[Time: 3 Hours]   **[Marks:80]**

N.B

(1) **Question no. 1 is compulsory.**

(2) **Attempt any 3 from the remaining questions.**

(3) **Assume suitable data if necessary.**

(4) **Figures to right indicate full marks.**

			Marks
Q.1		**Attempt any four of the following**	
	a)	What is subnetting? Compare subnetting and supernetting	[5]
	b)	What are three reasons for using layered protocols? What is two possible disadvantages of using layered protocols?	[5]
	c)	Explain the count to infinity problem in detail.	[5]
	d)	List two ways in which the OSI reference model and the TCP/IP reference model are the same. Now list two ways in which they differ.	[5]
	e)	4-bit data bits with binary value 1010 is to be encoded using even parity Hamming code. What is the binary value after encoding?	[5]

Q.2   **Attempt the following**

a) Define guided transmission media? Illustrate with diagram the details for coaxial   [10]
cable? State any 5 comparative characteristics of coaxial cable with fiber optics
and twisted pair cables.

b) Explain how collision handled in CSMA/CD? A 5 km long broadcast LAN uses   [10]
CSMA has 10^7 bps bandwidth and uses CSMA/CD. The signal travels along the
wire at 5×10^8 m/s. What is the minimum packet size that can be used on this
network?

Q.3   **Attempt the following**

a) An organization has granted a block of addresses starting with 105.8.71.0/24,   [10]
organization wanted to distribute this block to 11 subnets as follows
1. First Group has 3 medium size businesses, each need 16 addresses
2. The second Group has 4 medium size businesses, each need 32
addresses.
3. The third Group has 4 households, each need 4 addresses. Design the
sub blocks and give slash notation for each subblock. Find how many
addresses have been left after this allocation.

b) Explain classful IP addressing scheme in detail? List the advantages and   [10]
disadvantages of classless IP addressing scheme.

Q.4   **Attempt the following**

    a)   Explain the open loop congestion control and closed loop congestion control   [10]
policies in detail

    b)   Explain the TCP connection establishment and Connection release.   [10]

Q.5   **Attempt the following**

    a)   Explain the concept of sliding protocol? Explain the selective repeat protocol with   [10]
example? Compare the performance of Selective repeat & Go-back-N protocol.

    b)   Explain the link state routing algorithm with example?   [10]

Q.6   **Write a short note on following**

    a)   ARP & RARP   [10]

    b)   DNS   [10]

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Duration: 3hrs   **[Max Marks:80]**

N.B. : (1) Question No 1 is Compulsory.
   (2) Attempt any three questions out of the remaining five.
   (3) All questions carry equal marks.
   (4) Assume suitable data, if required and state it clearly.

1		Attempt any **FOUR**	**[20]**
	a	State features of React js.	
	b	What is DTD? Explain internal DTD and external DTD.	
	c	Give characteristics of RIA	
	d	What is session tracking? Show how session tracking is achieved using cookies.	
	e	Differentiate between JSON and XML	
2	a	What is JSX? Explain its attributes with example.	**[10]**
	b	Explain any 5 semantic tags of HTML5 with example	**[10]**
3	a	Write a JavaScript that reads ten numbers and displays the count of negative numbers, the count of positive numbers and the count of zero from the list.	**[10]**
	b	What is JSP? Explain life cycle of JSP	**[10]**
4	a	Explain the event handling in JavaScript with suitable example.	**[10]**
	b	Explain CSS3 Animation with example.	**[10]**
5	a	Write short notes on JDBC	**[10]**
	b	What is HTTP? Describe structure of HTTP request and response message	**[10]**
6	a	Discuss about various control structures used in PHP. Give suitable example for each.	**[10]**
	b	What is AJAX? Explain its role in web application.	**[10]**

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