SOLUTION QUIZ-02 BCS-5A

QUESTION-01

1. C

2. A

3. B

TRUE/FALSE

i.   False
ii. False

QUESTION-02

- Fill in the names of the layers, a protocol that corresponds to each layer and the name of the data unit in each one. Then, place the appropriate letter in the blank associated with the layer for the proper description of its services below as illustrated in the solved examples.

	Name of the layer	Protocols	Name of data unit	Proper description
Layer 5	application	HTTP,smtp, dns,	message	d
Layer 4	transport	UDP, TCP	segment	c
Layer 3	Netowork or internet	IP	Packet or datagram	b
Layer 2	Data link	Ethernet	frame	e
Layer 1	Physical layer	Analog/digital	bit	a

a) Provides a definition of mechanical and electrical standards for communication system
b) Concerned with routing packets across a communication network
c) Provides end-to-end logical communication between application processes.
d) Format and transfer files between communication paradigm and the user's software
e) Frames of data are transferred across a single link

SOLUTION QUIZ-02 BCS-5C

QUESTION-01

1. C

2. D

3. A

TRUE/FALSE

i.   False
ii.   False

QUESTION-02

1. RTT = propagation delay * 2 = 10 ms * 2 = 20 ms = 0.02 sec
    RTT count = 2 RTT (for base object) + 10*2 RTT (for 10 reference images) = 22 RTTs = 22 * 0.02 = 0.44 sec
    Base file transmission time = L/R = 50 Kbytes / 2 Mbps = $(50*10^3*8) / (2*10^6)$ = 0.2 sec
    10 reference images transmission time = 10 (L/R) = 10 * [25 Kbytes / 2 Mbps = $(25*10^3*8)$ / $(2*10^6)$ = 1 sec
    Total time = 22 RTT time + base file transmission + ten reference images transmission times = 0.44 + 0.2 + 1.0 = **1.64** seconds.

2. RTT = propagation delay * 2 = 10 ms * 2 = 20 ms = 0.02 sec
    RTT count = 1 RTT to open TCP connection + 11 RTT (to request 1 base + 10 reference objects) = 12 RTT = 12 * 0.02 = 0.24 sec
    File transmission times are the same for base and reference images as in part 1.
    Base file transmission time = L/R = 50 Kbytes / 2 Mbps = $(50*10^3*8) / (2*10^6)$ = 0.2 sec
    10 reference images transmission time = 10 (L/R) = 10 * [25 Kbytes / 2 Mbps = $(25*10^3*8)$ / $(2*10^6)$ = 1 sec
    Total time = 12 RTT time + base file transmission + ten reference images transmission times = 0.24 + 0.2 + 1.0 = **1.44** seconds.

3. RTT = propagation delay * 2 = 10 ms * 2 = 20 ms = 0.02 sec
    RTT count = 1 RTT to open TCP connection + 1 RTT to request base file + 1 RTT to request all reference objects = 3 RTT = 3 * 0.02 = 0.06 sec
    File transmission times are the same for base and reference images as in part 1 or 2.
    Base file transmission time = L/R = 50 Kbytes / 2 Mbps = $(50*10^3*8) / (2*10^6)$ = 0.2 sec
    10 reference images transmission time = 10 (L/R) = 10 * [25 Kbytes / 2 Mbps = $(25*10^3*8)$ / $(2*10^6)$ = 1 sec
    Total time = 3 RTT time + base file transmission + ten reference images transmission times = 0.06 + 0.2 + 1.0 = **1.26** seconds.