Roll No. ☐☐☐☐☐☐☐☐☐☐☐   **Total No. of Pages : 02**

Total No. of Questions : 18

B.Tech.(CSE)/(IT) (2012 to 2017)   (Sem.–4)
COMPUTER NETWORKS-I
Subject Code : BTCS-403
M.Code : 56606

Time : 3 Hrs.   **Max. Marks : 60**

INSTRUCTION TO CANDIDATES :
1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt ANY FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt ANY TWO questions.**

SECTION-A

Answer briefly :

1. What are the various types of computer networks?

2. How is ISO-OSI model different from TCP/IP model?

3. Why do we use ALOHA protocol?

4. What is a Domain Name System (DNS)?

5. What is the difference between Intranet and Internet?

6. What is WWW?

7. Which protocol is used behind Email?

8. Why do we use sliding window protocols?

9. Write the Nyquist formula.

10. What is the difference between attenuation and distortion?

SECTION-B

11. Explain the Binary Exponential Back off algorithm.

12. Write a short note on Go-back N ARQ protocol.

13. Explain leaky bucket and token bucket algorithms.

14. Justify the role of congestion control at network layer and various approaches used in it.

15. Write a short note on :

   a) Twister Pair

   b) Coaxial Cable

   c) Fiber optics.

SECTION-C

16. A 2 km long broadcast LAN has 10^7 bps bandwidth and uses CSMA/CD. The signal travels along the wire at 2×10^8 m/s. What is the minimum packet size that can be used on this network?

17. Consider an instance of TCP's Additive Increase Multiplicative Decrease (AIMD) algorithm where the window size at the start of the slow start phase is 2 MSS and the threshold at the start of the first transmission is 8 MSS. Assume that a timeout occurs during the fifth transmission. Find the congestion window size at the end of the tenth transmission.

18. Explain the idea of Digital Signature in terms of network security using any real life example. Justify properly.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.