

## GRAPHICS AND MULTIMEDIA

### Assignment Questions

Sl. No	Assignment Questions
1	Consider the line from (0, 0) to (-8,-4), use general Bresenham's & DDA line algorithm to rasterize this line. Evaluate and tabulate all the steps involved.
2	Consider the line from (3, 2) to (4, 7), use Bresenham's & DDA line algorithm to rasterize this line. Evaluate and tabulate all the steps involved.
3	Use the Cohen Sutherland algorithm to clip line P1 (70,20) and p2(100,10) against a window lower left hand corner (50,10) and upper right hand corner (80,40).
4	Convert the following RGB colour space to its HSI equivalent. R=240, G=220, B=150
5	Convert the following HSI colour space to its RGB equivalent H = 28°, S=59.46, I=123.
6	Calculate the required points to plot the following line using Bresenham's algorithm (30,18) -> (20,10)
7	Calculate the required points to plot the following circle using the midpoint circle algorithm Radius (r) = 10, Centre = (3, 4).
8	Calculate the pixel location approximating the first octant of a circle having center at (4,5) and radius 4 units using Bresenham's algorithm.
9	Rotate a triangle{(4,6), (2,2), (6,2)} about the vertex (4,6) by 180 degree CCW and find the new vertices.
10	Determine the blending functions for uniform period BSpline curve for n=4 and d=4.
11	Apply Cohen Sutherland line clipping algorithm to clip a line with end points (1,7) and (7,5) against a window boundaries xwmin = 2, xwmax=6, ywmin=2, ywmax=6.
12	Explain needs for quantization during transmission of audio.
13	How RTP with RTCP and RSVP are used for multimedia data transmission.
14	Explain different categories of multimedia software tools.
15	Write a short note LZW Compression and decompression.
16	Explain Bilevel image compression standards.
17	Explain similarity based retrieval in Image Databases.
18	Explain different broadcasting schemes for Video-On-Demand.
19	List the objects involved in MMS and describe various applications.
20	Explain object based visual coding and video bit streaming in MPEG 4.
21	Explain padding techniques used in motion compensation.
22	Explain hypermedia messaging concepts used in MMS.
23	Write about Hypermedia in Education.
24	Discuss about Audio, Video Databases.
25	Write a note on TV Tree.
26	Briefly explain about CCITT group standards.
27	What is ISDN? Explain Windows Telephony.
28	Explain Medical Applications related multimedia.
29	Draw an ellipse with major axis(2a)=16, Minor axis(2b)=12
30	Consider the line from (0, 0) to (-8,-4), use general Bresenham's & DDA line algorithm to rasterize this line. Evaluate and tabulate all the steps involved
31	Watermarking and authentication of multimedia documents.

## Object Oriented Analysis and Design

1. Explain in detail about the Unified process in object oriented Analysis and Design? Explain the phases with neat diagrams.
2. (i) Discuss about the Concepts of Component and Deployment Diagram  
(ii) Draw component and deployment diagrams for Book bank system.
3. A University conducts examinations and the results are announced. Prepare a report for the following:
  - Print the marks in the register number order semester wise for each department
  - Print the Arrear list semester wise.
  - Prepare a Rank list for each department.
  - Prepare the final aggregate mark list for final year students.Identify the problem statement and Design and Explain the classes for each sequence. Draw a detailed flow chart using state chart diagrams. Design this system using Rational Rose. Draw all the UML diagrams for designing this system.
4. (i) Describe in detail about the Class Diagram.  
(ii) What is use case Diagram? Model a use case diagram for a Banking System. Explain the business rules you are considering. b) Consider the following use Cases that play a role in the Banking System you have modeled: 1. Deposit 2. Withdraw Model sequence diagrams for the above two use cases.
5. Write a problem statement for Library Management System. Design the UML Use Case diagram, Activity diagram, Class diagram, Sequence diagram, State chart diagram, Package diagram, Component and Deployment diagram.
6. List the various UML diagram and examine the purpose of each diagram.
7. (i) Describe the UML notation for Class diagram with an example. Explain the concept of link, association and inheritance.  
(ii) Identify the major difference between sequence and collaboration diagram.
8. (i) Summarize with an example, how Interaction Diagram are used to model the dynamic aspects of a system.  
(ii) Discuss the topic on (i). Aggregation and Composition  
(ii). Generalization and Specialization.  
(iii). Attributes and Association
9. Illustrate about UML state machine diagram and Modeling (ii) A Library lends books and magazines to member, who is registered in the system. It also maintains the purchase of new books and magazines for the Library. A member can reserve a book or magazine that is not currently available in the library, so that when it is returned or purchased by the library, that person is notified. The library can easily create, replace and delete information about the books, members, and reservation in the system. The books transactions are stored in the database. The fine list while the member returns the book after the due date must be generated. Analyze and discover the users and actors of this system, and the interactions between them must be depicted.

10. (i) Describe in Detail about the Sequence Diagrams.  
(ii) Discuss in detail about the three types of different perspectives.  
(iii) Give the three ways to apply Unified Modeling Language (UML).
11. (i) What is UML activity diagram? Using an example point out the features of basic UML activity diagram notation.  
(ii) Draw and explain the Sequence and collaboration diagram for an Online Purchase System.
12. (i) Explain with an example, how use case modeling is used to describe functional requirements, Identify the actors, scenario and use cases for the example.  
(ii) Comparison between Activity and State chart Diagram.
13. (i) Describe UML Package diagram with example.  
(ii) When to use Activity and State chart diagram?
14. Illustrate about UML Deployment and Component diagram with an example.
15. Explain GRASP: Designing objects with responsibilities.
16. What is GRASP? Describe the design patterns and principles used in it.
17. Examine the following GRASP patterns:
  - (i) Creator,
  - (ii) Information Expert,
  - (iii) Low coupling,
  - (iv) High cohesion
18. (i) Explain about Creator and information Expert with example.  
(ii) Explain the Benefits of Low coupling and difficulties of Low cohesion.
19. Compare cohesion and coupling with suitable example.  
Summarize and state the role and patterns while developing system design.
20. (i) Generalize your idea on Controller pattern with example  
(ii) Generalize the concepts of Façade, session and bloated controller.
21. (i) Discuss about Low Coupling and High Cohesion with example.  
(ii) Describe the different scenarios of functional cohesion.
22. (i) Give an account on Factory method.  
(ii) Discuss the topic on coupling and mention its types.
23. Differentiate Adapter and Bridge pattern .  
Analyze how will you design the behavioral pattern.
24. Discuss the topic on
  - (i) Adapter Pattern
  - (ii) Observer Pattern
  - (ii) Factory Pattern

25. (i).Describe about Strategy pattern.  
(ii).List out the applications of Factory pattern and mention its Limitations.
26. (i).Examine in detail about Behavioral pattern.  
(ii).Describe the concepts of Singleton Pattern.
27. Demonstrate in detail about the various categories of design pattern.
28. (i).Illustrate your views about Structural patterns.  
(ii).What is Visibility? Classify the ways of visibility and explain it.
29. (i).What is a POS system? Briefly explain about Inception Phase.  
(ii). Comparison between Association and attributes.
30. Prepare a suitable example showing the various relationships used in Use Case and also give a short note on each relationship.
31. (i).Summarize the Elaboration phase.  
(ii).Discuss the difference between elaboration and inception with example.
32. (i).Describe the strategies used to identify the conceptual classes.  
(ii).Describe the steps to create a domain model used for representing the conceptual classes.
33. (i).Illustrate the concepts of Domain model with example.  
(ii).Show when to model with Description classes with example.
34. (i).Summarize the steps and explain how to find Use cases with an example.  
(ii).Rank the 3 kinds of actors and explain the 3 common Use Case formats.
35. (i).Describe briefly about association and formulate the guidelines to be followed with UML with suitable example.  
(ii).Describe the concepts of Derived attribute.
36. (i).Discuss about attributes with example.  
(ii).Discuss the topic on
  - a).Conceptual subclass
  - b).Conceptual super class
  - c) Multiplicity
37. (i).Explain in detail about domain Model refinement.  
(ii).What is use cases and Explain in detail about the sample Unified process Artifacts Relationships.
38. (i).Analyze the guidelines to define a conceptual subclass with suitable example.  
(ii). Analyze the guidelines to define a conceptual super class with suitable example.
39. (i).What are the guidelines used to partition the classes in the domain model to be organized into packages? Explain with suitable examples.  
(ii).Describe the benefits of composition.
40. (i).Examine the various sections in the Use Case template

- with example.
- (ii).List the guidelines to be followed when writing Use case.
41. (i).Describe in detail about the Finding Conceptual class Hierarchies.  
(ii).Describe briefly about association classes and association role.
42. (i).Illustrate about aggregation and composition with Example. Mention the guidelines to be followed.  
(ii). Illustrate the topic on  
(i). Generalization  
(ii). Specialization  
(iii). Conceptual class hierarchies.
43. (i).Illustrate the relationship between sequence diagram and Use Case with example.  
(ii).Demonstrate the Interaction Diagram notations and explain it?
44. (i).Describe briefly about the logical architecture and UML package diagram.  
(ii).Identify the relationship between Domain layer and Domain model.
45. What is Model View separation principle? Examine the motivation for Model View separation.
- 46 .Describe the concepts of Dependency relationship.
47. (i).Briefly discuss about the various collaborations with the layers.  
(ii).Discuss in detail about Logical Architecture refinement.
48. (i).Give short notes on inter layer and inter package coupling.  
(ii).Discuss on the classic 3 tier architecture.
49. (i).Describe how to adding a new System sequence diagram and contracts?  
(ii).Describe the UML notation for class diagram with an example. Explain the concept of Link, Association and Inheritance.
50. (i).Examine with an example about Interaction diagram.  
(ii).Explain with the example, Illustrate how interaction diagram are used to model the dynamic aspects of the system.
51. With an example explain notations used in sequence diagram for the following:  
(i).Object destruction  
(ii).Frames,(iii).Conditional message  
(iv).Mutually exclusive conditional message, (v).Iterations over a collection
52. Write a problem statement for Library Management System. Design the UML Use Case diagram, Activity diagram , Class diagram, Sequence diagram, State chart diagram, Package diagram, Component and Deployment diagram.
53. List the various UML diagram and examine the purpose of each diagram.

## **DIGITAL SIGNAL PROCESSING**

1. Applications of FIR & IIR filters in medical.
2. Applications of adaptive filter.
3. Sampling rate conversion of band pass signals.
4. Discrete wavelet transforms.
5. Design of digital systems for arbitrary sampling rate conversion.
6. Application of DSP in Biomedical Engineering.
7. Difference between Fourier series & Fourier transform.
8. Windowing in computer graphics.
9. Artificial bee colony algorithm for digital IIR filter.
10. Applications of IIR filters.
11. Applications of digital filters.
12. FFT audio analyzer.
13. Applications of FIR filters.
14. Analog filters for data conversion.
15. Optimal filters.
16. Moving average filters.
17. Windowed sinc vs. chebyshev.
18. The breadth & depth of DSP.
19. FFT sound analyzer.
20. Filter compression.
21. Harmonic analysis in Fourier series.
22. Applications of DFT.
23. Real world application of Fourier series.
24. Windowing & clipping in 2D.
25. Sampling rate conversion by arbitrary sectors.
26. Quantization in image processing.
27. FFT spectrum analyzer.
28. Quantization in image processing.
29. Applications of DFT
30. Adaptive filter in image processing.

## WIRELESS COMMUNICATION

Sl.No	Register Number	Student Name	Assignment Questions
1	922516205001	ARVINTH S	Rayleigh and Rician Distributions
2	922516205002	BHAVANI R	Statistical Models for Multipath Fading channels(ie.Clark's Model)
3	922516205003	DEEBIKA S	(i) Saleh and Valenzuela Indoor Statistical Model. (ii)SIRCIM and SMRCIM Indoor and Outdoor Statistical Model
4	922516205004	DEEPAK KUMAR R	Multipath Shape factor
5	922516205005	DHARANI G	Examples of fading behavior,(i,sector channel Model,Double Sector Channel Model,Rician Channel Model)
6	922516205006	DHARANI V	Reed-Solomon Codes for CDPD
7	922516205007	DHARISHANKUMAR M	Convolutional codes
8	922516205008	DINESHKUMAR N	Speech coding
9	922516205009	DINESHKUMAR S	Adaptive Differential Pulse codes Modulation
10	922516205010	DIVYA BHARATHI G	Vocoders
11	922516205011	EZHUMALAI R	Linear Predictive coders
12	922516205012	GOWERTHINI T	GSM codes
13	922516205013	HARIHARAN R.N	FHMA(Frequency Hopped Multiple Access)
14	922516205015	JEEVA A	Packet radio(ALOHA protocols)
15	922516205016	KARTHICK KUMAR M	CSMA(carrier sense Multiple access protocols)
16	922516205017	KARUPPUSAMY S	Wireless Networking(PSTN,Merging Wireless Networks and the PSTN)
17	922516205018	KAVIYA S	Traffic routing in wireless Networks
18	922516205019	KIRUTHIKA M	Wireless Data services
19	922516205020	KISHOR M	Universal Mobile Telecommunication System(UMTS)
20	922516205021	MAHALINGAM G	AMPS and ETACS
21	922516205022	MAHESWARI P	GSM
22	922516205023	MANISANKAR S	CDMA Digital cellular Standard
23	922516205024	MANJU K	Digital European Cordless Telephone(DECT)
24	922516205025	MOHAN RAJ S	Impulse Response Model of a Multipath Channel
25	922516205026	MONISHA L	Small scale Multipath Measurements

26	922516205027	MUTHUPRABHA R	Narrow band Channels
27	922516205028	MYTHREYAN S	Wide band Channels
28	922516205029	NEEMA V	Amplitude Modulation(Pilot Tone SSB)
29	922516205031	PAVITHRA P	Angle Modulation
30	922516205032	PONVASANTH K	FM Modulation Methods
31	922516205034	PRAVEEN KUMAR R	Digital Modulation
32	922516205033	PRAVEENA P	Pulse shaping Techniques
33	922516205035	RAHUL B	Block codes
34	922516205036	RAJA SEKAR S	Hybrid spread spectrum Techniques
35	922516205037	RAJESH V	WI-FI channels
36	922516205038	RAMYADEVI N	Small cell BTS
37	922516205040	SANGEETHA P	OFDM and its application in 4G
38	922516205041	SELVABHARATHI M	Rake receiver in CDMA
39	922516205042	SHALINI DEVI R	MIMO for LTE
40	922516205043	SIDDHARTH S	Impulse Response Model of a multipath channel
41	922516205044	SIVARANJANI S	Outdoor Propagation Model
42	922516205045	SORNAMUGI K	Knife-Edge Diffraction Model
43	922516205046	SOUMIYA R	Wireless PAN
44	922516205047	SUGANYA S	Hiper LAN
45	922516205048	SUVALAKSHMI R	WLL
46	922516205049	TAMILARASAN P	Wireless Local area Networks
47	922516205050	TAMILARASU N	<p>A cellular service provider decides to use a digital TDMA scheme which can to create a signal-to-interference ratio of 15 db in the worst case. Find the optimal value of N for</p> <ol style="list-style-type: none"> <li>1. Omni directional antennas</li> <li>2. <math>120^\circ</math> sectoring</li> <li>3. <math>60^\circ</math> sectoring</li> <li>4. Should sectoring be used? If so, which case (<math>60^\circ</math> or <math>120^\circ</math>) should be used?(Assume path loss exponent of <math>n=14</math> and consider trunking efficiency)</li> </ol>
48	922516205051	VAISHNAVI K	<p>A hexagonal cell within four-cell system has a radius of 1.387 km.</p> <p>A total of 60 channels are used within the entire system. If the load</p>

			<p>per user is 0.029 Erlangs, and <math>\lambda=1</math> call/hour, Compute the following for an Erlang C system that has a 5% probability of a delayed call:</p> <p>(i) How many user per square kilometer will this system support?</p> <p>(ii) What is the probability that a delayed call will have to wait for more than 10 sec?</p> <p>(iii) What is the probability that a call will be delayed for more than 10 sec?</p> <p>[Data: From Erlang C chart, for 5% probability of delay with <math>C=15</math>, traffic intensity=9.0 Erlangs]</p>
49	922516205052	VENKATESH A	<p>(i) A zero mean sinusoidal message is applied to a transmitter that radiates an AM signal with 10kw power. Compute the carrier power if the modulation index is 0.6. What percentage of the total power is in the carrier? Calculate the power in each sideband.</p> <p>(ii) Consider a transmitter which radiates a sinusoidal carrier frequency of 1850 MHz. For a vehicle moving 60mph, compute the received carrier frequency if the mobile is moving directly toward the transmitter.</p>
50	922516205053	VISHNUPRIYA C	<p>Consider a time invariant Frequency selective block fading channel consisting of 3 sub channels of <math>B=1</math>MHz. The frequency response associated with each channel is <math>H_1=1, H_2=2, H_3=3</math>. The transmit power constraint is <math>P=10</math>MW and noise power spectral density is <math>N_0=10^{-9}</math> W/Hz. Find the Shannon capacity of the channel and optimal power allocation that achieves this capacity.</p>
51	922516205054	YAMUNA T	<p>Calculate the maximum data rate required for transmission if the signal to noise ratio of the communication link is 20 Db and the RF bandwidth is 40KHz.</p>
52	922516205055	YAMUNASRI L	<p>An isotropic radiator is supplied with a 110 W power, and the transmitter gain is 50Db. Calculate the effective isotropic radiated power and the power density at a distance of 9 km.</p>
53	922516205056	YASVANTH R	<p>Determine the capacity of slow fading channel and prove that the outage probability for receiver diversity system with L receive antennas is <math>P_{out}(R)=(2^R-1)^2/L!SNR^L</math>, Where R is the data rate.</p>

### WEB PROGRAMMING

1. Write a program for TCP Server and TCP Client Program.
2. Write a program for UDP Server and UDP Client Program.
3. Describe Remote Method Invocation Client, Server Program.
4. How to Overwrite CSS styles using addclass in JQuery.
5. Explain J2EE program using function
6. How the XML Parsers used.

7. Explain about Dynamic web client side programming
8. Describe XML HttpRequest Object – AJAX application
9. Explain about Advanced Server side programming
10. How Image maps are used in html.
11. Explain the documentation on Writing Servlets in the Scheme Server
12. Describe briefly about web design and its related development cycle
13. Write down the basic components of web technologies
14. Write short notes on SMTP and FTP
15. Write down the functions of ebXML
16. Explain the function of Apache Server
17. Explain Internet information service
18. How we write scripts in python
19. Explain about VB script
20. Describe ASP.net with example
21. Explain Cookies and how they can perform ?
22. Explain Typograph in CSS
23. Explain web authoring software
24. Explain website hosting service
25. Explain DOM in XML
26. Explain the Client server communication

#### COMPUTER NETWORKS

Sl. No.	Name of the Student	Assignment questions
1	ARVINTH S	<p><b><u>Question 1:</u></b></p> <ol style="list-style-type: none"> <li>1. Explain what might happen if two stations are accidentally assigned the same hardware address?</li> <li>2. If sharing reduces cost, why are shared networks used only for local communication?</li> <li>3. Why wireless LAN can not use the same CSMA/CD mechanism that Ethernet uses?</li> </ol>
2	RAJA SEKAR S	
3	DEEPAK KUMAR R	<p><b><u>Question 2:</u></b></p> <ol style="list-style-type: none"> <li>1. If we can extend the LAN then why we need a WAN? explain</li> <li>2. How can a bridge know whether to forward frames?</li> <li>3. Can the length of an Ethernet be increased to many segments of 500 metereach merely by adding</li> </ol>
4	RAJESH V	

		a repeater to connect each additional segment?
5	DHARISHANKUMAR M	<p><b><u>Question 3:</u></b></p> <p>1. How can a computer attach to a network that sends and receives bits faster than the computer's CPU can handle them?</p> <p>2. Explain the differences in the impact on performance of :</p> <p style="padding-left: 40px;">a. video frame being dropped at a wireless client due to jitter.</p> <p style="padding-left: 40px;">b. TCP packet being lost or dropped.</p> <p style="padding-left: 40px;">c. UDP packet being lost or dropped.</p> <p style="padding-left: 40px;">d. 802.11n frame suffering five retries.</p> <p style="padding-left: 40px;">e. hidden terminals from somewhere else on WPI's campus.</p>
6	RAHUL B	
7	YASVANTH R	
8	DINESHKUMAR N	
9	PONVASANTH K	<p><b><u>Question 4:</u></b></p> <p>1. What is MAC address? Does it have some link or something in common to Mac OS of Apple?</p> <p>2. Explain the LMHOSTS files OSI model was developed recently.</p> <p>3. Explain NETBIOS and NETBEU</p>
10	DINESHKUMAR S	
11	PRAVEEN KUMAR R	<p><b><u>Question 5:</u></b></p> <p>1. Elaborate "triple X" in Networks.</p> <p>2. Explain the role of network topology in the decision of setting up a network? 3. Explain the globally scoped multicast addresses are available for ISM? For SSM?</p>
12	EZHUMALAI R	
		<p><b><u>Question 6:</u></b></p> <p>.</p>

13	SIDDHARTH S	<p>1. Obtain a 4 bit CRC code for the data bit sequence 10011011100 using the polynomial <math>x^4+x^2+1</math>.</p> <p>2. How does dense-mode multicast differ from sparse-mode multicast? Elaborate</p> <p>3. Why is WFQ not scalable to high-speed links? Explain.</p>
14	HARIHARAN R.N	<p><b>Question 7:</b></p> <p>1. If a router has 100,000 concurrent connections on average, approximately how much memory does NBAR use to store information for those connections?</p> <p>2. What port numbers does RTP use? What about RTSP, WMT, and ReaMedia?</p> <p>3. Why doesn't the CSS store its client to real server associations in the sticky state table with HTTP hash cookies? Elaborate.</p>
15	MOHAN RAJ S	
16	JEEVA A	<p><b>Question 8:</b></p> <p>1. How many egress queues do Catalyst 29xx/35xx/37xx/4xxx series switches have? What about Catalyst 6500 series switches?</p> <p>2. What is the difference between RTCP and RTSP?</p> <p>3. Why should you "sandwich" your firewalls with content switches when performing FWLB?</p>
17	MYTHREYAN S	
18	TAMILARASU N	<p><b>Question 9:</b></p> <p>1. What type of answer occurs in this situation: your local DNS server responds to your A record request with a cached copy of the A record?</p> <p>2. Why should you disable Boomerang when using HTTP redirects with the DD? Explain</p>
19	MAHALINGAM G	
20	KARUPPUSAMY S	<p><b>Question 10:</b></p> <p>1. An Internet Service Provider (ISP) has the following chunk of CIDR-based IP addresses available with it: 245.248.128.0/20. The ISP wants to give half of this chunk of addresses to Organization A, and a quarter to Organization B, while retaining the remaining with itself. Which of the following is a valid allocation of addresses to A and B?</p> <p>2. Consider building a CSMA/CD network running at 10 Mbps with a network cable of 2500 meter (consisting of five network segments each having a length of 500</p>
21	MANISANKAR S	

		meter and connected by using four repeaters). Considering the delays in the repeaters, the average signal speed in the network cable is 97.65625 m/ $\mu$ sec. Calculate the minimum frame length in bytes, so that when a collision occurs, computers can determine that the collision is related to the frame being sent (1 byte=8 bits).
22	KISHOR M	<b>Question 11:</b> Consider a source computer (S) transmitting a file of size 106 bits to a destination computer (D) over a network of two routers (R1 and R2) and three links (L1, L2 and L3). L1 connects S to R1;L2 connects R1 to R2; and L3 connects R2 to D. Let each link be of length 100km. Assume signals travel over each link at a speed of $10^8$ meters per second. Assume that the link bandwidth on each link is 1Mbps. Let the file be broken down into 1000 packets each of size 1000 bits. Find the total sum of transmission and propagation delays in transmitting the file from S to D?
23	TAMILARASAN P	
24	KARTHICK KUMAR M	<b>Question 12:</b> 1.In an SMDS network with a channel capacity of 45 Mbps, consider a subscriber with a counter increment rate of one byte in 10 $\mu$ sec. a) For continuous data transmission, a1) Calculate the average data transmission rate, a2) Calculate the transmission time of a 5625-byte packet. b) Consider that the subscriber doesn't send any data for a while, and thus 5625-byte credit is accumulated in its counter. At this moment the subscriber sends a 5625-byte packet. b1) Calculate the transmission time of the packet that is sent in burst mode. b2) Compare the results obtained in (a1) and (b1). How many times transmission rate is increased when the packet is sent in burst mode. b3) How many bytes of credit are left on the counter just after the packet is sent?
25	VENKATESH A	

26	BHAVANI R	<p><b>Question 13:</b></p> <p>1. Suppose we want to transmit the message 11001001 and protect it from errors using the CRC polynomials <math>x^3+1</math>. Use polynomial long division to determine the message that should be transmitted.</p>
27	DEEBIKA S	
28	DHARANI G	<p><b>Question 14:</b></p> <p>Consider an instance of TCP's Additive Increase Multiplicative Decrease(AIMD) algorithm where the window size at the start of the slow start phase is 2 MSS and the threshold at the start of the first transmission is 8 MSS. Assume that a time out occurs during the fifth transmission. Find the congestion window size at the end of the tenth transmission.</p>
29	DHARANI V	
30	DIVYA BHARATHI G	<p><b>Question 15:</b></p> <p>1. Suppose computers A and B have IP addresses 10.105.1.113 and 10.105.1.91 respectively and they both use the same netmask N. Which of the values of N given below should not be used if A and B should belong to the same network?</p> <p>2. What are MAC layer protocols, define them Also define Ethernet and Token Rings?</p>
31	GOWERTHINI T	
32	KAVIYA S	<p><b>Question 16:</b></p> <p>1. Suppose the weights of all unused links in the previous question are changed to 2 and the distance vector algorithm is used again until all routing tables stabilize. How many links will now remain unused? Explain.</p> <p>2. The address of a class B host is to be split into subnets with a 6-bit subnet number. What is the maximum number of subnets and the maximum number of hosts in each subnet?</p>
33	KIRUTHIKA M	
34	MAHESWARI P	<p><b>Question 17:</b></p> <p>1. In a network of LANs connected by bridges, packets are sent from one LAN to another through intermediate bridges. Since more than one path may exist between two LANs, packets may have to be routed through multiple bridges. Why is the spanning tree algorithm used for bridge-routing? Explain.</p>
35	MANJU K	

		2. If a class B network on the Internet has a subnet mask of 255.255.248.0, what is the maximum number of hosts per subnet?
36	MONISHA L	<p><b>Question 18:</b></p> <p>1. The message 11001001 is to be transmitted using the CRC polynomial <math>x^3 + 1</math> to protect it from errors. Explain</p> <p>2. Determine the CRC code for the message polynomial <math>x^7+x^5+x^4+x^2+x^1+x^0</math> and the divisor polynomial <math>x^5+x^4+x^1+x^0</math></p>
37	MUTHUPRABHA R	
38	NEEMA V	<p><b>Question 19:</b></p> <p>1. The distance between two stations M and N is L kilometers. All frames are K bits long. The propagation delay per kilometer is t seconds. Let R bits/second be the channel capacity. Assuming that processing delay is negligible, the minimum number of bits for the sequence number field in a frame for maximum utilization, when the sliding window protocol is used. Explain For a host on a class A network with the address 20.38.40.2 and a subnet mask of 255.248.0.0 determine the subnet address where the host resides.</p>
39	PAVITHRA P	
40	PRAVEENA P	<p><b>Question 20:</b></p> <p>1.Coaxial cable Ethernet cable was limited to a maximum of 500m between repeaters, which regenerate the signal to 100% of its original amplitude.Along one 500-m segment, the signal could decay to no less than 14% of its original value (8.5dB). Along 1500m, then, the decay might be <math>(0.14)^3 = 0.3\%</math>. Such a signal, even along 2500m, is still strong enough to be read; why then are repeaters required every 500m?</p>
41	RAMYADEVI N	
42	SANGEETHA P	<p><b>Question 21:</b></p> <p>1. An IEEE 802.5 token ring has five stations and a total wire of 230m. How many bits of delay must the monitor insert into the ring? Do this for both 4Mbps and 16Mbps; use a propagation rate of <math>2.3 * 10</math> m/s.</p> <p>2. Consider the use of Stop and wait algorithm on a 20 km point-to-point fibre link, sending frames of 1KByte with a data transfer rate of 10 Mbps. Calculate a suitable time-out value for this algorithm.</p>
43	SELVABHARATHI M	

44	SHALINI DEVI R	<p><b><u>Question 22:</u></b></p> <p>1. Suppose hosts A and B are on an Ethernet LAN with class C IP network address 200.0.0. It is desired to attach a host C to the network via a direct connection to B. Explain how to do this with subnets; give sample subnet assignments. Assume that an additional network address is not available. What does this do to the size of the Ethernet LAN?</p>
45	SIVARANJANI S	
46	SORNAMUGI K	<p><b><u>Question 23:</u></b></p> <p>1. For a host on a class A network with the address 20.38.40.2 and a subnet mask Of 255.248.0.0 determine the subnet address where the host resides.</p> <p>2. Assume a network with a n-layer protocol with h bytes of header added at each layer, to transmit small messages (maximum 10 bytes). What is the overhead of this protocol ? For n=4 and n=7, what values of "h" will give an efficiency of at least 50%</p>
47	SOUMIYA R	
48	SUGANYA S	<p><b><u>Question 24:</u></b></p> <p>1. Explain the need for collision avoidance in a wireless network, and discuss how this is achieved in the IEEE 802.11 protocol. Also, discuss the handling of node mobility in this protocol. (10) ii. Let A and B be two stations attempting to transmit frames on an Ethernet network. A collision occurs.</p> <p>A. What is the probability that A gets to transmit its first frame A1 immediately after the first collision?</p> <p>B. After that transmission, A tries to send its second frame A2 and B its first frame B1. Will a collision occur ? What is the probability of the-collision ?</p> <p>C. If a collision occurs, and a back-off takes place, what is the probability that A wins the race again?</p> <p>D. Is it possible for A to win all the time ? What happens to B's transmission ?</p>
49	SUVALAKSHMI R	

50	VAISHNAVI K	<p><b><u>Question 25:</u></b></p> <p>1. Consider sending a 3500-byte datagram that has arrived at a router R1 that needs to be sent over a link that has an MTU size of 1000 bytes to R2. Then it has to traverse a link with an MTU of 600 bytes. Let the identification number of the original datagram be 465. How many fragments are delivered at the destination ? Show the parameters associated with each of these fragments.</p> <p>2. With TCPs slow start and AIMD for congestion control, show how the window size will vary for a transmission where every 5<sup>th</sup> packet is lost. Assume an advertised window size of 50 MSS.</p>
51	VISHNUPRIYA C	
52	YAMUNA T	<p><b><u>Question 26:</u></b></p> <p>1. What is null modem? Briefly define. Between which units the null modem is used? Which type of transmission (series or parallel; synchronous or asynchronous) does it use? Which type of connector does it use?</p> <p>2. IPv6 allows hardware addresses to be part of the IPv6 address. This eliminates ARP. But, how does this complicate the job of DNS ? How does this affect the problem of finding the local DNS server ?</p>
53	YAMUNASRI L	