Q.P.

Sardar Patel Institute of Technology

Bhavan's Campus, Munshi Nagar, Andheri (West), Mumbai-400058, India

(Autonomous College Affiliated to University of Mumbai)

Mid Semester Examination

24 Aug 2017

Max. Marks: 30 | Duration: 90 Min

Class: T.E. | Semester: V

Course Code: CPC504 | Branch: Computers

Name of the Course: Computer Networks

Instruction:

(1) All questions are compulsory

(2) Draw neat diagrams

(3) Assume suitable data if necessary

Q No.	Question	Max. Marks	CO
Q.1(a)	List the functionalities of any five layers in the OSI reference model.	05	CO1
Q.1(b)	Explain Mesh topology in detail along with advantages and disadvantages.	05	CO1
Q.2 (a)	Why insulated conductors are twisted with each other in the twisted pair cable ? Why Optical Fibre Cable needs less number of repeaters ?	05	CO2
Q.2 (b)	What is Bluetooth ? Explain the types of network architectures in the bluetooth ?	05	CO2
Q.3 (a)	If dataword is 1110 then deduct the required number of parity bit and corresponding codeword using Hamming Code with even parity. OR If a message is represented as M(x)= $x^3 + x^2 + 1$ and generator is represented as G(x)=$x^3 + x + 1$ then calculate the 7-bit codeword using Cyclic Redundancy Check.	05 05	CO2 CO2
Q.3 (b)	Derive relationship between efficiency and length of packet in Stop and Wait protocol. For the given network required efficiency of the Stop and Wait protocol is 0.65 then what should be the packet size if propagation delay of the channel is 40 msec and bandwidth is 8 Mbps ? What is the effective bandwidth of the channel ? OR In a sliding window protocol where propagation delay is 198 msec and transmission delay is 4 msec what is the minimum number of the required sequence number? How many bits will be needed for representing sequence number ? What will happen if we use 4-bit to represent the sequence the number?	05 05	CO2 CO2