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 four 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. Suppose you have configured your POP mail client to operate in the download-and-delete mode. Complete the following transaction: [5×1]

C: list
S:1 498
S:2 912
S: .
C: retr 1
S: blah blah ….....
S: ….....blah
S .
?
?

b. What is the need for the UDP? Would it not have been enough to just let user processes send raw IP packets? Explain in few sentences.

c. What would be the type for the Resource Record (RR) that contains the canonical host-name for a host?

d. Differentiate TCP and UDP.

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

Q2. a. How does TCP determine the time-out for implicit detection of packet loss? Be brief. [3]

b. Sketch the flow of a typical email from Alice to Bob. Assume that Alice and Bob are on different "networks" (say, they are located in different parts of the world). Identify the key components (both hardware and software) and protocols in the flow. [2]

Q3. a. What is DNS and what is it used for? If all DNS servers could be "crashed" [3]

(taken offline), what would happen to the Internet (be precise).

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

Q4. a. How long does it take a packet of length 1000 bytes to propagate over a link of distance 2,500 km, propagation speed 2.5×10^8 m/s, and transmission rate 2 Mbps? More generally, how long does it take a packet of length L to propagate over a link of distance d, propagation speed s, and transmission rate R bps? Does this delay depend on packet length? Does this delay depend on transmission rate? [3]

b. What is the difference between centralized P2P network and de centralized P2P network? [2]

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

a. Conditional-GET
b. Connection establishment of TCP protocol.
c. Stop and wait ARQ.

----------xxxxxxxx----------