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SARDAR PATEL UNIVERSITY
M.Sc.(Electronics) III Semester Examination (CBCS)
Wednesday, 5ᵗʰ December, 2012 Time : 2.30 PM to 5.30 PM
PS03CELE03 – Computer Hardware & Networking

TOTAL MARKS : 70

Note : 1. Answer of all the questions including multiple choice questions should be
written in the provided answer book only.
2. Figure to the right indicates maximum marks for the question.

Q.1	Multiple choice questions : One mark each	[8]
a.	When the CPU performs a read operation, it first checks to see if the data or instruction it requests is in the _____. 1.Hard disk 2. Floppy Disk 3. System Memory 4. CACHE	
b.	A _____ topology consists of a main run of cable with a terminator at each end. 1.Star 2.Tree 3. Linear BUS 4. Wireless	
c.	RJ-45 Connector is used in _____ Network. 1.10Base2 2. 10BaseT 3.10BaseFX 4. None of above	
d.	On an Ethernet Network, every data frame consists of _____ bytes. 1.1500 2. 2000 3. 3000 4. 4000	
e.	Hub is located at _____ layer of OSI reference model. 1.Physical 2. Data-link 3. Network 4. Transport	
f.	The _____ address is a Data Link Layer address hard-coded to each network card at the manufacturer. 1.Ethernet 2. MAC 3. IP 4. Port	
g.	Windows 2003 Standard Edition supports symmetric multiprocessing with up to _____ processors. 1.Two 2. Four 3. Six 4. Eight	
h.	_____ edition of Windows 2003 Server operating system does not support Cluster service. 1.Standard 2. Enterprise 2. Web 4. Data-Centre	

Q.2	Short questions : Attempt any seven (2 Marks each)	[14]
i.	List four main components of BIOS.	
ii.	What is a CACHE and its function in Computer System?	
iii.	What is the key difference between Physical and Logical Topology of Computer network?	
iv.	Draw straight through connection of STP/UTP cable with RJ-45 connector with necessary electrical signals.	
v.	What is called Symmetric Multiprocessing?	
vi.	Draw the structure of IEEE 802.3 Ethernet Frame.	
vii	Mention the name of four problems the Hub experience during network traffic?	
viii	Why TCP (Transmission Control Protocol) is a Fixed connection Protocol?	

Q.3(a)	With the help of necessary diagram discuss North Bridge and South Bridge components of Computer Motherboard	[7]
(b)	With the help of necessary diagram discuss SMPS in a Computer System.	[5]
	OR	
(b)	With the help of necessary diagrams, discuss Client-Server and Peer-to-Peer Network.	[5]
Q.4(a)	What is called Topology? Discuss **any three** network topology with necessary diagrams.	[6]
(b)	Discuss IPV4 Address and Classes. Also, discuss network where computers are connected in two separate Ethernet networks that are joined by a router.	[6]
	OR	
(b)	Discuss the various functions network adaptor/interface card (NIC) is performing in computer system for sending and receiving data.	[6]
Q.5(a)	Distinguish Wired and Wireless network. Draw the structure of **IEEE 802.11** Frame structure and explain it. Also discuss various type of antenna utilized in Wireless network.	[6]
(b)	Draw OSI Reference model and explain function of each layer to move data between computer systems.	[6]
	OR	
(b)	Discuss TCP/IP Protocol in terms of addressing, interoperability, naming and routing.	[6]
Q.6(a)	Discuss Windows 2003 Enterprise Edition in terms of Minimum Hardware Requirement, File Management, Multiprocessing /Multitasking / Multithreading, Application Support and Security features.	[6]
(b)	Discuss Workgroup, Domain and Active Directory Concept in Server Operating System.	[6]
	OR	
(b)	Briefly discuss : **a**. Domain Tree **b**. Trust relationship and, **c**. Forest in Active Directory structure.	[6]

*** BEST LUCK ***