ROLL NO.

Subject: DATA COMMUNICATION & NET Code: DE69/DC63

Diplete - ET/CS

Time: 3 Hours

DECEMBER 2012

Student Bounty Com PLEASE WRITE YOUR ROLL NO. AT THE SPACE PROVIDED ON EACH PAGE IMMEDIATELY AFTER RECEIVING THE QUESTION PAPER.

NOTE: There are 9 Questions in all.

- Question 1 is compulsory and carries 20 marks. Answer to Q.1 must be written in the space provided for it in the answer book supplied and nowhere else.
- The answer sheet for the O.1 will be collected by the invigilator after 45 minutes of the commencement of the examination.
- Out of the remaining EIGHT Questions answer any FIVE Questions. Each question carries 16 marks.

Q.1	Choose the correct or the best alternative in the following: $(2\times10^{\circ})$ a. LAN stands for:				
	(A) Wide Area Network(C) Wireless Network	(B) Local Area Network(D) Wideband Networks			
	b. Flooding technique requires no	·			
	(A) Information(B) Network Information(C) Fixed Data Information(D) Variable data Information				
	c. The TCP/IP model organizes the communication task into following relatively independent layer.				
	(A) 5 (C) 9	(B) 7 (D) 6			
	d. In data transmission system, the transmission medium is the Physical Path between				
	(A) Transmitter and Receiver(C) Receiver and Receiver	(B) Transmitter and Transmitter(D) Receiver and Transmitter			
	e. Frequency in the Range of about 2 GHz to 40 GHz are referred to as				
	(A) VLF (C) ULF	(B) Microwave Frequency(D) HF			

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	f.	NRZI is an example of		OHITE	
		(A) NRZ-L(C) Differential encoding	(B) Bipolar AMI(D) Manchester	NOON & NET TOOLING COM	
	g. The most common form of FSK is				
		(A) Binary(C) Binary FSK	(B) BPSK (D) BPSK of BASK	I	
	h. Quardrature Amplitude Modulation (QAM) can also be considered a Logical extension of				
		(A) Sampling (C) DM	(B) ASK (D) QPSK		
	i. SMTP Standardizes the message character set as:				
		(A) 7-bit BCD (C) 7-bit ASCII	(B) 7-bit Binary(D) 8-bit ASCII		
	j. The Secure Hash Algorithm (SHA) was developed by :				
		(A) HFRC (C) OWHF	(B) NIST (D) MACC		
			ctions out of EIGHT Question carries 16 marks.	ns.	
Q.2	a.	Explain Data Communication Networking. Differentiate between Circuit Switching and Packet Switching technologies. (8)			
	 b. What do you mean by TCP/IP? Briefly write functionalities of different layers in TCP/IP Architecture. 				
Q.3	a.	 a. What do you mean by Channel Capacity? Briefly explain Shannon Capacity formula. 			
	b.	Briefly explain three guided transmission.	l transmission media comme	only used for data (6)	
	c.	What is Antenna gain? Expla	in how it is related to effective	e area. (4)	
Q.4	a.	Write short-notes on :- (i) Stop-and-Wait Flow Control (ii) Sliding- Window Flow Co		(8)	
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- b. Explain the basic characteristics of high-level Data Link Control (HDLC). (8)
- Q.5 a. Explain four generic architectural components of a public telecommunication network. (8)
 - b. Briefly describe four key routing strategies: Fixed, Flooding, Random and Adaptive. (8)
- Q.6 a. Explain in detail the key elements of a LAN Topology, Transmission Medium,Wiring Layout and Medium Access control. (8)
 - b. What is the purpose of IEEE-802 Reference model? Explain IEEE-802 Protocol layers compared to OSI model. (8)
- Q.7 a. What is Internet Protocol? Also explain various IP Address Classes. (8)
 - b. Describe Internet Group Management Protocol (IGMP) and IGMP message format. (8)
- Q.8 a. Explain Cyclic Redundancy Check (CRC) code used for error detection. Use a suitable example.(8)
 - b. Explain two techniques B8ZS and HDB3, commonly used in long- distance transmission services. (8)
- Q.9 Explain in detail any <u>TWO</u> of the following: (8×2)
 - (i) Electronic Mail SMTP and MIME
 - (ii) HOP-by-HOP options Header
 - (iii) Multicasting