Roll No.											

GAIN MORE KNOWLEDGE
REACH GREATER HEIGHTS

PRESIDENCY UNIVERSITY
BENGALURU

SCHOOL OF ENGINEERING

TEST - 1

Even Semester: 2018-19 | **Date**: 05 March 2019

Course Code: ECE 219 | **Time**: 1 Hour

Course Name: Computer Communication & Networks | **Max Marks**: 40

Programme & Sem: B.Tech (ECE) & VI Sem | **Weightage**: 20%

Instructions:

(i) ***Read the questions and answer accordingly***

(ii) ***Question paper consists of 3 parts***

Part A

Answer **all** the Questions. **Each** question carries **four** marks. (3Qx4M=12)

1. Draw TCP-IP model and its equivalence to OSI in a single figure. Name the protocols of various layers, and explain in short
2. Write a short note on HDLC Protocol, types of frames and their control fields.
3. Compare Flow control and error control clearly stating the difference between the two jobs

Part B

Answer **all** the Questions. **Each** question carries **six** marks. (2Qx6M=12)

4. What are the jobs of DLL? Explain each job in short naming the schemes used for each one.
5. Classify 5 DLL Algorithms for error free, finite speed and infinite speed and noiseless and noisy channels, and explain each in short

Part C

Answer **all** the Questions. **Each** question carries **eight** marks. (2Qx8M=16)

6. If original data from upper layer is as follows – show result of (a) byte stuffing/ destuffing and (b) bit stuffing/ destuffing 0110 0000 0111 1110 0110 1111 1111 0111. Assume stuffed byte is the ascii character code 60h = 0110 0000
7. Explain Selective Repeat with Time scale diagram

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BENGALURU

SCHOOL OF ENGINEERING

TEST - 2

Even Semester: 2018-19
Course Code: ECE 219
Course Name: Computer Communication Networks
Program & Sem: B.Tech & VI Sem

Date: 15 April 2019
Time: 1 Hour
Max Marks: 40
Weightage: 20%

Instructions:

(i) ***It is a closed Book test***
(ii) ***Calculator exchange is not allowed***

Part A

Answer **all** the Questions. **Each** question carries **four** marks. (3Qx4M=12)

1. For the IPv4 addresses perform as asked
   a. 192.10.10101010.30 – is it valid or invalid, and why?
   b. Convert 255.255.128.1 to binary
   c. Identify the class for 200.1.2.3 in class-full addressing
   d. The masked classless address 100.200.3.4 / 27 accommodates how many host IDs?
2. Explain the working of CSMA-CA scheme of MAC layer with its benefits and limitations
3. Explain CSMA CD Working with timescale diagrams.

Part B

Answer **both** the Questions. **Each** question carries **six** marks. (2Qx6M=12)

4. Tabulate the 3 classes – A, B, C of IPv4 and show the bytes for Net id and Host id with the total number of addressed available for each category
5. Explain formation and usage of CDMA chips and create CDMA chips for 4 users starting at (-1)

Part C

Answer **both** the Questions. **Each** question carries **eight** marks. (2Qx8M=16)

6. Draw IPv4 Header and explain all the fields
7. One address in a set purchased equally by 4 users P,Q, R and S is 128.192.0.5 /25
   a. Find the Mask
   b. Number of fixed and variable bits
   c. Find Total available host addresses
   d. Start Address and end address of this complete block address
   e. Each user will share how many IDs?
   f. Network Id of each user along with Start and end address for each user (3 Marks)

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PRESIDENCY UNIVERSITY
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END TERM FINAL EXAMINATION

Even Semester: 2018-19 | **Date**: 25 May 2019

Course Code: ECE 219 | **Time**: 3 Hours

Course Name: Computer Communication Networks | **Max Marks**: 80

Program & Sem: B.Tech & VI Sem | **Weightage**: 40%

Instructions: All questions are compulsory. No exchange of calculators allowed.
Decide the depth of the answers as per the marks allotted and time calculation

Part A

Answer **all** the Questions. Q1 carries 14 and Q2 carries 6 marks.

1. Fill in the Blanks (7Qx2M=14M)

a. Repeater is a device _____ layer, while router is used _____ layer. The Bridge is ___ and makes ___ decisions.
b. Eutopia protocol is used in cases with _____ errors and _____ transmission times whereas Stop and wait ARQ considers both values to be _____
c. The IPv4 frame arriving with 1100 0001 as initial 8 bits have two errors leading to rejection. These are _____ and _____. The IPv4 address 40.E0.300.25 is invalid because ___ and _____
d. Contention free and non channelization protocols for MAC are _____, _____, _____, and _____
e. IPv4 arrives with HLEN = 0110 and TLEN = 64. It means the header is _____ bytes, Options are _____ bytes, Length of payload or upper layer data is _____ bytes.
f. Port addresses have _____ bits and _____ total addresses. They are used at ___ layer to identify the _____.
g. The four types of addresses in different layers are _____, _____, _____, and _____ used at ___, ___, _____ and _____ layers .

2. Match the Following (6Qx1M=6M)

Column A	Column B
a. Contention Protocol	i. SCTP
b. Well known ports	ii. HTTP
c. Transport Layer Protocol	iii. CSMA-CD
d. Application layer Protocol	iv. Server
e. Channelization Method	v. Checksum
f. Error Detection Method	vi. FDMA

Part B

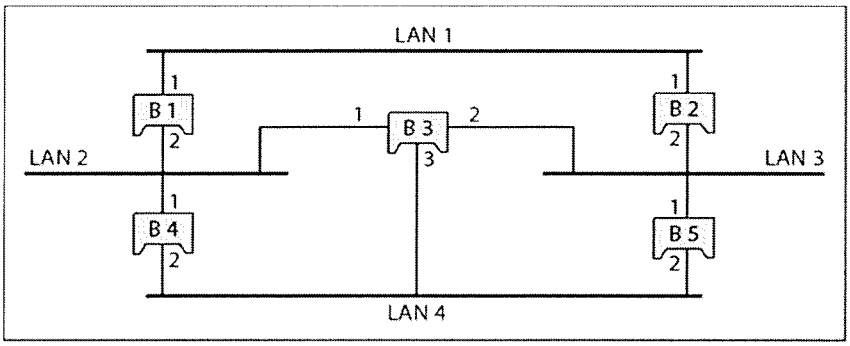
Answer **all** the Questions. **Each** question carries **four** marks. (5Qx4M=20M)

3. The data from upper layer is shown, **explain and show** framing with bit stuffing **in bold** and DE stuffing 1001 1011 0111 1010 0111 1101 0011 0111 0111 1110 1000 1100
4. **Draw and Explain** the Hybrid Model in detail.
5. A group of 4 users A, B, C, D, buys a set of addresses 200.201.202.150 / 24. Along with relevant **formulas**, find the counts of (a) Fixed bits and variable bits (b) addresses available altogether, and the number of addresses allotted to each user. (b) Find the First address and Last address. (c) Which class and which mask is indicated here?
6. A **slotted ALOHA** network transmits 200-bit frames on a shared channel of 200 kbps. Find Frame time and vulnerable time. What is the throughput if the system (all stations together) produces (a) 1000 frames per second (b) 500 frames per second (c) 250 frames per second
7. Compare (a) Repeater versus amplifier, and (b) Virtual Network versus Backbone networks with figures (c) Bridge versus router (d) CDMA versus TDMA

Part C

Answer **all** the Questions. **Each** question carries **eight** marks. (5Qx8M=40M)

8. (a) Explain with neat diagrams the looping problem in self learning bridges, and (b) spanning tree as a solution to this looping problem for the following problem. Take B1 as root. (steps carry marks)



a. Actual system

9. Draw UDP Header and pseudo header and explain each field in detail.
10. Draw TCP Header and explain each field in detail with example values of typical fields.
11. Explain DNS in application layer in detail. Differentiate (a) Recursive and Iterative Resolution (b) FQDN and PQDN (c) Primary and secondary servers (d) Zone and Domain
12. Draw layered architecture of **connecting** devices model, and name and explain the purpose and usage of each one of them in detail.