	Uttech
Name:	(4)
Roll No.:	The Description and Explored
Invigilator's Signature :	

### CS/B.Tech(BT)/SEM-8/ID-814A/2013 2013

# INFORMATION TECHNOLOGY/ARTIFICIAL **INTELLIGENCE**

Time Allotted: 3 Hours Full Marks: 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

#### **GROUP - A**

### ( Multiple Choice Type Questions )

 $10 \times 1 = 10$ 

i) In TCP/IP, there are ...... layers.

Choose the correct alternatives for the following:

a) 7

1.

b) 3

c) 5

- none of these. d)
- ii) The process to process communication is done in
  - a) application layer
- b) session layer
- transportation layer c)
- d) presentation layer.
- iii) A modem does which of the following jobs?
  - Only modulation a)
  - Only demodulation b)
  - Both modulation and demodulation c)
  - d) None of these.

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iv)	Whe	en a host knows its phy	ysica	l address but not its IP	
	address it can use				
	a)	ICMP	b)	IGMP	
	c)	ARP	d)	RARP.	
v)	Whi	ch of the following	pro	perties is known as	
	(A + B) = (B + C)?				
	a)	Associative law	b)	Idempotent law	
	c)	Communitative law	d)	Distributive law.	
vi)	In IPv6 how many bits are used to represent an address?				
	a)	64	b)	128	
	c)	16	d)	32.	
vii)	Layer provides Physical addressing.				
	a)	Physical	b)	Network	
	c)	Application	d)	Data Link.	
viii)	Which of the following is not a basic gate?				
	a)	AND gate	b)	OR gate	
	c)	NOT gate	d)	XOR gate.	
ix)	FTP server uses the port number				
	a)	80	b)	23	
	c)	21	d)	56.	
x)	A firewell is				
	a) used to protect a computer room from fires a floods				
	b)	a form of virus			
	c) a screen saver program				
	d)	none of these.			



#### **GROUP - B**

### ( Short Answer Type Questions )

Answer any *three* of the following.



- 2. What do you mean by LAN Topology? Explain in brief.
- 3. What is the difference between ASK an FSK?
- 4. Describe the block coding.
- 5. Describe stop-and-wait ARQ.
- 6. Construct XOR gate using minimum number of NAND gates and also with minimum number of NOR gates. Explain with proper diagram.

#### **GROUP - C**

#### (Long Answer Type Questions)

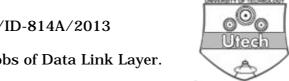
Answer any *three* of the following.  $3 \times 15 = 45$ 

- 7. a) What is the difference between classful addressing and classless addressing?
  - b) An address is given as 200.11.8.45. Describe the meaning of each squad of the said address.
  - c) Write the advantages of IPv6 over IPv4.
  - d) Convert to corresponding decimal number from  $(101101)_2$
  - e) Explain CSMA.

$$3 + 3 + 3 + 3 + 3$$

- 8. a) Briefly explain the modes of data communications in a network.
  - b) Write down Checksum technique for error detection.
  - c) Write down the advantages of fibre optic cable over twisted pair and coaxial cables.
  - d) Encode the following bits using NRZ-I, NRZ-I and RZ technique (10011011). 2+4+4+5

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- 9. a) Explain the jobs of Data Link Layer.
  - b) Explain Hamming Code technique for single bit error correction.
  - c) Write down CRC technique for error detection with example. 3 + 6 + 6
- 10. a) Explain Manchester Line coding technique.
  - b) Explain the states for Analog to Digital signal conversion.
  - c) What are the different connecting devices in a network? Explain briefly.
  - d) Explain why we are using both Physical address and IP address for Data Communication with example.

$$3 + 6 + 3 + 3$$

- 11. Write short notes on any *three* of the following :  $3 \times 5$ 
  - a) TDM im multiplexing
  - b) Go-Back-N-ARQ
  - c) CSMA
  - d) Distributed Database
  - e) HTTP, FTP, Telnet, SMTP and POP3 protocols.

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