

4E1217

Roll No. _____

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B. Tech. IV - Sem. (Back) Exam., Oct.-Nov. - 2020
Computer Science & Engineering
4CS4 - 07 Communication and Computer Networks
CS, IT

Time: 2 Hours

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Maximum Marks: 82

Min. Passing Marks: 29

Instructions to Candidates:

Attempt all ten questions from Part A, four questions out of seven questions from Part B and two questions out of five from Part C.

Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly. Units of quantities used /calculated must be stated clearly.

Use of following supporting material is permitted during examination. (Mentioned in form No. 205)

1. NIL

2. NIL

PART - A

(Answer should be given up to 25 words only)

[10×2=20]

All questions are compulsory

- Q.1 Why are protocols needed? [2]
Q.2 What is the difference between Network Layer and Transport Layer? [2]
Q.3 What is peer - to - peer process? [2]
Q.4 Name three types of Transmission Impairments. [2]
Q.5 The period of a signal is 100 ms. What is its frequency in kilohertz? [2]
Q.6 Define piggy backing and its usefulness. [2]
Q.7 What is NAT? [2]
Q.8 What is the broadcast address for Ethernet? [2]
Q.9 What are cookies? [2]
Q.10 Explain types of errors. [2]

PART - B

(Analytical/Problem solving questions)

[4×8=32]

Attempt any four questions

- Q.1 Write the difference between UDP and TCP. [8]
- Q.2 What is topology? Explain types of topology with suitable diagram. [8]
- Q.3 We measure the performance of a telephone line (4 kHz of bandwidth). When the signal is 20V, the noise is 6 mV. What is the maximum data rate supported by this telephone line? [8]
- Q.4 Write short notes on – [2×4=8]
- (a) Go - Back - N ARQ
 - (b) CSMA/CD
- Q.5 Explain Leaky bucket and Token bucket algorithm in detail. [8]
- Q.6 Write short notes on – [2×4=8]
- (a) Architecture of WWW
 - (b) SMTP
- Q.7 What are the differences between OSI model and TCP/IP model? [8]

PART – C

(Descriptive/Analytical/Problem Solving/Design Questions) [2×15=30]

Attempt any two questions

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Q.1 A sender needs to send the four data items OX3456, OXABCC, OX02BC and OXEEEE.

Answer the following –

[15]

- (a) Find the checksum at the sender site.
- (b) Find the checksum at the receiver site if there is no error.
- (c) Find the checksum at the receiver site if the second data item is changed to OXABCE.
- (d) Find the checksum at the receiver site if the second data item is changed to OXABCE and the third data item is changed to OX02BA.

Q.2 Explain the IP addressing with subnet masking. Also write the difference between IPV₄ and IPV₆. [15]

Q.3 What do you understand by Aloha? Explain pure and slotted aloha. A pure aloha network transmits 200-bits frames on a shared channel of 200 kbps. What is the throughput if the system produces 1000 frames per second? [15]

Q.4 Write short notes on –

[3×5=15]

- (a) DNS
- (b) Electronic mail
- (c) Sliding window protocol

Q.5 Describe the elements of transport protocols.

[15]

