Reg No.:_____          Name:_____

## APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
### FIFTH SEMESTER B.TECH DEGREE EXAMINATION(S), MAY 2019

**Course Code: IT307**
**Course Name: Computer Networks**

Max. Marks: 100                                                    Duration: 3 Hours

### PART A
*Answer any two full questions, each carries 15 marks.*                Marks

1  a) Explain the concepts of Computer Networks and its applications.          (3)

   b) How is CRC computed? Data link layer protocols usually put CRC in the trailer of the          (8)
      frame rather than in the header. Why?

   c) Briefly describe different Network Topologies.          (4)

2  a) Illustrate Go-back-n and Selective-Repeat Sliding Window protocols. Even though Go-          (8)
      back-n Sliding Window protocol is considered inefficient, why is it still used sometimes?

   b) Compare the functionalities of Routers and Switches.          (3)

   c) Write short notes on Radio and Microwave transmission.          (4)

3  a) Describe a brief introduction to Guided Transmission Media.          (7)

   b) What is the need for framing? What are the various methods used for framing?          (8)

### PART B
*Answer any two full questions, each carries 15 marks.*

4  a) Explain Carrier Sense Multiple Access protocols and its types.          (6)

   b) Prove that Slotted ALOHA gives better throughput than pure ALOHA.          (6)

   c) What is meant by Optimality principle?          (3)

5  a) Differentiate between Distance Vector and Link State Routing Algorithms.          (8)

   b) Explain Binary Exponential Back Off Algorithm.          (3)

   c) Why is Random early detection not suitable for wireless networks?          (4)

6  a) Explain the relevance of Token Bucket Algorithm.          (5)

   b) Write notes on Ethernet Frame format and its working principle.          (5)

   c) Why is *flooding* sometimes used as a metric against which other routing algorithms are          (5)
      compared? Give 3 distinct applications of flooding.

## PART C
### *Answer any two full questions, each carries 20 marks.*

7  a)  Explain DNS and its implementation. (8)

   b)  Explain how Remote Procedure Call works. ( 7)

   c)  Explain various P2P File sharing Architectures. (5)

8  a)  Differentiate between Persistent and non-persistent Connections in HTTP. (5)

   b)  Why does the computation of UDP checksum involve a violation of layering principles? (6)

   c)  Describe the TCP header format. Give one example for the application of each flag. (9)

9  a)  Describe the concept of FTP and its implementation. (7)

   b)  Write short notes on Berkley Sockets API functions. (5)

   c)  Differentiate among SMTP, POP3 and IMAP protocols. (8)

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