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- (f) Discuss the services of each layer of OSI reference model.
- (e) What do you mean by service primitives?
- (d) SNR required to accomplish this?
- (c) It is required to transmit a data at a rate of 64 kbps over a 3 kHz telephone channel. What is the minimum transmission rate is 10 kbps.
- (b) Calculate the required Bandwidth, if in a communication channel the signal power is 10 W, and the information devices connected in mesh, ring, bus and star topology?
- (a) What are the number of cable links required for n State two reason for using layered protocols.
- (a) Differentiate between Bit rate and baud rate. A modem constellation diagram has data point at coordinates: (1,1), (1,-1), (-1,1) and (-1,-1). How many bps can a modem with these parameters achieve at 1200 baud?

(5×4=20)

1 ATTEMPT ANY FOUR :

NOTE: ATTEMPT ALL QUESTIONS.

[Total Marks : 100]

Time : 3 Hours]

COMPUTER NETWORK

(SEM. VI) THEORY EXAMINATION, 2014-15

B. Tech.

Roll No.									
PAPER ID : 110601									
(Following Paper ID and Roll No. to be filled in your Answer Book)									

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Printed Pages : 4

- ne network very soon?
- IP? Did you think we will stop using
- problems for full implementation of
- ame things?
- nd contrast TCP with RTP. Are both
- page? Also explain the role of CGI.
- nce between an active web document
- ss protocols.
- tain the advantages of IMAP 4 over
- P can handle transfer of videos and
- (10×2=20)
- esign and implementation issues.
- eps of JPEG compression standard.

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ATTEMPT ANY FOUR :

(5×4=20)

- (a) Given a 10-bit sequence 1010011110 and a divisor of 1011. Find the CRC. Check your answer.
- (b) Answer the following :

- (i) A pure Aloha network transmits 200 bit frames on shared channel of 200 kbps. What is the throughput put if the system (all station together) produces 250 frames per second?
- (ii) How can you compare pure Aloha and slotted Aloha?
- (c) Discriminate between the send window and receive window for link and how are they related with-
- (i) A selective repeat retransmission scheme
- (ii) A go-back-N control scheme
- (d) Discuss different carrier sense protocols. How are they different than collision protocols?
- (e) Sketch the Manchester and differential Manchester encoding for the bit stream: 0001110101
- (f) Discuss the different physical layer transmission media.

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ATTEMPT ANY TWO :

(10×2=20)

- (a) Write short notes on following:
- (i) Stop and wait ARQ
- (ii) Sliding Window Protocol
- (iii) Go-Back N ARQ
- (iv) Collision Avoidance

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ATTEMPT ANY TWO :

(10×2=20)

- (b) Perform the subnetting of the following IP address 160.11.X.X. Original subnet mask 255.255.0.0 and Number of subnet 6 (six)
- (c) What is the transmission time of a packet sent by a station if the length of the packet is 2 million bytes and the bandwidth of the channel is 300 kbps?

- (a) Draw the diagram of TCP header and explain the use of the following:
- (i) Source and destination port addresses
- (ii) Sequence and acknowledgement numbers
- (iii) Code bits
- (iv) Window size
- (v) Urgent pointer
- Describe the role of checksum field and option pad bytes.
- (b) Answer the following:

- (i) Differentiate between the block cipher with transposition cipher.
- (ii) Using the RSA public key cryptosystem with $a=1$, $b=2$ etc.
- (I) If $p=7$ and $q=11$, list five legal values for d .
- (II) If $p=13$ and $q=31$ and $d=7$, find e .

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(c) Discuss:

- (i) Different steps of JPEG compression standard.
- (ii) The RPC design and implementation issues.

5 ATTEMPT ANY TWO : (10×2=20)

- (a) Explain the SMTP can handle transfer of videos and images? Also explain the advantages of IMAP 4 over POP 3 mail access protocols.
- (b) What is the difference between an active web document and dynamic web page? Also explain the role of CGI.
- (c) (i) Compare and contrast TCP with RTP. Are both doing the same things?
- (ii) What are the problems for full implementation of voice over IP? Did you think we will stop using the telephone network very soon?

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PAPER ID : 11J601

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(SEM. VI) THEORY
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Time : 3 Hours]

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a modem with the
State two reason
- (b) What are the nu
devices connecte
- (c) Calculate the requ
channel the signa
transmission rate
- (d) It is required to
over a 3 kHz tele
SNR required to
- (e) What do you m
- (f) Discuss the serv
model.

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