Computer Networks
Assignment no.:2

Roll no.: **Date: 23/03/2020**

Name:

Rubrics for assessment of Assignment:

Indicator	Poor	Average	Good	Excellent
Timeline (2)	More than two session late (0)	Two sessions late (1)	One session late (1.5)	Early or on time (2)
Organization (2)	Very poor readability and not structured (0)	Poor readability and somewhat structured (1)	Readable with one or two mistakes and structured (1.5)	Very well written and structured without any mistakes (2)
Level of content (4)	Major points are omitted or addressed minimally (1)	All major topics are covered, the information is accurate.(2)	Most major and some minor criteria are included. Information is Accurate (3)	All major and minor criteria are covered and are accurate. (4)
Depth and breadth discussion (2)	None in evidence; superficial at most (0.5)	Minor points/information may be missing and discussion is minimal (1)	Discussion centers on some of the points and covers them adequately (1.5)	Information is presented in depth and is accurate (2)

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Questions:

1. Explain compression techniques in detail. Hence compress the given data using LZW compression.
   WYS*WYGWYS*WYSWYSG

2. Explain application layer protocols in details.

3. Differentiate between TCP and UDP. Hence find out following information from received TCP header.

   E293 00170000000 1 00000000 5002 07FF

   a. Source port no.
   b. Destination port no.
   c. Sequence no.
   d. Acknowledgement no.
   e. Length of header
   f. Type of segment
   g. Window size.

4. Short note on TCP state transition.
5. Compare IPv4 and IPv6 .Hence for given IP Datagram find out following information.
   45000054 00030000 2006.....
   a. header size
   b. Are there any options in packet?
   c. Size of data
   d. Is packet fragmented?
   e. No of routers packet can travel.

6. An organization is granted the block 130.56.0.0/16. The administrator wants to create 1024 subnet.

   a. Find no. Of addresses in each prefix
   b. Find subnet prefix
   c. Find first and last address in first subnet
   d. Find first and last address in last subnet.

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7. The routing table of a router is shown below. Find out on which interfaces will the router forward packets addressed to destinations 128.75.43.16 and 192.12.17.10 respectively?

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Destination	Sub net mask	Interface
128.75.43.0	255.255.255.0	Eth0
128.75.43.0	255.255.255.128	Eth1
192.12.17.5	255.255.255.255	Eth3
default		Eth2

Ans:

8. An IP packet with 2500 bytes of data plus header passes through IP network with MTU 500 bytes. How many additional bytes will be delivered at destination?
9. IP packet, value of HLEN is 5,and value of total length field is 1000 in decimal ,how many data bytes that packet carries?
10. A message is made up entirely of characters from the set X = {P,Q,R,S,T} . The table of probabilities of each character is shown below :

Character	Probability
P	0.22
Q	0.34
R	0.17
S	0.19
T	0.08
Total	1.00

A message of 100 characters over X is encoded using Huffman coding.

Then the excepted length of the encoded message in bits is----------.

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11. Short notes on

a. Berkleys socket

b. Piggybacking

c. congestion control Techniques