MALLA REDDY COLLEGE OF ENGINEERING &TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

(Affiliated to JNTU, Hyderabad, Approved by AICTE - Accredited by NBA & NAAC – 'A' Grade, ISO 9001:2008 Certified)

Maisammaguda, Dhulapally, Secunderabad – 500100.

DEPARTMENT OF
ELECTRONICS & COMMUNICATION ENGINEERING

III B. TECH II SEMESTER

QUESTION BANK (2022 – 23)

R20-REGULATION

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

R20

(Autonomous Institution – UGC, Govt. of India)

III B.Tech II Semester MODEL PAPER-1

Cloud Computing Fundamentals

Electronics & Communication Engineering

Roll No										

Time: 3 hours **Max. Marks: 70**

Note: This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing ONE Question from each SECTION and each Question carries 14 marks.

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SECTION-I

1 ***A*** Discuss in detail about distributed system models.

B Explain the Layers of Cloud.

OR

2 ***A*** Explain the basic Cluster Architecture with a neat diagram.

B Write a note on grid computing, distributed computing and parallel computing.

SECTION-II

3 ***A*** Outline the full and para-virtualization.

B Sketch the architecture of computer system before and after virtualization and explain it.

OR

4 Explain in detail about Implementation Levels of virtualization.

SECTION-III

5 ***A*** What to consider before migrating to cloud? Explain.

B Classify the clouds based on the deployment model.

OR

6 ***A*** Discuss about the migration risk and mitigation.

B Classify the cloud computing services.

SECTION-IV

7 How cloud provides Infrastructure as a service (IAAS)? Explain.

OR

8 ***A*** Discuss about the integration of private and public clouds.

B Explain Aneka framework for cloud infrastructure.

SECTION-V

9 ***A*** What does the acronym SaaS mean? How does it relate to cloud computing?

B Identify the Web-Based Communication Tools used in SaaS.

OR

10 How to protect the data in cloud computing using information card?

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MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

R20

(Autonomous Institution – UGC, Govt. of India)

III B.Tech II Semester MODEL PAPER-2

Cloud Computing Fundamentals

Electronics & Communication Engineering

Roll No										

Time: 3 hours **Max. Marks: 70**

Note: This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing ONE Question from each SECTION and each Question carries 14 marks.

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SECTION-I

1 ***A*** Illustrate the characteristics of cloud Computing with examples.

B Distinguish between Parallel Computing, Distributed Computing

OR

2 ***A*** Explain the basic of Peer 2 Peer Network Systems.

B Explain the desired features of Cloud Computing.

SECTION-II

3 ***A*** What are hardware virtualization techniques?

B List and discuss different types of virtualization

OR

4 Discuss the architecture of Hyper-V. Discuss its use in cloud computing.

SECTION-III

5 Explain Seven-Step Model of Migration into a Cloud.

OR

6 Explain the broad approaches to migrating into the cloud.

SECTION-IV

7 Explain about Virtual Machines Provisioning process

OR

8 Explain about Virtual Machines Migration services

SECTION-V

9 Explain the features of Google App Engine.

OR

10 Discuss in brief about the cloud computing and data security.

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MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

R20

(Autonomous Institution – UGC, Govt. of India)

III B.Tech II Semester MODEL PAPER-3

Cloud Computing Fundamentals

Electronics & Communication Engineering

Roll No										

Time: 3 hours **Max. Marks: 70**

Note: This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing ONE Question from each SECTION and each Question carries 14 marks.

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SECTION-I

1 What is cloud computing and explain the characteristics and benefits of cloud computing.

OR

2 Explain the Types of Clouds

SECTION-II

3 Explain Virtual Storage Management with Neat Diagram.

OR

4 What is a Virtual Machine? Explain virtualization of I/O Devices

SECTION-III

5 Explain roots of cloud computing.

OR

6 Explain the enterprise cloud computing paradigm

SECTION-IV

7 Analyze the Public Cloud and Infrastructure Services in Cloud

OR

8 Write a short note on the following:
(i). Microsoft Azure
(ii). Aneka Architecture

SECTION-V

9 Discuss the evolution of Saas with an example.

OR

10 Explain the Data Security Risks with suitable Examples

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MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

R20

(Autonomous Institution – UGC, Govt. of India)

III B.Tech II Semester MODEL PAPER-4

Cloud Computing Fundamentals

Electronics & Communication Engineering

Roll No										

Time: 3 hours **Max. Marks: 70**

Note: This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing ONE Question from each SECTION and each Question carries 14 marks.

*****

1 Explain about Grid and Cluster Computing

OR

2 Explain the Layers and Types of Clouds

SECTION-II

3 List out the different classes of virtualization architecture. Discuss in detail about the hypervisor and Xen architecture .

OR

4 Explain Virtualization of CPU.

SECTION-III

5 Explain how migration is done into cloud

OR

6 Compare Public, Private and Hybrid Clouds.

SECTION-IV

7 Discuss the features of PaaS and IaaS providers.

OR

8 Differentiate between Infrastructure as a Service (IAAS) & Platform (PAAS) with appropriate example

SECTION-V

9 Explain Identity and Security with respect to Cloud Computing

OR

10 Discuss about data security risks in cloud? Explain how digital identity can overcome these risks

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R20

MODEL PAPER-1

MALLA REDDY COLLEGE OF ENGINEERING ANDTECHNOLOGY

III B.Tech II Semester Examinations

SATELLITE COMMUNICATION

(Electronics & Communication Engineering)

Time: 3 hours Max. Marks: 70marks

Answer any Five Questions

All Questions carries equal marks

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1 (A)	Discuss the history of satellite communication	[7M]
1 (B)	What are the different frequency assigned by ITU for satellite communication and Explain the use of each band.	[7M]
	OR	
2(A)	What are look angles? How do you determine them? Explain with the help of neat diagrams.	[7M]
2(B)	Write an account of the evolution and growth of communication satellites.	[7M]
3(A)	Explain the AOCS with the help of neat labelled diagram	[7M]
3(B)	Draw and Explain the simplified single conversion transponder (bent pipe) for 6/4GHzband.	[7M]
	OR	
4(A)	Explain about the basic transmission theory.	[7M]
4(B)	A satellite at a distance of 40000km from a point on the earth's surface radiates a power of 10W from an antenna with a gain of17dB in the direction of the observer. Find the flux density at the receiving point and the power received by an antenna at this point with an effective area of $10m^2$.	[7M]
5(A)	Explain about propagation effects on satellite links	[7M]
5(B)	With the help of a neat diagram Explain about satellite switched TDMA.	[7M]
	OR	
6(A)	Explain about Demand assigned multiple access in detail.	[7M]
6(B)	With an Example what is meant by inter modulation in FDMA	[7M]
7(A)	Draw the block diagram of a general earth station and Explain function of each block	[7M]
7(B)	What are the major sources of error in GPS receiver? Discuss in detail .	[7M]
	OR	
8(A)	Discuss in detail the process of satellite signal acquisition.	[7M]
8(B)	Write short notes on GPS Receiver Operation	[7M]
9(A)	Explain tree algorithm and how it is helpful in satellite packet data transmission	[14M]
	OR	
10(A)	Explain Message transmission using FDMA	[14M]

R20

MODEL PAPER-2
MALLA REDDY COLLEGE OF ENGINEERING AND TECHNOLOGY
III B.Tech II Semester Examinations
SATELLITE COMMUNICATION
(Electronics & Communication Engineering)

Time: 3 hours Max. Marks: 70marks

Answer any Five Questions
All Questions carries equal marks

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1 (A)	Explain about LEO and MEO satellite systems	[7M]
1 (B)	Explain the advantages and disadvantages of satellite communication.	[7M]
	OR	
2(A)	What are look angles? How do you determine? Explain with the help of neat Diagrams	[7M]
2(B)	Write an account of the evolution and growth of communication satellites	[7M]
3(A)	Write a short note on Telemetry and Tracking.	[7M]
3(B)	Draw and explain the simplified single conversion transponder (bent pipe)for 14/11GHzband	[7M]
	OR	
4(A)	Illustrate the procedure for KU band uplink design	[7M]
4(B)	A satellite at a distance of 40000km from a point on the earth's surface radiates a Power of 10W from an antenna with a gain of17dB in the direction of the observer. Find the flux density at the receiving point and the power received by an antenna at this point with an effective area of $10m^2$.	[7M]
5(A)	Explain about i) Ionospheric scintillation and low angle fading ii) Atmospheric absorption	[7M]
5(B)	What is the basic principle of a direct sequence spread spectrum system and Explain	[7M]
	OR	
6(A)	Explain about TDMA in detail	[14M]
7(A)	Explain the technique used to increase the accuracy of GPS Measurements?	[7M]
7(B)	Write short notes on differential GPS	[7M]
	OR	
8(A)	Explain about Earth station tracking systems.	[7M]
8(B)	What are the different types of antenna mounts?	[7M]
9(A)	Explain about tree Algorithm	[14M]
	OR	
10(A)	Explain Message transmission using TDMA	[14M]

R20

MODEL PAPER-3
MALLA REDDY COLLEGE OF ENGINEERING AND TECHNOLOGY
III B.Tech II Semester Examinations
SATELLITE COMMUNICATION
(Electronics & Communication Engineering)

Time: 3 hours Max. Marks: 70marks

Answer any Five Questions
All Questions carries equal marks

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1 (A)	Explain the need for satellite communication.	[7M]
1 (B)	Give brief history of satellite communication	[7M]
	OR	
2(A)	What is meant by an orbit? Explain the different types of orbits in satellite communication	[7M]
2(B)	A satellite in an elliptical orbit around the earth has an apogee of 39,152km and a perigee of 500 km. What is the orbital period of this satellite. Assume radius of earth is 6378.137km and Kepler's constant has the value $3.98 * 10^5$ km^3/s^2 .	[7M]
3(A)	Explain about altitude and orbit control system in detail	[14M]
3(B)	OR	[7M]
4(A)	Write a short note on Telemetry and Tracking.	[7M]
4(B)	Consider a 4GHz receiver with the following gains and noise temperatures: T_{in}=25K,T_{RF}=50K, T_{IF}=1000K, T_m=500K, G_{RF}=23 db, G_{IF}=30db. Calculate the system noise temperature assuming that the mixer has a gain G_m=0db. Recalculate the system noise temperature when the mixer has a10dbloss.	[7M]
5(A)	Explain about FDMA in detail.	[14M]
	OR	
6(A)	What are the different propagation effects and what is their impact on satellite links	[7M]
6(B)	With the help of a neat diagram explain satellite switched TDMA	[7M]
7(A)	Explain about Earth station tracking systems	[7M]
7(B)	What is the Technique used to increase the accuracy of GPS measurements? Discuss in detail	[7M]
	OR	
8(A)	Discuss in detail the process of satellite signal acquisition	[7M]
8(B)	Write short notes on differential GPS.	[7M]
9(A)	What is tree algorithm and Give details about packet reservation	[14M]
	OR	
10(A)	Elaborate and explain in detail about ALOHA and its types	[14M]

R20

MODEL PAPER-4

MALLA REDDY COLLEGE OF ENGINEERING AND TECHNOLOGY

III B.Tech II Semester Examinations

SATELLITE COMMUNICATION

(Electronics & Communication Engineering)

Time: 3 hours Max. Marks: 70marks

Answer any Five Questions

All Questions carries equal marks

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1 (A)	Define Kepler's laws of planetary motion with relevant mathematical expressions	[7M]
1 (B)	What are the different frequencies assigned by ITU for satellite communication? Explain the use of each band OR	[7M]
2(A)	Explain about LEO and MEO satellite systems	[7M]
2(B)	What are the advantages and disadvantages of satellite communicate	[7M]
3(A)	What is system noise temperature? Explain how to calculate system noise temperature in Earth station receiver	[14M]
3(B)	OR	[7M]
4(A)	Draw and explain the simplified single conversion transponder (bent pipe)for 6/4GHzband	[7M]
4(B)	Consider a 4GHz receiver with the following gains and noise temperatures: T_{in}=25K, T_{RF}=50K, T_{IF}=1000K, T_m=500K, G_{RF}=23 db, G_{IF}=30db. Calculate the system noise temperature assuming that the mixer has a gain G_m=0db.Recalculate the system noise temperature when the mixer has a10dbloss	[7M]
5(A)	With the help of a neat diagram Explain about satellite switched TDM	[7M]
5(B)	What is intermodulation in FDMA ,Explain how are they generated	[7M]
	OR	
6(A)	Discuss about CDMA in detail	[14M]
6(B)		[7M]
7(A)	Explain about Earth station tracking systems.	[7M]
7(B)	What is the Technique used to increase the accuracy of GPS measurements? Discuss in detail	[7M]
	OR	
8(A)	Write short notes on GPS Receiver Operation.	[7M]
8(B)	write short notes on differential GPS	[7M]
9(A)	Briefly explain M/G/1 Queue and why packet reservation is significant in satellite communication	[14M]
	OR	
10(A)	Explain Tree algorithm and how it is helpful in satellite packet data transmission	[14M]

Code No:R20A0415

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

III B.Tech II Semester Examinations

Microprocessors and Microcontrollers

(EEE & ECE)

Roll No										

Time: 3 hours **Max. Marks: 70**

Note: This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing ONE Question from each SECTION and each Question carries 14 marks.

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SECTION-I

1 Sketch the Architecture of 8086 and summarize the role of EU unit. **[14M]**

OR

2 With a neat sketch describe the Minimum and Maximum mode of operation of 8086 with neat timing (read and write cycle) diagrams **[14M]**

SECTION-II

3 List and explain the addressing modes of 8086 with examples? **[14M]**

OR

4 a) Write an assembly language program to convert unpacked BCD to ASCII. **[7M]**

b) Write an assembly language program to find sum of squares. **[7M]**

SECTION-III

5 a) Discuss how 8251 is used for serial communication of data. **[8M]**

b) Write short notes on 5 types of interrupts supported by 8086. **[6M]**

OR

6 a) Construct an Interface of two 16k×8 EPROMS & and two 32k×8 RAM chips with 8086. Select suitable memory map. **[10M]**

b) Explain the purpose of interfacing 8257 with 8086 **[4M]**

SECTION-IV

7 a) Discuss the internal memory organization of the 8051 microcontroller. **[6M]**

b) Write an Assembly Language Program using 8051, **[8M]**
i) Addition of two 8 bit Numbers ii). Multiplication of two 8 bit Numbers

OR

8 a) Define ports and explain for ports in 8051 Microcontroller. **[8M]**

b) Sketch and illustrate how to access external memory devices in an 8051 based system. **[6M]**

SECTION-V

9 a) Explain the register IE format of 8051 **[7M]**

b) Describe the Interrupt, vector table and exception handler in ARM. . **[7M]**

OR

10 a) Explain about TCON & PCON operation with an example. **[8M]**

b) Mention about the program status register instructions in ARM processor. **[6M]**

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Code No:R20A0415

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

III B.Tech II Semester Model Paper-1

Microprocessors and Microcontrollers

(ECE)

Roll No										

Time: 3 hours **Max. Marks: 70**

Note: This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing ONE Question from each SECTION and each Question carries 14 marks.

***

SECTION-I

1 (a) Discuss register organization of 8086 microprocessor? What are the special functions of general purpose registers? **[8M]**

(b) Explain the following pins of 8086? **[6M]**

(i) HOLD (ii) TEST (iii) NMI

OR

2 (a) Explain physical memory organization for 8086 microprocessor. **[8M]**

(b) Describe the timing diagrams of minimum mode write operation and explain in detail. **[6M]**

SECTION-II

3 (a) Explain any 2 groups of instructions in 8086. **[6M]**

(b) Calculate physical address of the memory location being referred in the given instructions for the following values in the 8086 registers **[8M]**

CS=1120h,DS=1150h,ES=1250h,SS=1350h,AX=1000h,BX=2000h, CX=3000,DX=4000h, SI=1111h,DI=2222h,SP=1010h,BP=1100h

(i) MOV AX, [BX]
(ii) MOV AX, [BP][SI]
(iii) MOV AX, [BX][DI]10H
(iv) MOV AX, [BP][DI]-10H

OR

4 (a) Develop an assembly language program to find the sum of squares of first ten numbers. **[7M]**

(b) Develop an assembly language program to find number of even and odd numbers in an 8- bit array. **[7M]**

SECTION-III

5 With a neat block diagram explain the operation of 8251 USART. **[14M]**

OR

6 Explain the internal architecture of 8259 PIC and explain its blocks. **[14M]**

SECTION-IV

7 (a) Discuss internal memory organization of 8051 microcontroller. **[8M]**

(b) Interface a 2-digit 7 segment LED display to the 8051 microcontroller and write a program to display numbers 00 to 99. **[6M]**

OR

8 (a) How many number of IO ports are available in 8051? List all the ports with **[8M]**

relevant sketches and what are the ports used for external memory access?

(b) Develop assembly language program using branch instructions of 8051. **[6M]**

SECTION-V

9 (a) Explain how do you do the programming of 8051 by using timers and counters. **[8M]**

(b) Discuss interrupt structure of 8051 microcontroller and explain in detail. **[6M]**

OR

10 Write Short notes on the following **[7M]**

(i) Current program status register **[7M]**

(ii) Registers of ARM Processor

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Code No:R20A0415

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

III B.Tech II Semester Model Paper-2

Microprocessors and Microcontrollers

(ECE)

Roll No										

Time: 3 hours **Max. Marks: 70**

Note: This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing ONE Question from each SECTION and each Question carries 14 marks.

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SECTION-I

1 ***(a)*** How do you implement memory segmentation and instruction pipelining in 8086 microprocessor, Explain? **[8M]**

(b) Explain the following pins of 8086? **[6M]**

(i)READY (ii) INTR (iii) ALE

OR

2 (a) Discuss Flag Register Format in 8086 and explain significance of each flag. **[8M]**

(b) Differentiate between minimum mode and maximum mode 8086 operation with the help of suitable diagrams. **[6M]**

SECTION-II

3 (a) Implement a programming logic in assembly language to sort the given list of ten numbers starting at memory location 1000h in ascending order. **[8M]**

(b) Explain the following instructions with an example to each? **[6M]**

(i) AAA (ii) SCASB (iii) SHR

OR

4 (a) Write an assembly language program to reverse the given string "1, 2, 3, 4, 5" with string instructions. **[6M]**

(b) List various addressing modes supported in 8086 microprocessor programming and give one example to each. **[8M]**

SECTION-III

5 With the help of a neat diagram discuss the operation of DMA controller 8257 and its interfacing with 8086 microprocessor. **[14M]**

OR

6 Discuss the need for an interrupt controller. Enumerate the functionality of 8259PIC (priority interrupt controller) with the help of neat block diagram. **[14M]**

SECTION-IV

7 (a) Enumerate the features of 8051 microcontroller with the help of neat architecture diagram. **[8M]**

(b) Discuss external memory access capacity of 8051 microcontroller and list the instructions used to access external memory. **[6M]**

OR

8 (a) Explain about the Timers of 8051 with its Modes of Operation, and the Registers **[8M]**

used for 8051 Timers.

(b) What are the interrupts available in 8051? Explain about the Interrupt Structure. **[6M]**

SECTION-V

9 Draw the Architecture of ARM processor and explain each function in detail. **[14M]**

OR

10 Explain about the Serial data communication of 8051 with its registers. Also explain about the Modes of operation of the same. **[14M]**

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R18

Code No: R18A0415

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

III B.Tech II Semester Model Paper-3

Microprocessors and Microcontrollers

(ECE)

Roll No										

Time: 3 hours **Max. Marks: 70**

Note: This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing ONE Question from each SECTION and each Question carries 14 marks.

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SECTION-I

1	a)	Draw the Architecture of 8086 and summarize the role of BIU unit.	**[10M]**
	b)	List the advantages of memory segmentation.	**[4M]**
		OR	
2	a)	Illustrate the functionality of Flag register with suitable examples.	**[8M]**
	b)	What is memory segmentation? Explain the use of segmentation in different applications.	**[6M]**

SECTION-II

3		Explain the Addressing Modes of 8086 microprocessor with examples	**[14M]**
		OR	
4	a)	Write an assembly language program to sort the given values in descending order with detailed explanation of taking example data.	**[7M]**
	b)	Define assembler directives and mention the purpose of assembler directives with some examples	**[7M]**

SECTION-III

5		Explain the control word format of 8255 in I/O & BSR mode.	**[14M]**
		OR	
6		Illustrate the purpose of 8251 USART and how it is interfaced with 8086	**[14M]**

SECTION-IV

7	a)	Explain the architecture of 8051 microcontroller.	**[10M]**
	b)	Write short notes on external hardware interrupts of 8051 microcontroller.	**[4M]**
		OR	
8	a)	Describe the operation of I/O ports in 8051 with neat sketch.	**[10M]**
	b)	List the format of PSW register of 8051 and explain each bit	**[4M]**

SECTION-V

9	a)	Explain about the CPSR register of ARM processor	**[7M]**
	b).	Explain about Architecture of ARM processor	**[7M]**
		OR	
10	a)	Explain the SCON register in 8051.	**[6M]**
	b)	Describe the Interrupt, vector table and exception handler in ARM.	**[8M]**

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R18

Code No: R18A0415

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

III B.Tech II Semester Model Paper-4

Microprocessors and Microcontrollers

(ECE)

Roll No										

Time: 3 hours **Max. Marks: 70**

Note: This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing ONE Question from each SECTION and each Question carries 14 marks.

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SECTION-I

1	Explain the architecture of 8086 with neat diagram.	**[14M]**
	OR	
2	Explain the function of following registers 8086 microprocessor. a) AX,BX,CX,DX b) CS,DS,SS, ES c) BP,SP, SI& DI d) IP and instruction queue	**[14M]**

SECTION-II

3	Explain the instructions of 8086 with examples.	**[14M]**
	OR	
4	a) Write an 8086 assembly language program to convert Binary to BCD number?	**[7M]**
	b) Describe in detail about the Procedures with suitable syntax and example.	**[7M]**

SECTION-III

5	Draw the Block diagram and explain the operations of 8255 PPI.	**[14M]**
	OR	
6	Explain the architecture of 8251A with neat diagram.	**[14M]**

SECTION-IV

7	a) Describe about the timer mode 0 with a neat sketch in 8051 microcontroller.	**[7M]**
	b) Write short notes on external hardware interrupts of 8051 microcontroller.	**[7M]**
	OR	
8	a) Explain about the Memory Structure of 8051.	**[8M]**
	b)Write an Assembly Language Program using 8051 i)Addition of two 8 bit Numbers ii). Addition of two 16 bit Numbers?	**[6M]**

SECTION-V

9	Describe the various timers/ counters of 8051.	**[14M]**
	OR	
10	a) Describe the Software Interrupt instructions in ARM.	**[7M]**
	b) Mention about the program status register instructions in ARM processor.	**[7M]**

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Code No: R20A0513 **R20**

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

III B.Tech I Semester Regular Examinations, December 2022

Artificial Intelligence

(CSE, IT, CSE-CS, CSE-DS, CSE-IOT)

Roll No										

Time: 3 hours **Max. Marks: 70**

Note: This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing ONE Question from each SECTION and each Question carries 14 marks.

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SECTION-I

1	***A***	List and explain various AI Languages.	**[7M]**
	B	What are the basic components of AI problem solving methodology? Illustrate with an example.	**[7M]**
		OR	
2	***A***	Illustrate the heuristic Hill Climbing Algorithm with an example.	**[7M]**
	B	Explain A* Algorithm with example.	**[7M]**
		SECTION-II	
3	***A***	Discuss Alpha-Beta Pruning and its advantages over min-max method.	**[10M]**
	B	Explain the Syntax and Semantics of Propositional Logic.	**[4M]**
		OR	
4	***A***	Explain forward chaining and backward chaining	**[7M]**
	B	Compare and contrast the two variants of Logic-Predicate and Propositional.	**[7M]**
		SECTION-III	
5	***A***	Explain the issues in Knowledge Representation. Define Inheritance in Semantic Net.	**[8M]**
	B	Differentiate between monotonic and non monotonic reasoning.	**[6M]**
		OR	
6	***A***	Explain acting under uncertainity domain	**[5M]**
	B	Explain Bayesian Networks?	**[9M]**
		SECTION-IV	
7	***A***	Differentiate between Supervised Learning and Unsupervised Learning.	**[4M]**
	B	Discuss Winston's learning briefly with neat sketch.	**[10M]**
		OR	
8	***A***	Describe the role of information gain in Decision Tree Learning.	**[7M]**
	B	Explain decision tree algorithm.	**[7M]**
		SECTION-V	
9	***A***	Explain the Phases in Building Expert System.	**[9M]**
	B	Explain the Applications of the Expert Systems.	**[5M]**
		OR	
10	***A***	List the Characteristics of Expert Systems. Classify various Expert System shells and tools.	**[8M]**
	B	Explain about MYCIN Expert system in detail.	**[6M]**

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R17

Code No: R17A1204

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

IV B.Tech I Semester Supplementary Examinations, November 2022

Artificial Intelligence

(CSE)

Roll No										

Time: 3 hours **Max. Marks: 70**

Note: This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing ONE Question from each SECTION and each Question carries 14 marks.

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SECTION-I

1	***A***	Briefly explain how AI Technique can be represented and list out some of the task domain of AI.	**[7M]**
	B	How to define a problem as state space search? Discuss it with the help of an example.	**[7M]**
		OR	
2	***A***	Explain any one algorithm with the help of an example. i. Hill Climbing: Steepest Ascent. ii. Constraints Satisfaction	**[3M]** **[4M]**
	B	Identify the type of control strategy is used in the 8-puzzle problem. Explain	**[7M]**

SECTION-II

3	***A***	Justify the need for minimax algorithm. Explicate the steps of minimax algorithm	**[7M]**
	B	Explain Non – Monotonic reasoning and discuss the various logic associated with it.	**[7M]**
		OR	
4	***A***	Define the syntactic elements of first-Order logic	**[7M]**
	B	Explain in detail about forward chaining algorithm with example.	**[7M]**

SECTION-III

5		List out the steps involved in the knowledge Engineering process. Explain with an example.	**[14M]**
		OR	
6		Discuss about Bayesian Theory and Bayesian Network.	**[14M]**

SECTION-IV

7	***A***	Define learning. Summarize the learning from examples technique.	**[7M]**
	B	Explain the Winston's Learning Program.	**[7M]**
		OR	
8	***A***	What is a decision tree? Write the decision tree learning algorithm.	**[7M]**
	B	Explain the process of inducing decision trees from examples.	**[7M]**

SECTION-V

9	***A***	Outline stages in the development of an expert systems.	**[7M]**
	B	Summarize the expert system shells and tools.	**[7M]**
		OR	
10	***A***	Illustrate the Knowledge Acquisition system.	**[7M]**
	B	Explain the applications and domains in Expert systems.	**[7M]**

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R18

Code No: R18A1205

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

III B.Tech I Semester Supplementary Examinations, June 2022

Artificial Intelligence

(EEE, CSE & IT)

Roll No										

Time: 3 hours **Max. Marks: 70**

Answer Any **Five** Questions
All Questions carries equal marks.

***

1 Define AI problems and its components. Explain how a problem solving agent works? Explain real-world AI problems with examples **[14M]**

2 What is best first search? Explain in detail A* algorithm? Discuss BFS Algorithm **[14M]**

3 Explain in detail about alpha-beta pruning with example. **[14M]**

4 What is First Order Logic? State and Prove Baye's Theorem and mention its applications? **[14M]**

5 Give a detail note on a generic knowledge-based agent. In the wumpus world, agent will have five sensors. Mention Various Other Knowledge Representation Schemes **[14M]**

6 Prove the following assertion: for every game tree, the utility obtain by MAX using mini max decision against a suboptimal MIN will be never be lower than the utility obtained playing against an optimal MIN. Can you come up with a game tree in which MAX can do still better using a suboptimal strategy against a suboptimal MIN? **[14M]**

7 Discuss in detail about Winston's Learning Program with its implementation details. **[14M]**

8 What is an Expert System? List various components of Knowledge Base? Differentiate Forward and Backward Chaining? **[14M]**

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R17

Code No: R17A1204

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

IV B.Tech I Semester Supplementary Examinations, June 2022

Artificial Intelligence

(CSE)

Roll No										

Time: 3 hours **Max. Marks: 70**

Answer Any **Five** Questions
All Questions carries equal marks.

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1	a.	Explain depth first search strategy algorithm with suitable example.	**[7M]**
	b.	Define Constraint Satisfaction Problem. Explain Constraint Satisfaction Problem for map colouring.	**[7M]**
2	a.	Define Agent Program. Explain the Following Agent Programs with Respect to Intelligent Systems i. Goal-Based Reflex Agent ii. Utility-Based Agent	**[5M]**
	b.	Explain the following Heuristic Search Strategies with Suitable Examples: i. Generic Best-First Algorithm ii. A * Algorithm	**[9M]**
3	a.	Explain alpha –beta pruning search algorithm.	**[7M]**
	b.	Explain the Symbols and Interpretation of First Order Logic	**[7M]**
4	a.	Explain MinMax Search Algorithm.	**[5M]**
	b.	Explain the Forward Chaining and backward chaining Algorithms with suitable	**[9M]**
5	a.	Explain the Baye's Rule and Its Applications in Artificial Intelligence.	**[7M]**
	b.	Differentiate between monotic and non-monotic reasoning.	**[7M]**
6	a.	With an Example, Discuss Conditional and Unconditional Probability	**[7M]**
	b.	Define Bayesian Network. Explain the Semantics of Bayesian Network with suitable example.	**[7M]**
7	a.	Explain Winston's Learning Program with an Example	**[7M]**
	b.	Explain the Following Forms of Learning i. Rote Learning ii. Reinforcement Learning	**[7M]**
8	a.	Explain the Knowledge Acquisition with a neat schematic diagram.	**[7M]**
	b.	Explain the architecture of an Expert System and discuss the working of MYCIN Expert System	**[7M]**

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R18

Code No: R18A0526

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

IV B.Tech I Semester Regular/Supplementary Examinations, November 2022

Machine Learning

(CSE & IT)

Roll No										

Time: 3 hours **Max. Marks: 70**

Note: This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing ONE Question from each SECTION and each Question carries 14 marks.

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SECTION-I

1	***A***	Explain components involved in the design of a learning system	**[7M]**
	B	Discuss different perspectives and issues in machine learning.	**[7M]**
		OR	
2		Explain different learning models of machine learning	**[14M]**
		SECTION-II	
3	***A***	Explain ID3 algorithm with example.	**[10M]**
	B	Explain different types of SVM algorithm:	**[4M]**
		OR	
4	***A***	Discuss the step wise analysis of k-means clustering algorithm	**[10M]**
	B	With a neat sketch explain the architecture of an artificial neural network.	**[4M]**
		SECTION-III	
5	***A***	What is the importance of ensemble learning? Explain the different methods involved in it .	**[4M]**
	B	Discuss Expectation-Maximization (EM) Algorithm	**[10M]**
		OR	
6	***A***	What are the advantages and disadvantages of random forest algorithm.	**[7M]**
	B	Explain the procedure of Multiexpert combination method	**[7M]**
		SECTION-IV	
7	***A***	Explain the an algorithm for Learning Q.	**[10M]**
	B	Define PAC-learnability with suitable example.	**[4M]**
		OR	
8		How to compute optimal policy? Explain with example.	**[14M]**
		SECTION-V	
9	***A***	Explain different Genetic Operators of Genetic Algorithm.	**[7M]**
	B	Define Hypothesis Space Search of Genetic Algorithm.	**[7M]**
		OR	
10		Discuss about Baldwin effect and Lamarckian evolution	**[14M]**

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R20

Code No: R20A6601

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

III B.Tech I Semester Regular Examinations, December 2022

Machine Learning

(CSE-AIML)

Roll No										

Time: 3 hours **Max. Marks: 70**

Note: This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing ONE Question from each SECTION and each Question carries 14 marks.

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SECTION-I

1 **[14M]**

Colour	Hair	Height	Eyes	Class
White	Blond	2	brown	+
Black	Dark	4	brown	-
Brown	Red	2	Blue	+
Brown	Blond	4	Blue	-
Black	Blond	2	Blue	-
Black	Red	2	Brown	+
White	Blond	2	Black	-
Black	Red	4	Blue	-

Apply find 'S' algorithm and candidate elimination algorithm to find the version space

OR

2 The following table contains training examples for a classification problem. Use ID3 algorithm to construct a minimal decision tree that predicts the class label. Show each step of the computation. **[14M]**

ID	Temperature	rain	wind	Visibility	Class
1	Hot	No	Mid	NG	Yes
2	Cool	Yes	Mid	NG	Not
3	Hot	Yes	High	NG	Not
4	Hot	No	Low	Good	Yes
5	Comfort	Yes	Mid	Bad	Not
6	Hot	Yes	High	NG	Not
7	Cool	No	Low	Bad	Yes
8	Hot	No	Low	Good	Yes
9	Comfort	No	Low	Bad	Yes
10	Hot	Yes	Mid	Good	Not
11	Comfort	No	High	Good	Yes
12	Cool	No	Mid	NG	Yes
13	Cool	Yes	High	NG	Not
14	Comfort	Yes	Mid	NG	Not

SECTION-II

3 ***A*** .An aptitude test and statistics tests was conducted randomly for 5 students and the scores were depicted in the table. **[10M]**

Student	Aptitude score	Statistics score
1	60	70
2	70	85

3	80	65
4	85	95
5	95	70

Based on math aptitude ratings, which linear regression equation best predicts statistics performance?

What grade would we anticipate a student to get in statistics if the student scored an 80 on the aptitude test?

B Compare the Multi linear regression, Polynomial regression, and Logistic regression. Provide the applications of each. **[4M]**

OR

4 ***A*** **Apply** K nearest neighbor classifier to predict the Sugar of diabetic patient with the given features BMI, Age. Assume K=3, **Test Example BMI=43.6, Age=40, Sugar=?** If the training examples are **[10M]**

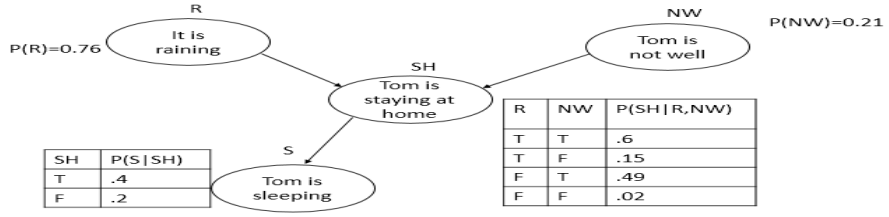
BMI	Age	Sugar
33.6	50	1
26.6	30	O
23.4	40	O
43.1	67	O
35.3	23	1
35.9	67	1
36.7	45	1
25.7	46	O
23.3	29	O
31	56	1

B What is case based reasoning explain with an example. **[4M]**

SECTION-III

5 ***A*** Write the steps in Naive Bayes algorithms for learning and classifying text. **[4M]**

B Apply Bayesian belief network, **[10M]**



SH	P(S|SH)
T	.4
F	.2

R	NW	P(SH|R,NW)
T	T	.6
T	F	.15
F	T	.49
F	F	.02

What is the probability that Tom is not sleeping although it is raining heavily and he is not well? He was upset that he could not join for the sleep over in his friend's home and his mom forced him to stay at home.

OR

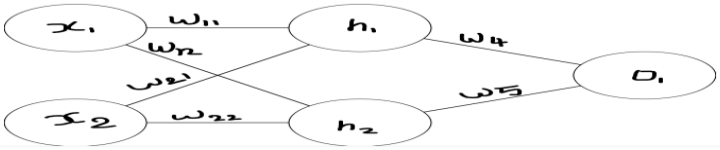
6 A Describe the naive Bayes theorem in text classification **[7M]**

B What are the limitations of Bayes optimal classifier? Explain how does the Gibbs algorithm tries to resolve the issues. **[7M]**

SECTION-IV

7 ***A*** Explain the steps in of the BACKPROPAGATION algorithm for feedforward networks that contains two layers of sigmoid units. **[7M]**

B Consider the Artificial Neural Network with the following values **[7M]**
X1=1,x2=0, w11=0.25,w12=0.10,w21=0.15,w22=0.1,w4=0.3,w5=0.4,b1 to h_1 and h_2=1 and bias b2 to O_1=1. Assume the actual output=0.95. Find the predicted output. Find the error and through backpropagation, find out the weights of w4 and w5 provided learning rate =0.3.



Input values x1, and x2, randomly assigned weights are w1, w2, w3, w4, w5, w6, w7 and w8. Target values o1 = 0.05 and o2 = 0.95. Bias values b1 and b2.

Use the sigmoid activation function. Learning rate $\alpha = 0.5$.

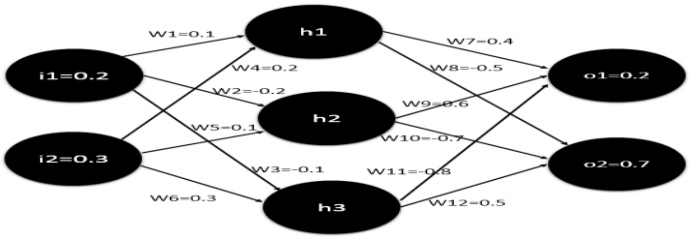
OR

8 Consider the following neural network with the input, output and weight parameters values shown in the diagram. The activation values in each neuron is calculated using the sigmoid activation function. Now, answer the following: **[14M]**

a. For the given input i1 and i2 as shown in the diagram, compute the output of the hidden layer and output layer neurons.

b. Compute the error in the network with the initialized weight parameters shown in the diagram.

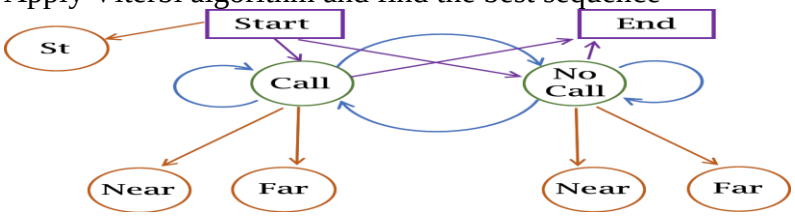
c. Update the weight parameters for w7 and w8 using backpropagation algorithm in the first iteration. Consider learning rate as 0.01.



SECTION-V

9 ***A*** Illustrate how to find the state sequence with any example. **[4M]**

B Apply Viterbi algorithm and find the best sequence 10 **[10M]**



	Call	NoCall	End
Start	0.7	0.3	0
Call	0.2	0.7	0.1
NoCall	0.7	0.2	0.1

State transition probabilities

	St	Near	Far
Start	1	0	0
Call	0	0.7	0.3
NoCall	0	0.4	0.6

Emission probabilities

Find the hidden state sequence for Near Far Far.

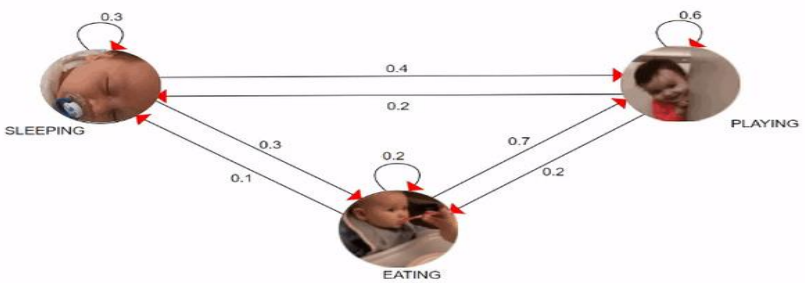
OR

10 ***A*** Describe the three states in Hidden Markov Models. **[4M]**

B Find out the transition matrix from the below diagram. Assume the initial probabilities for sleeping, eating and playing are denoted as $\pi = \{0.25, 0.25, 0.50\}$.

i.Find the probability of the series .Baby is sleeping, sleeping, eating, playing ,playing, sleeping. **[5M]**

ii. Find the probability of baby playing given baby is eating . **[5M]**



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R17

Code No: R17A0534

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

IV B.Tech- II Semester Advance Supplementary Examinations, July 2022

Machine Learning

(CSE)

Roll No										

Time: 3 hours **Max. Marks: 70**

Answer Any **Five** Questions
All Questions carries equal marks.

***

1 Briefly explain about the various learning models in machine learning. **[14M]**

2 a) Define VC dimension. How VC dimension is related with no of training examples used for learning. **[8M]**

b) Briefly explain about PAC learning framework. **[6M]**

3 a) What are the benefits of pruning in decision tree induction? Explain different approaches to tree pruning? **[8M]**

b) Explain the concept of a Perceptron with a neat diagram. **[6M]**

4 a) Explain how Support Vector Machine can be used for classification of linearly separable data. **[8M]**

b) Give a detail note on kernel functions. **[6M]**

5 Describe boosting and ADA boosting algorithm with neat sketch **[14M]**

6 Explain the concept of EM Algorithm with Gaussian Mixtures model. **[14M]**

7 Summarize about the Q-learning model and explain with diagram **[14M]**

8 a) List out the Genetic algorithm steps with example. **[7M]**

b) Illustrate the prototypical genetic algorithm. **[7M]**

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R18

Code No: R18A0526

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

IV B.Tech I Semester Supplementary Examinations, June 2022

Machine Learning

(CSE & IT)

Roll No										

Time: 3 hours **Max. Marks: 70**

Answer Any **Five** Questions
All Questions carries equal marks.

***

1	Define Machine Learning? Explain different Types of Learning with example each?	**[14M]**
2	Explain about probabilistic and geometric models in machine learning?	**[14M]**
3	What is the difference between logistic regression and linear regression give an example?	**[14M]**
4	Write short notes on: a)Multiple regression b) Back propagation algorithm	 **[7M]** **[7M]**
5	Analyze the Expectation-Maximisation (EM) Algorithm with an example?	**[14M]**
6	Explain K-Nearest Neighbor(KNN) Algorithm with an example and list the advantages and disadvantages of K-NN	**[14M]**
7	a) What is the goal of the support vector machine (SVM)? How to compute the margin? b)What are the elements of reinforcement learning?	**[7M]** **[7M]**
8	Explain Genetic Programming with an example? And What are the operators of genetic algorithm?	**[14M]**

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R17

Code No: R17A0534

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

IV B.Tech- II Semester Supplementary Examinations, May 2022

Machine Learning

(CSE)

Roll No										

Time: 3 hours **Max. Marks: 70**

Note: This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing ONE Question from each SECTION and each Question carries 14 marks.

***

SECTION-I

1 a) Explain the useful perspectives of machine learning in different applications. **[7M]**

b) Describe in detail the rule for estimating training values. **[7M]**

OR

2 a) Differentiate between Supervised, Unsupervised and Reinforcement Learning. **[7M]**

b) Define the terms Hypothesis space and Version space. Illustrate with an example. **[7M]**

SECTION-II

3 a) Give the necessary steps and limitations of ID3 algorithm. **[7M]**

b) Explain about the linear regression. **[7M]**

OR

4 a) Explain how Support Vector Machine can be used for classification of linearly separable data. **[7M]**

b) Elucidate K-means algorithm with neat diagram. **[7M]**

SECTION-III

5 a) Describe the random forest algorithm to improve classifier accuracy **[7M]**

b) Explain the concept of Bagging with its uses? **[7M]**

OR

6 a) How can be the data classified using KNN algorithm with neat sketch? **[7M]**

b) Discuss the various distance measure algorithms. **[7M]**

SECTION-IV

7 a) Write about the learning Rule sets. **[7M]**

b) Write some common evaluation functions in the learning rule sets. **[7M]**

OR

8 Explain normal and Binomial Distributions with an example. **[14M]**

SECTION-V

9 a) Discuss about the mutation operator. **[7M]**

b) Examine how genetic algorithm searches large space of candidate objects with an example with fitness function **[7M]**

OR

10 Assess the parallelizing Genetic Algorithms with an example. **[14M]**

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MALLA REDDY COLLEGE OF ENGINEERING &TECHNOLOGY
(Autonomous Institution – UGC, Govt. of India)

B. Tech III Year II Semester Examinations

Wireless Communications

(Electronics Communication and Engineering)

SECTION-I

1. a) Briefly explain mobile radio evolution. [7M]

b) Briefly compare the common wireless communication systems. [7M]

OR

2. a) Explain about 2G and 3G cellular networks. [7M]

b) Explain about WLL and WLAN. [7M]

SECTION-II

3. a) Write a short note on Fresnel zone geometry and Knife edge diffraction model? [7M]

b) Explain the terms signal penetration into buildings and Ray tracing and site specific modeling? [7M]

OR

4. a)Explain about reflection from perfect conductors and Ground reflection model.

b) Explain any two outdoor propagation models. [14M]

SECTION-III

5. a) What are factors influencing small scale fading? [7M]

b) Explain briefly about parameters of mobile multipath channels? [7M]

OR

6. a) Explain different types of small scale fading? [7M]

b) Explain briefly about Two -ray Rayleigh fading model? [7M]

SECTION-IV

7. a) Explain different types of WLAN Topologies? [7M]

b) Compare standards of I EEE 802.11 a, b, g and n standards? [7M]

OR

8. a) Explain briefly IEEE 802.11 medium access control? [7M]

b) Explain briefly about WLAN & WLL? [7M]

SECTION-V

9. a) Explain the functional requirements of HYPERLAN. [7M]

b) Explain the functioning of WATM with basic architecture. [7M]

OR

10. a)Explain about data oriented CDPD network. [7M]

b) Write short note on GSM and GPRS [7M]

MALLA REDDY COLLEGE OF ENGINEERING &TECHNOLOGY
(Autonomous Institution – UGC, Govt. of India)

B. Tech III Year II Semester Examinations

Wireless Communications

(Electronics Communication and Engineering)

SECTION-I

1. a) Briefly explain about paging systems. [7M]

b) Briefly explain modern wireless communication systems. [7M]

OR

2. a) Write note on trends in cellular radio and personal communications. [7M]

b) Write note on Bluetooth and PAN. [7M]

SECTION-II

3. a) Explain the basic propagation mechanisms. [7M]

b) Explain any two indoor propagation models. [7M]

OR

4. a)Write a note on reflection from dielectrics and Brewster angle. [7M]

b) Explain Longley Ryce outdoor propagation model. [7M]

SECTION-III

5. a) Explain impulse response model of a multipath channel and derive relationship between bandwidth and received power. [7M]

b) Explain briefly about parameters of mobile multipath channels? [7M]

OR

6. Explain different types of small scale fading? [7M]

b) Explain clarets model for flat fading? [7M]

SECTION-IV

7. a) Write note on IEEE 802.11 architecture and services. [7M]

b)Write note on Bluetooth and IEEE 802.15 standard. [7M]

OR

8. Explain briefly about IEEE 802.11 standards? [7M]

b)Explain briefly about different specifications of IEEE 802.15. [7M]

SECTION-V

9. a)Write note on the specifications of HYPERLAN-2. [7M]

b) Write note on GPRS and higher data rates. [7M]

OR

10.a)Explain the similarities between HYPERLAN 1 and HYPERLAN 2. [7M]

b)Write short note on short messaging service in GSM. [7M]

MALLA REDDY COLLEGE OF ENGINEERING &TECHNOLOGY
(Autonomous Institution – UGC, Govt. of India)

B. Tech III Year II Semester Examinations

Wireless Communications

(Electronics Communication and Engineering)

SECTION-I

1. a) Briefly explain about WLL and LMDS. [7M]

b) Briefly explain the evolution of mobile radio communication. [7M]

OR

2. a) Explain about different wireless communication systems. [7M]

b) Write note on 2G and 3G cellular networks. [7M]

SECTION-II

3. a) Explain knife-edge diffraction model and multiple knife-edge diffraction. [7M]

b) Explain Okumura and Hata models. [7M]

OR

4. a)Write a note on indoor propagation models. [7M]

b) Explain free space propagation model. [7M]

SECTION-III

5. a) What are factors influencing small scale fading? [7M]

b) Explain briefly about Two -ray Rayleigh fading model? [7M]

OR

6. a) Explain briefly about parameters of mobile multiparty channels.

b) Explain simulation of Clarke and Guns fading model?

SECTION-IV

[7M]

7. a) Describe WLAN standards. [7M]

b)Write note on IEEE 802.15 logical link control and adaptation protocol. [7M]

OR

8. Explain briefly about IEEE 802.11 medium access control layer. [7M]

b)Explain briefly about WLAN and Bluetooth. [7M]

SECTION-V

9 a) Explain briefly about mobile data networks. [7M]

b) Write note on HYPERLAN specifications. [7M]

OR

10. a)Explain the frame format of Wireless ATM

b) Write short note on mobile application protocols. [14M]

MALLA REDDY COLLEGE OF ENGINEERING &TECHNOLOGY
(Autonomous Institution – UGC, Govt. of India)

B. Tech III Year II Semester Examinations

Wireless Communications

(Electronics Communication and Engineering)

SECTION-I

1.	Explain the various types of Handoff processes available.	[14]
	OR	
2.	Explain in detail about Trunking and Grade of Service.	[14]
3. a)	Explain knife Edge Diffraction Model.	
b)	With neat diagrams explain the Free Space Propagation Model.	[7+7]
	OR	
4.	Derive the Impulse response model of a Multipath channel.	[14]
5.	Discuss in detail different types of small scale fading.	[14]
	OR	
6.	What is small scale fading? What are the factors influencing small scale fading?	[10]
7.	Explain LMS and Recursive Least Square algorithm.	[14]
	OR	
8.	Derive the expression for Maximal Ratio Combining Improvement.	[14]
9. a)	Draw the configuration of IEEE802.11 architecture.	
b)	Explain the physical layer specifications of IEEE802.11 using infrared.	[7+7]
	OR	
10.	Compare and contrast IEEE 802.11 a, b, g and n standards.	[14]