KATHMANDU UNIVERSITY
End Semester Examination [C]
December, 2018

Marks scored:

Level : B.E. /B.Sc.
Year : II
Course : COMP 204
Semester: II
Exam Roll No. :
Time: 30 mins.
F. M. : 10
Registration No.:
Date DEC 30 2018

SECTION "A"
[20 Q. × 0.5 = 10 marks]

Choose and tick (√) the most appropriate answer:

1. In a _____ connection, more than two devices can share a single link.
[a] point-to-point [b] multipoint [c] primary [d] secondary

2. Communication between a computer and a keyboard involves _____ transmission.
[a] simplex [b] half-duplex [c] full-duplex [d] automatic

3. Bits can be sent over guided and unguided media as analog signal by
[a] digital modulation [b] amplitude modulation
[c] frequency modulation [d] phase modulation

4. When two (2) or more bits in a data unit is changed during the transmission, it is called
[a] random error [b] burst error [c] inverted error [d] run-time error

5. Automatic repeat request error management mechanism is provided by
[a] logical link control sublayer [b] media access control sublayer
[c] network interface control sublayer [d] physical layer

6. User datagram protocol is called connectionless because
[a] all UDP packets are treated independently by transport layer
[b] it sends data as a stream of related packets
[c] it is received in the same order as sent order
[d] it keeps track of the lost packets

7. What is the port number of SMTP?
[a] 23 [b] 25 [c] 20/21 [d] 27960

8. When a host on network A sends a message to a host on network B, which address does the router look at?
[a] port [b] logical [c] physical [d] socket

9. Parameter that refers to uneven delay of data packets in delivery is
[a] Jitter [b] Timelessness
[c] Accuracy [d] Transmission medium

10. The 32-bit internet address 10000000 00001010 00000010 00011110 will be written in dotted decimal notation as _____.
[a] 148.20.2.30 [b] 164.100.9.61 [c] 210.20.2.64 [d] 128.10.2.30

11. If Five (5) files are transferred from server A to client B in the same session then the number of TCP connections between A and B is
[a] 5 [b] 10 [c] 2 [d] 6

12. The _____ translates internet domain and host names to IP address.
[a] domain name system [b] routing information protocol
[c] network time protocol [d] internet relay chat

13. An attempt to make a computer resource unavailable to its intended users is called
[a] Denial-of-service attack [b] Virus attack
[c] Worms attack [d] Botnet process

14. The field used to detect errors over the entire user datagram is
[a] UDP header [b] Checksum [c] Source port [d] Destination port

15. Suppose two IPv6 nodes want to interoperate using IPv6 datagrams but are connected to each other by intervening IPv4 routers. The best solution here is
[a] Use dual-stack approach [b] Tunneling
[c] No solution [d] Replace the system

16. In a simple echo-request message, the value of the sum is 01010000 01011100. Then, the value of checksum is
[a] 10101111 10100011 [b] 01010000 01011100
[c] 10101111 01011100 [d] 01010000 10100011

17. In asymmetric key cryptography, the private key is kept by
[a] sender [b] sender and receiver
[c] all the connected devices to the network [d] receiver

18. The computation of the shortest path in OSPF is usually done by
[a] Bellman-ford algorithm [b] Routing information protocol
[c] Dijkstra's algorithm [d] Distance vector routing

19. Multiplexing is used in _____.
[a] Packet switching [b] Data switching
[c] Circuit switching [d] Frame switching

20. HTTP client requests by establishing a _____ connection to a particular port on the server.
[a] user datagram protocol [b] broader gateway protocol
[c] file transfer protocol [d] transmission control protocol

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Time : 2 hrs. 30 mins.

Course : COMP 204
Semester: II
F. M. : 40

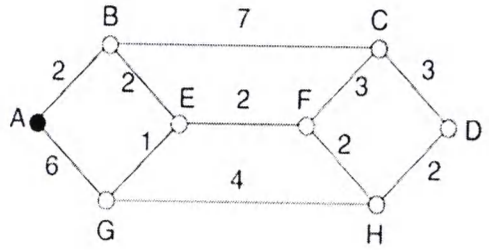
SECTION "B"
[6 Q. × 4 = 24 marks]

Attempt *ANY SIX* questions.

1. What is modulation? Describe modulation techniques in brief. [1+3]

2. Explain different types of variable size framing. [4]

3. Describe Dijkstra's Algorithm. Find the shortest path of the following figure from source **A** to destination **H**. [4]



4. Distinguish between TCP and UDP. [4]

5. Describe the IPv4 datagram format in brief. [4]

6. What is cryptography? Describe different categories of cryptography. [1+3]

7. Write short notes on : [2+2]
   a. Twisted Pair Cable
   b. Coaxial Cable

SECTION "C"
[2 Q. × 8 = 16 marks]

Attempt *ANY TWO* questions.

8. What is Protocol? What are the key elements of a Protocol? Briefly describe the OSI Reference Model. [1+2+5]

9. What are the functions of Media Access Control? Briefly describe the types of Random Access Protocol. [1+7]

10. Suppose that there are 4 Departments A (23 Hosts), B (16 Hosts), C (28 Hosts), D (13 Hosts). Given a network 202.70.64.0/24, perform sub-netting in such way that IP wastage in each sub-network is minimum. Find Subnet mask, First address, last address, and usable host range for each network. [8]