Birla Institute of Technology & Science, Pilani

Second Semester: 2016-17

Mid-Semester Test (Regular)

Closed Book

Course No.: CS F 303		**Maximum Marks: 60**
Course Title: Computer Networks		**Weight: 20%**
Date: March 6, 2017	**Starting Time: 0900 Hrs.**	**Duration: 90 Minutes**

1. *Why do we need Network Protocols when it is possible to communicate between two computers having no specialized networking hardware (like Network Adapter or NIC chip) by directly interconnecting them through their serial ports (like RS 232 ports)?* 05

2. *What is the difference between a Protocol Graph, Protocol Stack and Protocol Family/Suite? Which one of these has an ability to most precisely depict relationship(s) between various application level, transport level and network level protocols, particularly for the application level protocols like DNS and why?* 03+02=05

3. *What are the five most significant types of delays related to network based communication between two hosts communication over the Internet? Please list them in the order of their significance (highest to lowest).* 01x5=05

4. *What are the most significant differences between HTTP/2 and its earlier version? What are the consequences of these differences? Please provide only five differences and their respective consequences in a tabular form.* 01x5 + 02x5 = 15

5. *Consider two computers, one located inside your campus at Pilani as part of the Institute Intranet and the other located in a moving car moving along a National Highway somewhere in Western India. If both of these computers need to interconnect to each other via the Internet and permit their users to have web-based interactive exchanges, which protocols studied by you so far would be required to be used, in addition to various underlying transport, network and lower layer protocols and why? (Hint: You shall need an IP address at each end, some support for name resolution, some way of handling web-based exchanges etc. Please ignore the physical and link level details except for the fact that one computer may be connected either through wireless or without it but the other computer is more likely to be connecting to the Internet wirelessly.)* 01x5 + 02x5 = 15

6. *What are the five most significant issues (more might exist) that you could notice in the Stop-and-Wait variant of the Transport Protocol that we evolved in the class for allowing transport between two remotely connected Hosts? What solutions would you wish to recommend to help resolve each of such identified issues and why?* (01+01+01)x5=15