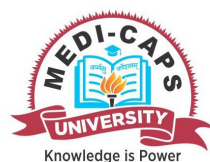Enrollment No......................................

Faculty of Engineering
End Sem (Even) Examination May-2018
CS2CO05 Computer Networks

Programme: Diploma   Branch/Specialisation: CSE

Duration: 3 Hrs.   **Maximum Marks: 60**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

Q.1 i.   A Computer Network permits sharing of   **1**
          (a) Resources   (b) Information
          (c) Both (a) and (b)   (d) None of these

    ii.   MAN stands for   **1**
          (a) Machine area network
          (b) Metropolitan area network
          (c) Metropolitan asynchronous network
          (d) Machine asynchronous network

    iii. In this topology there is a central controller or hub   **1**
          (a) Star   (b) Mesh   (c) Ring   (d) Bus

    iv. Bridge works in which layer of the OSI model?   **1**
          (a) Application layer   (b) Transport layer
          (c) Network layer   (d) Datalink layer

    v.   Which transmission media has the highest transmission speed in a network?   **1**
          (a) Coaxial cable   (b) Twisted pair cable
          (c) Optical fibre   (d) Electrical cable

    vi. Transmission media are categorized as   **1**
          (a) Fixed or unfixed
          (b) Guided or unguided
          (c) Deterministic or nondeterministic
          (d) Metallic or non-metallic

    vii. The end-to-end delivery of the entire message is the responsibility of the _____ layer.   **1**
          (a) Transport   (b) Session   (c) Presentation (d) Application

    viii. Which of the following OSI layers correspond to TCP/IP's application layer?   **1**
          (a) Application (b) Presentation (c) Session   (d) All of these

    ix. Which of the transport layer protocols is connection-less?   **1**
          (a) UDP   (b) TCP   (c) FTP   (d) None of these

    x.   Which of the following IP address class is Multicast?   **1**
          (a) Class A   (b) Class B   (c) Class C   (d) Class D

Q.2 i.   Explain file sharing and printer sharing.   **4**
    ii.   Distinguish between LAN, MAN and WAN.   **6**
OR iii. Explain the centralized management of software, maintenance and data backup.   **6**

Q.3 i.   Assume six devices are arranged in a mesh topology. How many cables are needed to connect the devices?   **2**
    ii.   What is meant by topology? Explain any four topologies of a computer network.   **8**
OR iii. Describe any four network control devices in brief.   **8**

Q.4 i.   What are the three major types of guided media?   **3**
    ii.   Explain the different propagation modes of fibre optic cable.   **7**
OR iii. Explain satellite communication with the help of neat diagram.   **7**

Q.5 i.   What is the difference between a physical address and a logical address?   **2**
    ii.   Explain OSI reference model with its layered architecture.   **8**
OR iii. Explain TCP/IP model with neat diagram.   **8**

Q.6 i.   What is the purpose of address resolution protocol (ARP)?   **2**
    ii.   Compare SLIP and PPP protocols.   **3**
    iii. Explain: **5**
          (a) Subnet Mask   (b) ICMP Protocol
OR iv. Explain different classes of IP address.   **5**

******

Marking Scheme
CS2CO05 Computer Networks

Q.1   i.   A computer network permits sharing of   **1**
(c) Both (a) & (b)

ii.   MAN stands for   **1**
(b) Metropolitan area network

iii.   In this topology there is a central controller or hub   **1**
(a) Star

iv.   Bridge works in which layer of the OSI model?   **1**
(d) Data link layer

v.   Which transmission media has the highest transmission speed in a network?   **1**
(c) Optical fibre

vi.   Transmission media are categorized as   **1**
(b) guided or unguided

vii.   The end-to-end delivery of the entire message is the responsibility of the---------------layer   **1**
(a) Transport

viii.   Which of the following OSI layers correspond to TCP/IP's application layer?   **1**
(d) All of the above

ix.   Which of the transport layer protocols is connection-less?   **1**
(a) UDP

x.   Which of the following IP address class is Multicast?   **1**
(d) Class D

Q.2   i.   File sharing any two points: 1 mark each (1 mark * 2)   -2 marks   **4**
Printer sharing any two points: 1 mark each (1 mark * 3)   -2 marks

ii.   Any six differences between LAN, MAN and WAN: each difference of 1 mark   **6**
(1 mark * 6)   - 6 marks

OR   iii.   Centralized management of software, maintenance and data backup each of 2 marks   **6**
(2 mark * 3)   - 6 marks

Q.3   i.   In mesh topology number of cables required to connect n devices = (n*(n-1))/2.   **2**
For n-6 number of cables required is (6*(6-1))/2-15
Correct Formula   - 1 mark
Correct Answer   - 1 mark

ii.   Definition of topology   - 2 marks   **8**
6 Topologies (Mesh, Star, Tree, Bus, Ring and Hybrid):
1 mark each (1 mark * 6)   - 6 marks

OR   iii.   Network control devices (Repeater, Hub, Bridge, Switch, Router, gateway, Modem) any four   **8**
2 marks each (2 mark * 4)   - 8 marks

Q.4   i.   Three guided media (twisted pair, coaxial cable and fibre optic cable) each of 1 mark   **3**
(1 mark * 3)   - 3 marks

ii.   Propagation mode definition: - 1 mark   **7**
Propagation mode (Multimode: graded index and step index) :
1 mark for diagram and 1 mark for explanation
(2 mark * 2)   - 4 marks
Propagation mode (Single mode):
1 mark for diagram and 1 mark for explanation
(1 mark * 2)   - 2 marks

OR   iii.   Satellite communication diagram: - 2 Marks   **7**
Any five points: 1 mark each (1 mark *5)   - 5 marks

Q.5   i.   Any two differences between logical and physical address: each of 1 mark   **2**
(1 mark * 2)   - 2 marks

ii.   OSI reference model structure   - 1 mark   **8**
Seven layers: 1 mark each
(1 mark * 7)   - 7 marks

OR   iii.   TCP/IP model definition   -1 mark   **8**
Diagram   - 1 mark
Four layers: each of 1.5 mark
(1.5 mark *4)   - 6 marks

Q.6	i.	Address resolution protocol(ARP) purpose any two points each of 1 mark	**2**
		(1 mark * 2) - 2 marks	
	ii.	SLIP and PPP Protocols any three points: 1 mark each	**3**
		(1 mark * 3) - 3 marks	
	iii.	Why we use : 2.5 marks each	**5**
		(2.5 mark *2) - 5 marks	
OR	iv.	IP address five classes (A, B C, D & E): 1 mark each	**5**
		(1 mark * 5) - 5 marks	

*****