Tutorial 10: Application Layer

Q1.   The functionality of application layer in X model fits roughly into the top three layers of the OSI model. Draw the Table 1 and answer the item (1) to item (4) in your answer booklet.
(201605 TAR UC, resit)   (2 marks)

OSI model	(4) _____X model_____
(1) _____	Application layer
(2) _____	
(3) _____	

Table 1: Networking Model

Q2.   Differentiate the functions of the OSI application layer, presentation layer and session layer.
(201703 TAR UC, resit)   (12 marks)

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Tutorial 10: Application Layer

Q3.   Provide **TWO (2)** applications that are supported by peer-to-peer (P2P).
(201705 TAR UC, resit)   (3 marks)

_____

_____

_____

Q4.   Differentiate between GET message and POST message. *(201703 TAR UC, resit)*   (4 marks)

_____

_____

_____

_____

Q5.   (a)   List **ONE (1)** protocol that is used to send e-mail messages. *(201705 TAR UC, resit)*
(1 mark)

_____

(b)   Provide **TWO (2)** comparisons of Post Office Protocol version 3 (POP3) and Internet Message Access Protocol (IMAP). *(201705 TAR UC, resit)*   (4 marks)

_____

_____

_____

_____

(c)   Briefly explain TWO (2) processes that are handled by e-mail servers.
(201705 TAR UC, resit)   (4 marks)

_____

_____

_____

_____

Tutorial 10: Application Layer

Q6.   With reference to Figure 1, answer the following questions:
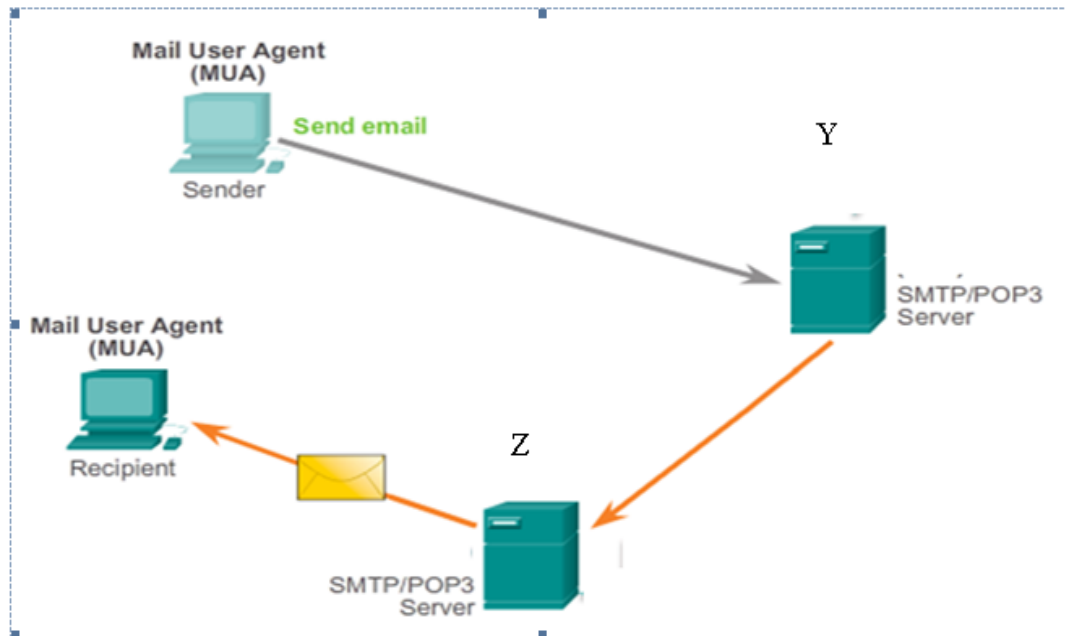

Figure 1: Email Operation

(i)   Identify the type of mail agents labeled with Y and Z. *(201609 TAR UC, Main)* (3 marks)

_____

_____

(ii)   Differentiate between mail agent Y and mail agent Z. *(201609 TAR UC, Main)* (6 marks)

_____

_____

_____

_____

_____

_____

_____

_____

Tutorial 10: Application Layer

Q7.   XYZ Company plans to implement a new application in its network that is able to connect the local mail server for sending and receiving daily emails to their clients.

(i)   What are the **TWO (2)** types of protocols and their respective port numbers that are essential in developing the new application? *(201603 TAR UC, resit)*   (4 marks)

_____

_____

_____

(ii)   Discuss **THREE (3)** types of mail agents involved in the new application. *(201603 TAR UC, resit)*   (9 marks)

_____

_____

_____

_____

_____

_____

_____

Q8.   (a)   Describe how the DNS works by using the destination address: www.cisco.com. *(201603 TAR UC, resit)*   (8 marks)

_____

_____

_____

_____

_____

_____

_____

(b)　　　Give any **FOUR (4)** examples of top level domains. *(201603 TAR UC, resit)*　　　(4 marks)

_____

_____

_____

_____

_____

Q9.　　The Dynamic Host Configuration Protocol (DHCP) service enables devices on a network to obtain information from a DHCP server.

(i)　　　Give **FOUR (4)** examples of the information obtains from a DHCP server. *(201605 TAR UC, resit)*　　　(2 marks)

_____

_____

_____

_____

(ii)　　　With the aid of diagram, illustrate the FOUR (4) steps process of DHCP. *(201605 TAR UC, resit)*　　　(12 marks)

Tutorial 10: Application Layer

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Q10.   Briefly explain the main function and state the well-known port number with transport layer protocol used for the following application layer protocols:

(i)   Hypertext Transfer Protocol (HTTP) *(201703 TAR UC, resit)*   (4 marks)

_____

_____

_____

(ii)   Domain Name System (DNS) *(201703 TAR UC, resit)*   (4 marks)

_____

_____

_____

(iii)   Dynamic Host Configuration Protocol (DHCP) *(201703 TAR UC, resit)*   (4 marks)