AUTUMN MID SEMESTER EXAMINATION-2018
School of Computer Engineering
KALINGA INSTITUTE OF INDUSTRIAL TECHNOLOGY
DEEMED TO BE UNIVERSITY, BHUBANESWAR-24

COMPUTER NETWORK
[IT-3001]

Time: 1.5 Hours　　　　　　　　　　　　　　　　　　　　Full Marks: 20

Answer any five questions including question No.1 which is compulsory. The figures in the margin indicate full marks. Candidates are required to give their answers in their own words as far as practicable and all parts of a question should be answered at one place only.

Q 1.　a. With nonpersistent connection between browser and origin server, is it possible for a single　[5×1]
　　　TCP segment to carry two distinct HTTP request message? Explain your answer.

　　　b. Why do HTTP, FTP and SMTP protocols runs on the top of TCP rather than on UDP?

　　　c. What would be the type for the Resource Record (RR) that contains the host-name of the
　　　mail server?

　　　d. Is it possible for an application to enjoy reliable data transfer even when the application
　　　runs over UDP? If so how? (Be brief in your answer)

　　　e. In our reliable data transfer protocol (rdt), why did we need to introduce sequence
　　　numbers?

Q2.　a. Consider sending a packet from a source host to a destination host over a fixed route. List　[3]
　　　and explain the delay components in the end-to-end delay. Which of this delays are constant
　　　and which are variable?

　　　b. Explain why the size of the sender window must be less than 2^m for Go-Back-N ARQ.　[2]

Q3.　a. Suppose Alice, with a web-based e-mail account send a message to Bob, who accesses his　[3]
　　　mail from his mail server using POP3. Discuss how the message gets from Alice's host to
　　　Bob's host.

　　　b. In SMTP, a sender sends unformatted text. Write and explain the MIME header for his　[2]
　　　message.

Q4.　a. The distance from earth to a distant planet is approximately 9×10^{10} m. What is the channel　[3]
　　　utilization if a stop-and-wait protocol is used for frame transmission on a 64 Mbps point-to-
　　　point link? Assume that the frame size is 32 KB and the speed of light is 3×10^8 m/s.

　　　b. What is the difference between centralized P2P network and decentralized P2P network?

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Q5.　Write short note on any two.　　　　　　　　　　　　　　　　　　　[2.5 + 2.5]

　　　a. Conditional-GET
　　　b. Connection establishment of TCP protocol.
　　　c. TCP Congestion Control.

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