No. of Printed Pages : 3

CS-68

BACHELOR OF COMPUTER APPLICATIONS

(Pre-Revised)

00764

Term-End Examination

December, 2014

CS-68 : COMPUTER NETWORKS

Time : 2 hours *Maximum Marks : 60*

Note : *Question number **1** is **compulsory**. Answer any **three** questions from the rest.*

1. (a) List the relative advantages and disadvantages of asynchronous and synchronous modes of data communication. *4*

(b) A communication system uses an 8-bit converter at exactly the Nyquist rate for signals with 30 KHz bandwidth. Calculate the bit rate at the output. *4*

(c) What are the disadvantages of circuit switching ? Explain how these problems are solved by packet switching. *5*

(d) Write the significance of TTL in IP Header. Also, explain what happens if it reaches zero. *4*

(e) Write any three differences between token passing access methods and CSMA/CD method. Also, explain how can a collision be avoided in a CSMA/CD network. *6*

(f) Differentiate between bit rate, baud rate and bandwidth. When is the baud rate equal to bit rate ? *4*

(g) Compare coaxial cable with twisted pair cable in terms of bandwidth, cost and attenuation. *3*

2. (a) Explain the flow control mechanism of 'stop-and-wait' and 'sliding-window'. Discuss how 'damaged frame' and 'lost frame' situations are handled by each mechanism. *6*

(b) Explain the TCP connection establishment in normal case and in the case of call collision. *4*

3. (a) Assume that a system uses 9600 bps channel for sending call setup request to a base station. Suppose packets are 12 bytes long and the time out is 40 ms. What is the maximum throughput possible with Aloha and with Slotted Aloha ? *8*

(b) Differentiate between FDM and TDM. *2*

4. (a) Compare and contrast between Routers, Gateways and Bridges. Also, specify the OSI layers at which they operate. *6*

(b) Explain the process of fragmentation at network layer with the help of an example. *4*

5. (a) Describe the functions of OSI layers above the network layer. *6*

(b) Explain the concept of Permanent virtual circuit and Switched virtual circuit, used in ATM networks. *4*
