



# MALLA REDDY ENGINEERING COLLEGE FOR WOMEN

(Autonomous Institution – UGC, Govt. of India)

(Affiliated to JNTU, Hyderabad, Approved by AICTE - - ISO 9001:2015 Certified)

Accredited by NBA & NAAC – 'A' Grade

National Ranking by NIRF - Rank band (151-300), MHRD, Govt. of India

## B.TECH IV YEAR I SEMESTER REGULAR EXAMINATIONS, NOVEMBER - 2023

### 5G TECHNOLOGY

(COMMON TO CSE, CSE-AIML, CSE-CS, CSE-DS, CSE-IOT, IT)

[Time: 3 Hours]

[Max. Marks: 70]

#### PART – A

(5 x 2 = 10M)

- Note:**
1. This Part consists of 8 QUESTIONS.
  2. Answer any 5 questions. Each question carries 2 Marks

1	A	Define base station and mobile station.	2M	BTL1
	B	List the advantages of Microcell Zone Concept.	2M	BTL2
	C	Define handoff.	2M	BTL1
	D	What is meant by GFDM.	2M	BTL1
	E	Compare the features of FDMA and TDMA.	2M	BTL2
	F	Explain orthogonal frequency division multiple accesses (OFDMA).	2M	BTL2
	G	What do you mean by M2M.	2M	BTL1
	H	Define MIMO systems.	2M	BTL1

#### PART – B

(5 x 12 = 60M)

- Note:**
1. This Part consists of 10 QUESTIONS
  2. Answer any 1 question from each Section. Each question carries 12Marks.
  3. Illustrate your answers with NEAT sketches wherever necessary.

#### SECTION - I

2.A	Explain evaluation of Cellular Network.	6M	BTL2
2.B	Discuss the advancements in CDMA technology and the challenges faced during the migration to higher generations of mobile communication.	6M	BTL3

(OR)

3.A	Explain in detail about the various cellular components.	6M	BTL2
3.B	Explain the concept of frequency reuse in detail.	6M	BTL2

#### SECTION - II

4.A	Differentiate hard handoff and soft handoff.	6M	BTL3
4.B	Consider a real time scenario and explain the handoff operation.	6M	BTL4

(OR)

5.A	Explain any three types of handoff.	6M	BTL3
-----	-------------------------------------	----	------

5.B	Write a short note on handoff initiation process.	6M	BTL2
-----	---	----	------

**SECTION - III**

6.A	Describe the requirements of the 5G wireless communication.	6M	BTL4
6.B	Discuss the rationale behind selecting these specific frequency bands and the advantages they offer for 5G network deployments.	6M	BTL4

**(OR)**

7.A	Discuss detail on modulation techniques of 5G wireless communication.	6M	BTL4
7.B	Write a short note on Non-orthogonal Multiple accesses.	6M	BTL2

**SECTION – IV**

8.A	Compare TDMA with other multiple access techniques, such as FDMA and CDMA. Discuss the advantages of TDMA	6M	BTL4
8.B	Discuss the advancements in CDMA technology and the challenges faced during the migration to higher generations of mobile communication.	6M	BTL4

**(OR)**

9.A	Describe the working principle of Frequency Division Multiple Access (FDMA) in wireless communication.	6M	BTL4
9.B	Explain how FDMA divides the available frequency spectrum to accommodate multiple users and allocate dedicated channels to each user for data transmission.	6M	BTL3

**SECTION – V**

10.A	Explain the standardization of 5G.	6M	BTL3
10.B	Illustrate the device to device and machine to machine communication with the comparison.	6M	BTL4

**(OR)**

11.A	Explain the concept of mm Wave (millimetre-wave) spectrum allocation in 5G. What are the unique characteristics of mm Wave frequencies, and how do they impact 5G network performance and coverage?	6M	BTL3
11.B	Discuss the challenges and strategies for overcoming propagation limitations in mm Wave bands.	6M	BTL4

-----\*\*\*-----



# MALLA REDDY ENGINEERING COLLEGE FOR WOMEN

(Autonomous Institution – UGC, Govt. of India)

(Affiliated to JNTU, Hyderabad, Approved by AICTE - - ISO 9001:2015 Certified)

Accredited by NBA & NAAC – 'A' Grade

National Ranking by NIRF - Rank band (151-300), MHRD, Govt. of India

## B.TECH IV YEAR I SEMESTER REGULAR EXAMINATIONS, NOVEMBER-2023

### BUSINESS ANALYTICS (COMMON TO CSE & IT)

[Time: 3 Hours]

[Max. Marks: 70]

#### PART – A

(5 x 2= 10M)

- Note:** 1. This Part consists of 8 QUESTIONS  
2. Answer any 5 questions. Each question carries 2 1Mark

1	A	Is Data Preprocessing is Necessary? Justify your answer	2M	BTL2
	B	Compare and Contrast ARMA and ARIMA.	2M	BTL3
	C	What are the steps involved in Analysis of Data?	2M	BTL1
	D	List any two applications and describe why the Time Series Analysis is needed in those applications.	2M	BTL1
	E	Describe Variable Rationalization	2M	BTL1
	F	What is Chernoff Faces technique?	2M	BTL1
	G	Distinguish between Supervised and Unsupervised learning.	2M	BTL1
	H	What are the advantages of Data Visualization?	2M	BTL1

#### PART – B

(5 x 12 = 60M)

- Note:** 1. This Part consists of 10 QUESTIONS  
2. Answer any 1 question from each Section. Each question carries 12Marks.  
3. Illustrate your answers with NEAT sketches wherever necessary.

#### SECTION - I

2.A	Illustrate techniques of missing values treatment with example.	6M	BTL1
2.B	Data set D {10K, 15K, 22K, 25K, 36K, 40K, 13K, 19K, 88K, 94K} represents packages of the students placed in an interview where "K represents thousand". Identify the outliers in the data set and analyze its impact in studying the spread of data.	6M	BTL1

(OR)

3.A	Briefly describe various sources of data like sensors, signals, GPS in data management	4M	BTL1
3.B	Explain about data quality and data preprocessing.	8M	BTL1

#### SECTION - II

4.A	Demonstrate the various steps involved in data analytics and discuss the tools and environment needed for analytics.	6M	BTL1
4.B	Illustrate data imputations techniques.	6M	BTL1

(OR)

5.A	Contrast nominal, ordinal and ratio-scaled data.	6M	BTL1
-----	--	----	------

5.B	Explain the applications of data modeling in business.	6M	BTL1
-----	--	----	------

**SECTION - III**

6.A	What is meant by BLUE property? What are the blue properties of OLS method?	6M	K2
6.B	Discuss in detail about Multinomial Logistic Regression.	6M	K2

(OR)

7.A	Apply linear regression using the method of least squares to the following data and predict the crop yield for rain fall of 5 cm.										8M	BTL1
	Rain Fall(cm)	10.5	8.8	13.4	12.5	18.8	7	15.6	10.3	16		
	Yield (Quintal per Acre)	30.3	46.2	58.8	59.0	82.4	31.9	76.0	49.2	78.8		
7.B	Elucidate analytical applications to various business domains.										4M	BTL1

**SECTION – IV**

8.A	Outline major steps of decision tree classification with a suitable example.	6M	BTL1
8.B	Discuss the STL approach for Time Series Decomposition.	6M	BTL1

(OR)

9.A	What is Overfitting? How to Prevent Overfitting?									4M	BTL1	
9.B	Illustrate different measures of forecast accuracy. Evaluate the measures on the following example.									8M	BTL1	
	Week	1	2	3	4	5	6	7	8			9
	Actual Sales	18	14	21	15	20	23	24	18			25
	Forecast	25	18	17	14	22	17	21	23			24

**SECTION – V**

10.A	Describe parallel coordinates and landscapes for geometric data visualization	6M	BTL1
10.B	Explain the challenges in visualizing complex data and relations and suggest suitable mechanisms to address them.	6M	BTL1

(OR)

11.A	How to perform visualization of the data using a hierarchical partitioning into subspaces? Explain with examples.	6M	BTL1
11.B	Interpret on 'pixel-oriented visualization' with example	6M	BTL1

-----\*\*\*-----



# MALLA REDDY ENGINEERING COLLEGE FOR WOMEN

(Autonomous Institution – UGC, Govt. of India)

(Affiliated to JNTU, Hyderabad, Approved by AICTE - - ISO 9001:2015 Certified)

Accredited by NBA & NAAC – 'A' Grade

National Ranking by NIRF - Rank band (151-300), MHRD, Govt. of India

## B.TECH IV YEAR I SEMESTER REGULAR EXAMINATIONS, NOVEMBER-2023

### MACHINE LEARNING

(COMMON TO CSE, CSE – DS, CSE-CS, CSE-IOT, IT)

[Time: 3 Hours]

[Max. Marks: 70]

#### PART – A

(5 x 2 = 10M)

- Note:**
1. This Part consists of 8 QUESTIONS
  2. Answer any 5 questions. Each question carries 2 Marks.

1	A	What is reinforcement?	2M	BTL1
	B	Define Grouping.	2M	BTL1
	C	What you meant by regression?	2M	BTL1
	D	Define validation.	2M	BTL1
	E	Define boosting.	2M	BTL1
	F	Mention the use of Decision Tress.	2M	BTL1
	G	Why Clustering is need? Justify.	2M	BTL4
	H	Mention the use of direct utility estimation.	2M	BTL2

#### PART – B

(5 x 12 = 60M)

- Note:**
1. This Part consists of 10 QUESTIONS
  2. Answer any 1 question from each Section. Each question carries 12Marks.
  3. Illustrate your answers with NEAT sketches wherever necessary.

#### SECTION - I

2.A	Justify the need for feasibility of learning.	6M	BTL3
2.B	Differentiate training versus testing.	6M	BTL2

(OR)

3.	Write Short notes on 1)geometric models ii) probabilistic models	12M	BTL2
----	---	-----	------

#### SECTION - II

4.A	Define Multiclass Classification with a neat diagram?	6M	BTL3
4.B	Write a detail note on naïve bayes linear models.	6M	BTL2

(OR)

5.A	Explain the following Linear regression	6M	BTL3
5.B	Logistic Regression	6M	BTL2

**SECTION - III**

6.A	Define clustering. What are the different types of clustering explain in detail?	12M	BTL3
-----	--	-----	------

(OR)

7.A	Explain in detail the concept of Kernel and K- Means?	6M	BTL3
7.B	Write Short notes on ensemble learning.	6M	BTL2

**SECTION – IV**

8.	Define Rule Based Classification. Explain any two Rule Classifications?	12M	BTL3
----	---	-----	------

(OR)

9.A	Does Decision Tree require Feature Scaling?	6M	BTL3
9.B	Explain the Structure of Decision trees?	6M	BTL2

**SECTION – V**

10.A	Explain key terms in reinforcement learning?	6M	BTL2
10.B	State key features of reinforcement learning.	6M	BTL3

(OR)

11.A	Why direct utility estimation plays vital role in Reinforcement Learning Justify it.	6M	BTL3
11.B	Discuss about policy search.	6M	BTL3

-----\*\*\*-----



# MALLA REDDY ENGINEERING COLLEGE FOR WOMEN

(Autonomous Institution – UGC, Govt. of India)

(Affiliated to JNTU, Hyderabad, Approved by AICTE - - ISO 9001:2015 Certified)

Accredited by NBA & NAAC – 'A' Grade

NIRF India Ranking, Accepted by MHRD, Govt. of India

## B.TECH IV YEAR I SEMESTER SUPPLY EXAMINATIONS, NOVEMBER-2023

### MICROPROCESSOR AND INTERFACING

(COMMON TO CSE, IT)

[Time: 3 Hours]

[Max. Marks: 70]

#### PART – A

(5 x 2 = 10M)

- Note:** 1. This Part consists of 8 QUESTIONS  
2. Answer any 5 questions. Each question carries 2 Marks.

1	A	Discuss the advantages of segmentation in 8086.	2M	BTL1
	B	Explain the difference between the machine language and the assembly language of the 8085 microprocessor.	2M	BTL1
	C	List the features of the parallel ports of the 8251 microcontroller.	2M	BTL2
	D	List the four operations commonly performed by the MPU.	2M	BTL2
	E	Solve, Why is the data bus bidirectional?	2M	BTL3
	F	Formulate the vectored interrupts?	2M	BTL6
	G	Evaluate the functions of Handshake signals.	2M	BTL5
	H	Discuss the bit pattern of the accumulator for SIM instruction.	2M	BTL2

#### PART – B

(5 x 12 = 60M)

- Note:** 1. This Part consists of 10 QUESTIONS  
2. Answer any 1 question from each Section. Each question carries 12Marks.  
3. Illustrate your answers with NEAT sketches wherever necessary.

#### SECTION - I

2.A	Formulate the sequence of events that occurs when the 8085 MPU reads from memory.	5M	BTL5
2.B	Select the memory word size required in an 8085 system.	7M	BTL2

(OR)

3.A	Relate the differences between the minimum mode and maximum mode operation of 8086.	5M	BTL4
3.B	Describe the interrupt and interrupt response of an 8086 family process with a neat sketch.	7M	BTL2

#### SECTION - II

4.A	Discuss the organization and architecture of the 8255 programmable peripheral interface with its functions	8M	BTL2
4.B	Explain how high power devices are interfaced to 8086 using 8255 PPI	4M	BTL2

(OR)

5.A	Describe the lower order address bus is multiplexed with the data bus. How they will be de-multiplexed?	7M	BTL4
5.B	(b) Differentiate between maskable and non-maskable interrupts.	5M	BTL3

**SECTION - III**

6.A	Discuss the various addressing modes of 8086. What are displacement, base, and index? What is an effective address or offset?	7M	BTL3
6.B	Discuss how 8253 is used for handling interrupts	5M	BTL2

(OR)

7.A	Recognize and Write an 8086 program to add two 16-bit numbers in CX and DX and store the result in location 0500H addressed by DI.	8M	BTL1
7.B	Discuss the Memory classification in detail	4M	BTL2

**SECTION – IV**

8.A	Execute in which mode of I/O operation Bi-directional data transfer takes place to explain.	6M	BTL5
8.B	Identify what is 8254. Discuss its various operating modes. What are its areas of application?	6M	BTL2

(OR)

9.A	Explain (i) ALU (ii) Program counter (iii) Instruction decoder.	8M	BTL2
9.B	Support USART in detail.	4M	BTL4

**SECTION – V**

10.A	Identify the purpose of the IF flag in handling the interrupts.	4M	BTL2
10.B	Examine what type of interrupt is associated with the TF flag. What is the vector address? Explain the use of this interrupt.	8M	BTL4

(OR)

11.A	Explain the functional diagram of the keyboard and display controller.	5M	BTL2
11.B	What is 8255? Discuss its various operating modes. What are its areas of application?	7M	BTL4

-----\*\*\*-----





# MALLA REDDY ENGINEERING COLLEGE FOR WOMEN

(Autonomous Institution – UGC, Govt. of India)

(Affiliated to JNTU, Hyderabad, Approved by AICTE - - ISO 9001:2015 Certified)

Accredited by NBA & NAAC – 'A' Grade

National Ranking by NIRF - Rank band (151-300), MHRD, Govt. of India

## B.TECH IV YEAR I SEMESTER REGULAR EXAMINATIONS, NOVEMBER - 2023

### MOBILE APPLICATION DEVELOPMENT

(IT)

[Time: 3 Hours]

[Max. Marks: 70]

#### PART – A

(5 x 2 = 10M)

- Note:**
1. This Part consists of 8 QUESTIONS
  2. Answer any 5 questions. Each question carries 2 Marks.

1	A	What is android? Explain its significance	2M	BTL1
	B	What is the need to create Android Virtual Devices?	2M	BTL1
	C	What is Eclipse IDE? Why do you need it?	2M	BTL1
	D	What are the four layers of the Android Software Stack?	2M	BTL1
	E	List 4 attributes used to align content within a control or a container?	2M	BTL1
	F	Explain Activity and Intent to run android application	2M	BTL2
	G	Explain radio data networks	2M	BTL2
	H	Explain MIDlet Suite	2M	BTL2

#### PART – B

(5 x 12 = 60M)

- Note:**
1. This Part consists of 10 QUESTIONS
  2. Answer any 1 question from each Section. Each question carries 12Marks.
  3. Illustrate your answers with NEAT sketches wherever necessary.

#### SECTION - I

2.A	Draw and explain the different layers of the Android Software Stack	6M	BTL2
2.B	Explain the steps required to create an Android Virtual Device in Eclipse IDE.	6M	BTL2

(OR)

3.A	What is Dalvik Virtual machine? What is its function?	6M	BTL1
3.B	Explain how the SDK manager could be used to download and install the important SDK packages required for the Android development environment.	6M	BTL2

**SECTION - II**

4.A	What is the use of Button, EditText, CheckBox and ToggleButton widgets?	6M	BTL1
4.B	What are the three ways in which events could be handled in an Android application?	6M	BTL1

(OR)

5.A	Compare RadioButton controls with Checkbox controls.	6M	BTL3
5.B	Compare EditText and TextView controls.	6M	BTL3

**SECTION - III**

6.A	What is a container in Android? What are its other names? What factors of its children views are decided by the container?	6M	BTL1
6.B	How Record Management System done in Android. Explain in detail	6M	BTL1

(OR)

7.A	What is Canvas. How Canvas is useful for user interaction	6M	BTL1
7.B	Write a Android program to sort and search records using Record Listener.	6M	BTL1

**SECTION – IV**

8.A	Explain Activity and its life cycle.	6M	BTL2
8.B	What are the two types of intents in Android? Explain.	6M	BTL1

(OR)

9.A	What is JDBC. Explain various JDBC Driver Types	6M	BTL2
9.B	Write a JDBC Program to use Statement, ResultSet Classes to perform various DML Operations in Database	6M	BTL1

**SECTION – V**

10.A	Develop an Android application to illustrate adaptation to screen orientation.	6M	BTL3
10.B	Illustrate the application of orientation attribute to a linear layout with sample code and user screens.	6M	BTL2

(OR)

11.A	Write Android code to display TimePicker in a Dialog Window.	6M	BTL1
11.B	What are the two ways to populate a ListView control?	6M	BTL1

-----\*\*\*-----