Question 8 **[4]**

Identify the CORRECT WAN topology

WAN TOPOLOGY	DESCRIPTION	
8.1	_____ WANs are the most fault-tolerant type of WAN because they provide multiple routes for data to follow between any two points.	[1]
8.2	In a _____ topology WAN, each site depends on every other site in the network to transmit and receive its traffic.	[1]
8.3	A _____ topology WAN cannot be taken down by the loss of one site; instead, if one site fails, data can be rerouted around the WAN in a different direction.	[1]
8.4	An advantage of a _____ WAN is that when all of its dedicated circuits are functioning, it provides shorter data paths between any two sites.	[1]

8.1	**Mesh**✓
Page: 553, Chapter 11	
8.2	**bus**✓
Page: 550, Chapter 11	
8.3	**ring**✓
Page:550 , Chapter 11	
8.4	**star**✓
Page: 552, Chapter 7	

Question 9 **[7]**

State whether the following statements regarding WANs are TRUE or FALSE. If FALSE, correct the statement.

9.1	The individual geographic locations or endpoints connected by a WAN are known as WAN links.	[2]
False✓ The individual geographic locations or endpoints connected by a WAN are known as **WAN sites**✓.		
Page: 548, Chapter 11		
9.2	In a star topology, a failure at the central location point can bring down the entire WAN.	[1]
True✓		
Page 552, Chapter 11		
9.3	T-carrier standards, also called T-CXR standards, specify a method of signaling, which means they belong to the Network layer of the OSI model.	[2]
False✓ T-carrier standards, also called T-CXR standards, specify a method of signaling, which means they belong to the **Physical layer**✓ of the OSI model.		
Page: 559, Chapter 11		

9.4	A technology that offers more throughput in one direction than in the other is considered symmetrical.	[2]
False✓ A technology that offers more throughput in one direction than in the other is considered **asymmetrical**✓.		
Page: 567, Chapter11		

Question 10 **[4]**

Identify the CORRECT business document in the table below.

10.1	Request to vendors to submit a proposal for a product or service your company wants to purchase.	[1]
10.2	Documents in detail the work that must be completed for a particular project, and includes specifics such as tasks, deliverables, standards, payment schedule and work timeline.	[1]
10.3	A legally binding contract or part of a contract that defines, in plain language and in measurable terms the aspects of a service provided to a customer, such as the service provided by an ISP.	[1]
10.4	Documents the intentions of two or more parties to enter into a binding agreement, or contract, and is sometimes used between an informal handshake and the legally binding signatures on contracts.	[1]

10.1	**RFP (Request for Proposal)** ✓
10.2	**SOW (Statement of Work)** ✓
10.3	**SLA (Service-Level Agreement)** ✓
10.4	**MOU (Memorandum of Understanding)** ✓
Page: 612, Chapter 12	