

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**DIPLOMA ENGINEERING – SEMESTER – IV-EXAMINATION – WINTER 2015**

**Subject Code: 3341601****Date: 17/12/2015****Subject Name: Information Communication Technology****Time: 02:30 PM TO 5:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make Suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Use of programmable & Communication aids are strictly prohibited.
5. Use of only simple calculator is permitted in Mathematics.
6. English version is authentic.

**Q.1**

Answer any seven out of ten. દશમાંથી કોઈપણ સાતના જવાબ આપો.

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1. List name of four ICT models.
૧. ICT ના ચાર મોડેલ ની યાદી આપો.
2. State two advantages of Digital communication over Analog communication.
૨. Digital communication ના બે ફાયદા Analog communication ના સાપેક્ષ માં લખો.
3. State two advantages of Bus topology over star topology.
૩. Bus topology ના બે ફાયદા star topology ના સાપેક્ષ માં લખો.
4. Define the term channel & Bandwidth.
૪. વ્યાખ્યા આપો channel અને Bandwidth ની.
5. State two functions of transport layer of OSI model.
૫. OSI Model ની transport layer ના બે ફંક્શન જણાવો.
6. What are the advantages of fiber optic over copper as a transmission medium?
૬. transmission medium માં fiber optic ના બે ફાયદા copper ના સાપેક્ષ માં લખો.
7. Convert the IP address whose hexadecimal representation is C22F1582 to dotted decimal notation.
૭. IP address C22F1582 hexadecimal માં થી dotted decimal માં રૂપાંતરિત કરો.
8. Give two examples of computer applications for which connection oriented service is appropriate.
૮. બે computer application ના ઉદાહરણ આપો જેમાં connection oriented service વપરાતી હોય.
9. Describe congestion in data transportation.
૯. Data transportation માં congestion વર્ણવો.
10. Define multiplexing. Give its type.
૧૦. Multiplexing ની વ્યાખ્યા જણાવો. એના ટાઇપ જણાવો.

<b>Q.2</b>	(a)	Compare Asynchronous vs. synchronous communication.	<b>03</b>
<b>પ્રશ્ન. ૨</b>	(અ)	Asynchronous અને synchronous ને સરખાઓ.	<b>03</b>
		OR	
	(a)	Compare parallel vs. serial communication.	<b>03</b>
	(અ)	parallel અને serial communication ને સરખાઓ.	<b>03</b>
	(b)	List different network topologies explain any one.	<b>03</b>
	(બ)	network topologies ની યાદી બનાવો અને કોઈ એક સમજાવો.	<b>03</b>
		OR	
	(b)	List different types of computer network explain any one.	<b>03</b>
	(બ)	computer network ની યાદી બનાવો અને કોઈ એક સમજાવો.	<b>03</b>
	(c)	What is modulation? Explain amplitude modulation.	<b>04</b>
	(ક)	Modulation શું છે? અને amplitude modulation સમજાવો.	<b>04</b>
		OR	
	(c)	What is need of modulation? Explain Frequency modulation.	<b>04</b>
	(ક)	Modulation ની જરૂરિયાત જણાવો. Frequency modulation સમજાવો.	<b>04</b>
	(d)	Compare circuit switching with packet switching.	<b>04</b>
	(ડ)	circuit switching અને packet switching ને સરખાવો.	<b>04</b>
		OR	
	(d)	Compare OSI model with TCP/IP model.	<b>04</b>
	(ડ)	OSI model અને TCP/IP model ને સરખાવો.	<b>04</b>
<b>Q.3</b>	(a)	Write short note: Asynchronous Transfer Mode (ATM).	<b>03</b>
<b>પ્રશ્ન. ૩</b>	(અ)	Asynchronous Transfer Mode (ATM) ની ટૂંક નોંધ લખો.	<b>03</b>
		OR	
	(a)	Write short note: X.25 packet switching network.	<b>03</b>
	(અ)	X.25 packet switching network ની ટૂંક નોંધ લખો.	<b>03</b>
	(b)	Explain co-axial cable.	<b>03</b>
	(બ)	co-axial cable સમજાવો.	<b>03</b>
		OR	
	(b)	Explain twisted pair cable.	<b>03</b>
	(બ)	twisted pair cable સમજાવો.	<b>03</b>
	(c)	What is multiplexing? Explain Frequency Division Multiplexing.	<b>04</b>
	(ક)	Multiplexing શું છે? Frequency Division Multiplexing સમજાવો.	<b>04</b>
		OR	
	(c)	Explain Orthogonal Frequency Division Multiplexing (OFDM).	<b>04</b>
	(ક)	Orthogonal Frequency Division Multiplexing (OFDM) સમજાવો.	<b>04</b>
	(d)	Write short note: Router	<b>04</b>
	(ડ)	Router ની ટૂંક નોંધ લખો.	<b>04</b>
		OR	
	(d)	Write short note: IEEE standards.	<b>04</b>
	(ડ)	IEEE standards ની ટૂંક નોંધ લખો.	<b>04</b>
<b>Q.4</b>	(a)	Explain Hexadecimal colon notation of IP address in IPV6.	<b>03</b>
<b>પ્રશ્ન. ૪</b>	(અ)	IPV6 માં IP Address ની Hexadecimal colon notation સમજાવો.	<b>03</b>
		OR	

	(a)	Explain IP address scheme of IPV4.	03
	(અ)	IPV4 ની IP address scheme સમજાઓ.	03
	(b)	Explain advantages of IPV6 addressing scheme.	04
	(બ)	IPV6 addressing scheme ની ફાયદાઓ સમજાઓ.	04
		OR	
	(b)	Compare IPV4 with IPV6.	04
	(બ)	IPV4 અને IPV6 ને સરખાઓ.	04
	(c)	Explain closed loop congestion control mechanism.	07
	(ક)	closed loop congestion control mechanism સમજાઓ.	07
<b>Q.5</b>	(a)	Explain Domain Name System (DNS).	04
<b>પ્રશ્ન. ૫</b>	(અ)	Domain Name System (DNS) સમજાઓ.	04
	(b)	Explain Network Address Translation (NAT).	04
	(બ)	Network Address Translation (NAT) સમજાઓ.	04
	(c)	Explain subnetting in IP addressing.	03
	(ક)	IP addressing માં subnetting સમજાઓ.	03
	(d)	Briefly explain Address Resolution Protocol(ARP) of data link layer.	03
	(ડ)	Data link layer ની Address Resolution Protocol(ARP) ને ટૂંક માં સમજાઓ.	03

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