Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 20CE111

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B. Tech III Year II Semester (R20) Supplementary End Semester Examinations, January– 2025

GEOTECHNICAL ENGINEERING

(Civil Engineering)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q. No		Question	Marks	CO	BL
Q.1	i.	Which test is suitable for the field problem where there is a chance of sudden drawdown (that occurs in earth dam or canal embankment)	1M	1	1
	ii.	What do you mean by Liquid Limit	1M	1	1
	iii.	Write the relationship between void ratio and porosity	1M	2	1
	iv	Define Residual Soils	1M	2	2
	v.	Write short note on organic soils	1M	3	1
	vi	Write the difference between the consolidation and compaction	1M	3	2
	vii.	If instead of single drainage, the number of drainage faces is increased to two in corresponding soils, the rate of consolidation will be	1M	4	1
	viii.	Which of the expression is used to calculate the value of earth pressure for active condition (Ka)?	1M	4	1
	ix.	What do you mean by factor of safety	1M	5	1
	x.	Explain the concept of Mohr – Coulomb Failure	1M	5	2
Q.2(A)		(i) Differentiate between 'residual' and 'transported' soils. (ii)What do you mean by Liquid Limit, (iii) Define shrinkage limit, (iv) Write the major type of soils found in India? (v) write formula for Plastic index	10M	1	2
		OR			
Q.2(B)		A sample of saturated soil has a water content of 35%. The specific gravity of solids is 2.65. Determine its void ratio, porosity, saturated unit weight and dry unit weight.	10M	1	4
Q.3(A)		Compute the total, effective and pore pressure at a depth of 15 m below the bottom of a lake 6 m deep. The bottom of the lake consists of soft clay with a thickness of more than 15 m. The average water content of the clay is 40% and the specific gravity of soils may be assumed to be 2.65.	10 M	2	4
		OR			
Q.3(B)		The discharge of water collected from a constant head permeameter in a period of 15 minutes is 500 ml. The internal diameter of the permeameter is 5 cm and the measured difference in head between two gauging points 15 cm vertically apart is 40 cm. Calculate the coefficient of permeability. If the dry weight of the 15 cm long sample is 4.86 N and the specific gravity of the solids is 2.65, calculate the seepage velocity.	10M	2	4
Q.4(A)		What is the mechanism of compaction and explain the factors affecting compaction	10M	3	3
		OR			
Q.4(B)		(i) Explain the Mohr-Coulomb strength envelope (ii) Explain the principle of the direct shear test. What are the advantages of this test?	5M 5M	3	4
Q.5(A)		A cylindrical specimen of a saturated soil fails under an axial stress 150 kN/m^2 in an unconfined compression test. The failure plane makes an angle of 52° with the horizontal. Calculate the cohesion and angle of internal friction of the soil.	10M	4	3
		OR			

Q.5(B)	(i) What are the assumptions made in Terzaghi's One dimensional consolidation.	5M	4	4
	(ii) In a consolidation test the following results have been obtained when the load was changed from 50kN/m² to 100kN/m², the void ratio changed from 0.70 to 0.65. Determine the coefficient of volume decrease mv and the compression index Cc.	5M	4	4
Q.6(A)	How to find the bearing capacity of soil in field and explain any two methods in-detail	10 M	5	4
	OR			
Q.6(B)	In your opinion which is the best to equation among (Terzaghi and IS) evaluate the beating capacity of soil and explain why.	10M	5	4

***** END*****

Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 20CE112

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B. Tech III Year II Semester (R20) Supplementary End Semester Examinations, January – 2025

TRANSPORTATION ENGINEERING

(Civil Engineering)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q.No		Question	Marks	CO	BL
Q.1	i.	What is medians?	1M	2	1
	ii.	What is pavement unevenness?	1M	2	1
	iii.	What is the basic requirement of a highway alignment?	1M	1	1
	iv	Classify types of roads?	1M	1	1
	v.	Define terms speed and density?	1M	3	2
	vi	What are the various types of intersection?	1M	4	1
	vii.	Explain channelization?	1M	4	2
	viii.	What is aggregate crushing test?	1M	4	1
	ix.	Explain penetration and ductility test on bitumen?	1M	4	2
	x.	What is full form of AASHTO?	1M	5	1
Q.2(A)		Discuss the objectives of highway planning? What are different types of classification of road? Explain the methods of classification of roads.	10M	1	2
		OR			
Q.2(B)		What are the salient features of cross-section of a Highway Alignment? How do you carried out the engineering surveys for deciding Highway Alignment?	10M	1	3
Q.3(A)		Calculate the SSD on a level road stretch for design speed of 80 kmph for (a) two-way traffic on a two lane road (b) two way traffic on a single lane road? Assume coefficient of friction as 0.37 and reaction time of driver as 2.5 seconds.	10M	2	4
		OR			
Q.3(B)		Define superelevation? why superelevation is important in geometric design of road?	10M	2	5
Q.4(A)		Explain in detail the various types of signals?	10M	3	2
		OR			
Q.4(B)		Discuss about the Principles of highway lighting.	10M	3	3
Q.5(A)		Discuss Barrier Free concept in Public Transportation. What are the various Barrier Free elements of Public transport,	10M	4	3
		OR			
Q.5(B)		What are the Importance of collective transportation and individual transportation.	10M	4	5
Q.6(A)		Discuss in detail the Role of harbors and ports in transportation.	10M	5	2
		OR			
Q.6(B)		What are the different type of urban transit system?	10M	5	2

***** END*****

Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 20CE113

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

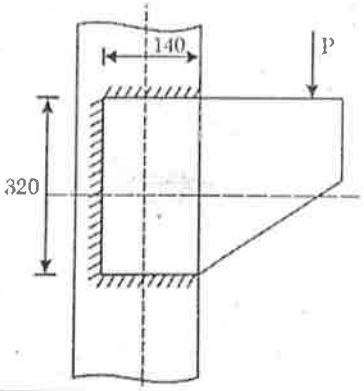
B. Tech III Year II Semester (R20) Supplementary End Semester Examinations, January – 2025

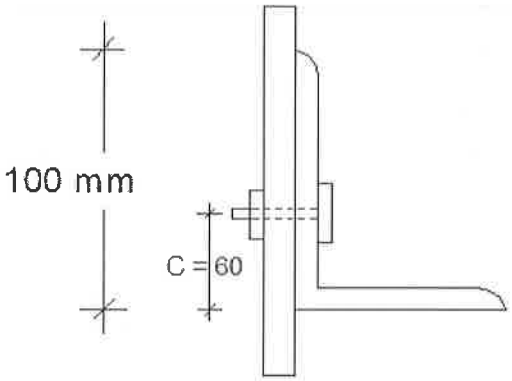
DESIGN OF STEEL STRUCTURES

(Civil Engineering)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q. No		Question	Marks	CO	BL
Q.1	i.	Write any two advantages and disadvantages of bolted connection over welded connection.	1M	1	1
	ii.	What is the relationship between size of weld and throat thickness?	1M	1	2
	iii.	Define the shear lag effect.	1M	2	1
	iv	Define laterally supported beam and laterally unsupported beam.	1M	2	1
	v.	Differentiate between the column and strut?	1M	3	1
	vi	Define and Classification of built-up compression member.	1M	3	2
	vii.	What are the failure modes occurred in the plate girder?	1M	4	2
	viii.	In which situation the plate girder is most suitable instead of rolled steel section.	1M	4	2
	ix.	What are the forces acting on gantry girder?	1M	5	2
	x.	Write the deflection limits of gantry girder when it is carrying vertical loads as per IS 800: 2007	1M	5	2
Q.2(A)		(i) To determine the design shear capacity of 24 mm diameter bolt of grade 4.6.	4M	1	5
		(ii) Explain the advantages and disadvantages of steel structures.	6M	1	2
		OR			
Q.2(B)		Determine the maximum load that can be resisted by the bracket shown below by fillet weld of size 8 mm, if its workshop welding. Load is acting from column face at distance of 250 mm. Take strength of weld is 410 MPa. 	10M	1	5
Q.3(A)		Determine the tensile strength of a tie member ISA 100 x 75 x 6 mm, connected to a gusset plate using 4 bolts of M16, take pitch as 60mm and edge distance as 40mm as shown in below Figure. Also assume material properties fy = 250 N/mm^2, fu=410 N/mm^2, and E=2x10^5 N/mm^2.	10M	2	5



OR

Q.3(B)	Design a suitable I beam for simply supported span of 3 m with subjected to a dead load of 6 kN/m and live load of 20 kN/m. Assume the beam as fully lateral restraint & stiff bearing support of 100 mm, and fy = 250 N/mm^2, fu=410 N/mm^2, and E=$2x10^5$ N/mm^2.	10M	2	5
Q.4(A)	Design a column support an axial service load of 450 kN. The column has an effective length of 7 m with respect to z axis and 4.5 m with respect to the y axis. Also assume fy = 250 N/mm^2, fu=410 N/mm^2, and E=$2x10^5$ N/mm^2.	10M	3	5
	OR			
Q.4(B)	Determine the design axial load on the column section ISMB 350, given that the height of the column is 3.0 m and that it is pin ended. Also assume the following fy = 250 N/mm^2, fu=410 N/mm^2, and E=$2x10^5$ N/mm^2.	10M	3	5
Q.5(A)	Design a welded plate girder of span 25 m to carry an imposed load of 35 kN/m. Avoid to use bearing and intermediate stiffeners. Assume the material properties as follows: fy = 250 N/mm^2, fu=410 N/mm^2, and E=$2x10^5$ N/mm^2.	10M	4	5
	OR			
Q.5(B)	(i) Write the design procedure for the design of welded plate girder as per IS 800: 2007.	5M	4	2
	(ii) Explain the design of shear buckling resistance as per IS 800: 2007.	4M	4	2
Q.6(A)	(i) Write the impact load on gantry girder.	4M	5	2
	(ii) Explain step by step procedure to design gantry girder.	6M	5	2
	OR			
Q.6(B)	Design a hand operated travelling crane simply supported by gantry girder for given data. Span of gantry girder = 5 m, span of crane girder = 15 m, Crane capacity = 200 kN, Self-weight of crane girder excluding trolley =200 kN, Self-weight of trolley = 30 kN, Minimum hook approach = 1 m, Distance between wheels = 3.5 m c/c, Self-weight of rails = 0.3 kN/m. check for buckling and deflections not required.	10M	5	5

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Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 20EEE112

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B.Tech. III Year II Semester (R20) Supplementary End Semester Examinations – January 2025

MEASUREMENTS AND TRANSDUCERS

(EEE)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q.No		Question	Marks	CO	BL
Q.1	i.	Differentiate between the spring control and gravity control.	1M	1	1
	ii.	List the different essential torques in indicating instruments.	1M	1	1
	iii.	What is creeping in energy meters?	1M	2	1
	iv	Draw the LPF wattmeter circuit symbol.	1M	2	1
	v.	What is standardization in DC potentiometers?	1M	3	1
	vi	Give the expression for balancing condition of Wien's bridge.	1M	3	1
	vii.	Define DSO and DPO.	1M	4	1
	viii.	What are the applications of digital frequency Meter?	1M	4	1
	ix.	List the application of strain gauge.	1M	5	1
	x.	Define active transducers.	1M	5	1
Q.2(A)		With a neat diagram explain in detail the construction and working of PMMC instrument.	10M	1	2
		OR			
Q.2(B)		A moving-coil ammeter has a fixed shunt of 0.02 Ω. With a coil resistance of R = 1000 Ω and a potential difference of 500 mV across it. Full-scale deflection is obtained. (a) To what shunted current does it correspond? (b) Calculate the value of R to give full-scale deflection when shunted current I is 10 A.	10M	1	3
Q.3(A)		Explain the double element and three-element wattmeter and drive the equations.	10M	2	2
		OR			
Q.3(B)		Explain the single-phase induction type energy meter with proper sketch.	10M	2	2
Q.4(A)		With a neat diagram explain in detail the construction and working of a Polar type AC potentiometer.	10M	3	3
		OR			
Q.4(B)		With a neat diagram explain the loss of charge method.	10M	3	3
Q.5(A)		Explain Digital storage oscilloscope with relevant block Diagram.	10M	4	3
		OR			
Q.5(B)		Explain Q-meter with relevant block Diagram.	10M	4	3
Q.6(A)		Define Transducer, explain the principle and working of Inductive type transducer.	10M	5	3
		OR			
Q.6(B)		Explain Strain gauge and its working with neat sketch. ii) Explain Photo Diode with diagram.	10M	5	2

***** END*****

Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 20EEE113

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B. Tech III Year II Semester (R20) Supplementary End Semester Examinations, January – 2025

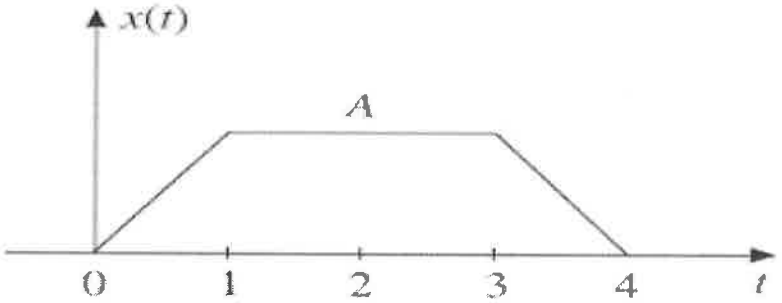
SIGNALS & SYSTEMS

(EEE)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q.No		Question	Marks	CO	BL
Q.1	i.	Define system.	1M	1	1
	ii.	State causal system.	1M	1	2
	iii.	Write the expression for $y_p(t)$ if input is $x(t) = e^{at}\,u(t)$	1M	2	1
	iv	Define Transfer Function.	1M	2	2
	v.	Write expression for calculating the trigonometric Fourier series coefficient a_n	1M	3	1
	vi	State frequency convolution theorem.	1M	3	1
	vii.	Define Bilateral Laplace transform.	1M	4	2
	viii.	Find the initial value of the following function $X(s) = \frac{s+4}{s^2+3s+5}$	1M	4	1
	ix.	State Sampling.	1M	5	1
	x.	Define Nyquist rate in sampling.	1M	5	2
Q.2(A)		For the given x(t) sketch the following i. x(-3t+2) ii. x(t+2) iii. x(-3t+3)	10M	1	3



OR

Q.2(B)	Determine whether the following signal is power signal or energy signal. Also find the energy and power of the signal $x(n) = \begin{cases} n^2 & 0 \le n \le 4 \\ 10-n & 5 \le n \le 10 \\ 0 & \text{Otherwise} \end{cases}$	10M	1	3
Q.3(A)	Determine the convolution of the following two sequences. $x(n) = \{1,4,3,2\}$ and $h(n) = \{1,3,2,1\}$	10M	2	3

OR

Q.3(B)	For a Given system represented by difference function $y(n) + y(n-1) - 6y(n-2) = x(n)$ with initial conditions $y(-1)= 3$, $y(-2)=0$, find the response due to input $x(n) = 2^n u(n)$.	10M	2	3

Q.4(A)	Find the Fourier transform of the following signals. a. x(t) = $e^{-t} sin5t\ u(t)$ b. x(t) = $e^{-3t} cos6t\ u(t)$	10M	3	3
	OR			
Q.4(B)	Find the 5-point DFT of the following sequence. x(n) = {1,-2,3,4,2}	10M	3	2
Q.5(A)	a). Explain any three properties of Laplace transform with proofs. b). Explain the properties of ROC in Laplace transform.	10M	4	3
	OR			
Q.5(B)	Find the Z-Transform and ROC of X(Z) for $x(n) = 3\left(\frac{5}{7}\right)^n u(n) + 2\left(-\frac{1}{3}\right)^n u(n)$ also plot the ROC diagram.	10M	4	2
Q.6(A)	Explain any two of the sampling techniques.	10M	5	2
	OR			
Q.6(B)	Determine the Nyquist sampling rate and Nyquist sampling interval for the following. a. $x(t) = 2sinc(100\pi t)$ b. $x(t) = \frac{1}{2}sinc(100\pi t) + \frac{1}{3}sinc(50\pi t)$ c. $x(t) = sinc(100\pi t) + 3sinc^2(60\pi t)$	10M	5	3

*** **END*** ***

Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 20EEE114

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B.Tech. III Year II Semester (R20) Supplementary End Semester Examinations – January 2025

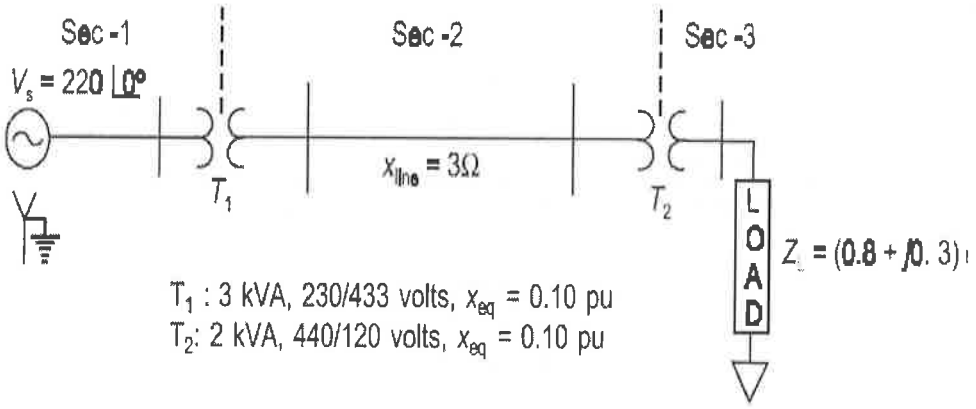
POWER SYSTEMS-II

(EEE)

Time: 3Hrs **Max Marks: 60**

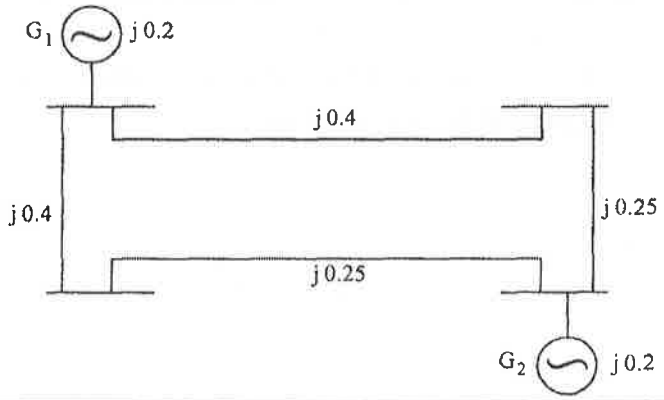
Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q.No		Question	Marks	CO	BL
Q.1	i.	Define: Primitive network.	1M	1	1
	ii.	Write the advantages of Per Unit system.	1M	1	1
	iii.	In load flow studies, the PV bus is treated as PQ bus when ..... limit is violated.	1M	2	1
	iv	State the advantages of Newton Raphson method of load flow solution.	1M	2	1
	v.	What are the methods for calculation of Zbus matrix.	1M	3	1
	vi	State the expression for short circuit MVA for symmetrical fault analysis.	1M	3	1
	vii.	Write down the relation between original unbalanced vector and the corresponding symmetrical components of a three-phase system.	1M	4	1
	viii.	Draw the phasor diagram of negative sequence three phase voltages of sequence component for unbalanced phasors.	1M	4	1
	ix.	Write the expression for Critical clearing time.	1M	5	1
	x.	Classify the power system stability.	1M	5	1
Q.2(A)		For the given power system, draw the per unit impedance diagram and also evaluate the per unit impedances and per unit source voltage at the base of 3 kVA and 230 V.	10M	1	3



OR

Q.2(B)	Form the YBus by using Singular transformation for the network shown in figure including generator buses.	10M	1	3



Q.3(A)	Explain clearly the computational procedure for load flow solution using Gauss-Seidel method when the power system contains all types of buses.	10M	2	3
	OR			
Q.3(B)	Derive the Power Flow Equations in load flow studies.	10M	2	3
Q.4(A)	Derive an expression for the modified Zbus matrix when a link added between two old buses.	10M	3	3
	OR			
Q.4(B)	Obtain the Bus Impedance Matrix for the network configuration displayed in the table (Bus 0 is the reference bus) by Zbus building algorithm.	10M	3	3

Line code (From Bus to To Bus)	Reactance (pu)
1-2	*j0.25*
1-4	*j0.2*
2-3	*j0.1*
2-4	*j0.4*
3-4	*j0.25*
0-1	*j0.2*
0-2	*j0.25*

Q.5(A)	Derive the expression for sequence component of current and voltages in L-L-G fault with fault impedance.	10M	4	3
	OR			
Q.5(B)	Derive the expression for symmetrical components of voltage and currents from unbalanced vectors.	10M	4	3
Q.6(A)	Discuss briefly the methods to improve the stability.	10M	5	3
	OR			
Q.6(B)	Discuss the methods of improving stability of the power system network.	10M	5	3

***** END*****

Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 20ME112

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

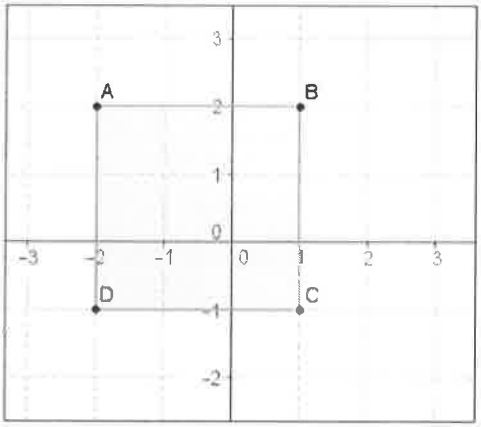
B. Tech III Year II Semester (R20) Supplementary End Semester Examinations, January– 2025

CAD/CAM

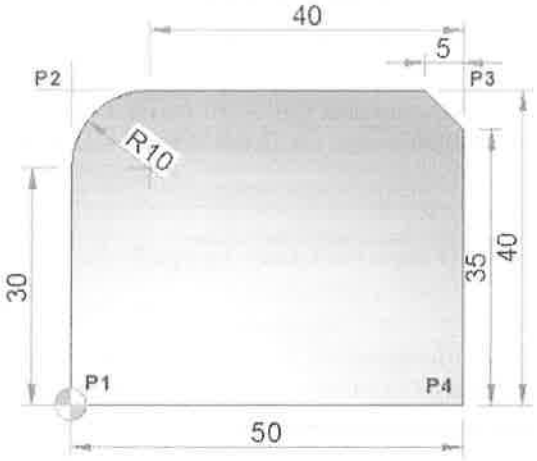
(Mechanical Engineering)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q.No		Question	Marks	CO	BL
Q.1	i.	What is the need of CAD data exchange format?	1	1	1
	ii.	What is rasterization?	1	1	1
	iii.	What are the basic requirement to generate a plane surface?	1	2	1
	iv	What is the significance of synthetic curves in CAD/CAM?	1	2	1
	v.	List the different types of tool magazine.	1	3	1
	vi	What is transducer?	1	3	1
	vii.	The miscellaneous function code M30 is used for which purpose in part programming?	1	4	1
	viii.	Explain a typical block of word address format using a suitable example.	1	4	1
	ix.	What is the need of flexible manufacturing system in industries?	1	5	1
	x.	What was the foundation of the Second Industrial Revolution?	1	5	1
Q.2(A)		Write a short note on the following CAD data exchange format: • IGES • ACIS • DXF • STL file	10	1	2
		OR			
Q.2(B)		Translate the below figure (i) 3 units to the right and 4 units down. (ii) 2 units to the left and 2 units up. 	10	1	3
Q.3(A)		Explain constructive solid geometry technique? Also, elaborate their advantages and limitations.	10	2	2
		OR			
Q.3(B)		Explain different analytical and synthetic curve entities of geometric modelling.	10	2	3
Q.4(A)		What is numeric control system? Elaborate the different components of numeric control system.	10	3	3
		OR			

Q.4(B)	Explain different types of CNC machining centers.	10	3	3
Q.5(A)	Write a complete CNC part program to machine the given geometry as shc in Figure. Assume suitable data if necessary. All dimensions are in mm.	10	4	3



OR

Q.5(B)	Describe the various steps involved in the development of a part program.	10	4	3
Q.6(A)	Write a short notes on • Big data and data mining • The Internet of Things • Horizontal and Vertical system integration • Simulation	10	5	2

OR

Q.6(B)	Explain group technology with a suitable example. Also, elaborate its advantages and limitations.	10	5	3

***** END*****

Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 20ME113

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B. Tech III Year II Semester (R20) Supplementary End Semester Examinations, January – 2025

AUTOMATION & ROBOTICS

(Mechanical Engineering)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q.No		Question	Marks	CO	BL
Q.1	i.	What is the use of a hopper in an automation system?	1M	1	1
	ii.	What are the different types of automation?	1M	1	1
	iii.	Define ideal cycle time.	1M	2	1
	iv.	Define balance efficiency.	1M	2	1
	v.	List out various robot configurations.	1M	3	1
	vi	Define D.O.F.	1M	3	1
	vii.	What is the main goal of trajectory planning in robotics?	1M	4	1
	viii.	Why is straight-line motion preferred in certain robotic applications?	1M	4	1
	ix.	What does SCARA stand for, and what is its primary application? What does SCARA stand for, and what is its primary application?	1M	5	1
	x.	What is the primary function of a manipulator arm in an industrial robot?	1M	5	1
Q.2(A)		Explain the need for automation. Describe the level of automation.	10M	1	2
		OR			
Q.2(B)		Describe hardware components for automation and name three reasons for including a storage buffer in an automated production line	10M	1	2
Q.3(A)		A 20-station transfer line is divided into two stages of 10 stations each. The ideal cycle time of each stage is T_c =10 min. All of the stations in the line have the same probability of stopping, p = 0.005. We assume that the downtime is constant when a breakdown occurs, T_d = 8.0 min. Using the upper-bound approach, compute the line efficiency for the following buffer capacities (a) b = 0 and (b)b =∞	10M	2	3
		OR			
Q.3(B)		What is the importance of line balancing? Explain any two methods of line balancing.	10M	2	2
Q.4(A)		Describe Inverse kinematics with suitable examples.	10M	3	2
		OR			
Q.4(B)		Discuss the performance characteristics of actuators. Compare electrical, and pneumatic actuators based on their characteristics.	10M	3	3
Q.5(A)		Describe Newton-Euler formulation	10M	4	2
		OR			
Q.5(B)		Explain the different ways of accomplishing lead through the method of robot programming.	10M	4	4
Q.6(A)		Describe various types of sensors used in the robot	10M	5	2
		OR			
Q.6(B)		Describe the major components of an industrial robot.	10M	5	2

***** END*****

Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 20ME114

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B. Tech III Year II Semester (R20) Supplementary End Semester Examinations, January – 2025

MACHINE LEARNING FOR MECHANICAL ENGINEERS

(Mechanical Engineering)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q.No		Question	Marks	CO	BL
Q.1	i.	Why is machine learning important?	1M	1	2
	ii.	What are the 3 ways to measure central tendency?	1M	1	1
	iii.	Is regression supervised learning? Why?	1M	2	2
	iv.	Distinguish between classification and regression.	1M	2	2
	v.	Why is the odd value of "K" preferred over even values in the KNN Algorithm?	1M	3	2
	vi	Can the KNN algorithm be used for regression problem statements?	1M	3	3
	vii.	Why is it necessary to perform cross validation?	1M	4	2
	viii.	Define support vectors	1M	4	1
	ix.	What is deploy a machine learning model?	1M	5	1
	x.	Name different clouds used in Machine Learning.	1M	5	1
Q.2(A)		Explain the Supervised Learning approach with an example.	10M	1	2
		OR			
Q.2(B)		Calculate the following for the given dataset: 9,17,24,38,5,26,42,18,33,24 Mean (ii) Median (iii) Mode (iv) Standard Deviation (v) Variance	10M	1	3
Q.3(A)		The following data on the drying time of a certain varnish and amount of an additive that is intended to reducing the drying time. a) Draw a scatter plot to verify that it is reasonable to assume that the relationship is parabolic b) Fit a second order polynomial by the method of least square c) using the result to predict the drying time of the varnish when 6.5 grams of the additive is being used.	10M	2	3

Amount of varnish additive (grams) **X**	Drying time (hours) **Y**
0	12
1	10.5
2	10
3	8
4	7
5	8
6	7.5
7	8.5
8	9

OR

Q.3(B)		Briefly with an example explain i) Precision ii) Recall iii) Accuracy iv) F-score	10M	2	2

Q.4(A)	The following data related to CNC lathe turning operation. Predict the surface roughness value for (200, 0.13) using k-NN algorithm, take k = 3.	10M	3	3

Cutting Speed (m/min)	Feed (mm/rev)	Surface Roughness (μm)
100	0.15	0.58
185	0.10	0.49
140	0.14	0.50
108	0.11	0.45
172	0.12	0.69
180	0.09	0.78
190	0.19	0.35
155	0.17	0.62
200	0.13	??

OR

Q.4(B)	Suppose that the data mining task is to cluster points (with (x,y) representing location) into three clusters, where the points are A1(4,11), A2(2,6), A3(8,5), B1(7,9), B2(7,4), B3(5,3), C1(2,4), C2(4,9). The distance function is Euclidean distance. Suppose initially we assign A1, B1, and C1 as the center of each cluster, respectively. Use the k-means algorithm to show only a. The three cluster centers after the first round of execution. b. The final three clusters.	10M	3	3
Q.5(A)	Explain how support vector machine solves linear classification problems.	10M	4	2

OR

Q.5(B)	Describe the different kernel functions used in SVM.	10M	4	2
Q.6(A)	Explain 3 ways to deploy Machine Learning models in cloud.	10M	5	2

OR

Q.6(B)	Which tools have you used to deploy a machine learning model? Explain any one in detail	10M	5	2

***** END*****

Hall Ticket No: | | | | | | | | | | | Question Paper Code: 20HUM102

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B. Tech III Year II Semester (R20) Supplementary End Semester Examinations, January- 2025

UNIVERSAL HUMAN VALUES

(Common to All)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q.No		Question	Marks	CO	BL
Q.1	i.	Mention the basic guidelines for value education	1M	1	1
	ii.	Define Happiness.	1M	1	3
	iii.	Outcome of self-regulation is.....	1M	2	2
	iv	What are the needs of the self and how they are full-filled?	1M	2	1
	v.	People living with differing goals are called as.....	1M	3	2
	vi	Is feeling of relationship natural acceptable to you or feeling of opposition natural acceptable to you?	1M	3	1
	vii.	Write the four orders in nature.	1M	4	2
	viii	Write the inheritance of Bio-order.	1M	4	2
	ix.	Entry point for Human Tradition (in which Human Goal is fulfilled generation after generation) is?	1M	5	1
	x.	Ethical Human Conduct of a Professional implies?	1M	5	3
Q.2(A)		Explain the process of self-exploration. What is the expected result of self-exploration? Please explain the process, content and natural outcome of self-exploration with a neat diagram and two examples of your life.	10M	1	3
		OR			
Q.2(B)		Discuss the programme for continuity in happiness.	10M	1	2
Q.3(A)		What is qualitative difference between the activities of the self and those of the body? Illustrate with few examples.	10M	2	3
		OR			
Q.3(B)		What purpose does physical facility serve for a human being? Explain categorically.	10M	2	1
Q.4(A)		Respect is right evaluation (on the basis of the self). Write some of the prevailing notions regarding the feeling of respect. examine these notions as well as the proposal for the feeling of respect.	10M	3	3
		OR			
Q.4(B)		Listed the dimensions (systems) that comprised a human order. Explain how each dimension contributes to the fulfillment of the human goal.	10M	3	2
Q.5(A)		List four orders in nature with the examples of units in each order. What is the basis of this classification?	10M	4	3
		OR			
Q.5 (B)		Existence is all that exists. What are the two types of realities that exist? Explain how you can distinguish these realities.	10M	4	2
Q.6 (A)		In Spite of the increasing number and stringency of measures to curb corruption, this malaise is ever growing. Explain the reason for this situation.	10M	5	4
		OR			
Q.6 (B)		Explain the implications of value-based living.	10M	5	3

***** END*****

Hall Ticket No: | | | | | | | | | | | Question Paper Code: 20ECE111

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B.Tech. III Year II Semester (R20) Supplementary End Semester Examinations – January 2025

VLSI Design

(ECE)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q.No		Question	Marks	CO	BL
Q.1	i.	List out the applications of MOSFET.	1M	1	1
	ii.	Draw a CMOS inverter.	1M	1	1
	iii.	List the advantages and disadvantages of domino logic.	1M	2	1
	iv	Define the dynamic power dissipation?	1M	2	1
	v.	Draw a true single phase latch circuit.	1M	3	1
	vi	Define the pipelining?	1M	3	1
	vii.	Draw a 1-bit DRAM cell.	1M	4	1
	viii.	What are the operations of funnel shifter.	1M	4	1
	ix.	List the advantages of FPGA	1M	5	1
	x.	What is meant by IDDQ test?	1M	5	1
Q.2(A)		Derive the drain current expression for n channel MOSFET with neat sketches.	10M	1	3
		OR			
Q.2(B)		Discuss in detail about Pass Transistor Logic and Transmission gate and implement 2:1 Multiplexer using Transmission gate.	10M	1	2
Q.3(A)		Explain in detail about sources of power dissipation of CMOS gate	10M	2	2
		OR			
Q.3(B)		Design of 4:1 multiplexer using pass transistor logic.	10M	2	4
Q.4(A)		Illustrate the operation of Sense-Amplifier Based Registers with circuit operation.	10M	3	2
		OR			
Q.4(B)		Discuss the operation of dynamic edge triggered register using transmission gate.	10M	3	2
Q.5(A)		Design a 4*4 Barrel shifter with examples.	10M	4	2
		OR			
Q.5(B)		Design a 16-bit carry select adder with neat sketches.	10M	4	2
Q.6(A)		Explain in detail about boundary scan technique.	10M	5	2
		OR			
Q.6(B)		Describe FPGA Building block architecture with suitable diagram.	10M	5	2

***** END*****

Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 20ECE112

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B. Tech III Year II Semester (R20) Supplementary End Semester Examinations, January – 2025

ANTENNA AND MICROWAVE ENGINEERING

(ECE)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q.No		Question	Marks	CO	BL
Q.1	i.	Define radiation pattern of an antenna?	1M	1	1
	ii.	The radiation resistance of an antenna is 72Ω and loss resistance is 8 Ω. What is the directivity (in dB) if the power gain is 15.	1M	1	3
	iii.	What is meant by uniform linear arrays?	1M	2	1
	iv	In what ways does the End Fire Array Pattern need to be achieved?	1M	2	2
	v.	What are the major bands available in microwave frequencies?	1M	3	1
	vi	List the applications of microwave frequencies.	1M	3	2
	vii.	What is the principle of Wilkinson power divider?	1M	4	1
	viii.	Differentiate between Butterworth and Chebyshev low pass filter?	1M	4	2
	ix.	Which material is used in Gunn diode and draw the symbol of Gunn diode?	1M	5	1
	x.	Differentiate between klystrons and TWT?	1M	5	2
Q.2(A)		Briefly discuss the following: i. Radiation Intensity ii. Beam Efficiency iii. Directivity iv. Radiation Resistance	10M	1	2
		OR			
Q.2(B)		The normalized radiation intensity of an antenna is represented by $E(\theta) = \cos^2 2\theta$ for $0° \le \theta \le 90°$, $0° \le \theta \le 360°$. Find the following: i. HPBW (Degrees and Radians) ii. FNBW (Degrees and Radians)	10M	1	4
Q.3(A)		Illustrate the radiation mechanisms of broad side antenna array and end fire antenna array with neat sketches.	10M	2	2
		OR			
Q.3(B)		What is understood by uniform linear array of antenna? Derive an expression for array factor of N element uniform linear array.	10M	2	2
Q.4(A)		Explain in detail the applications of Microwave engineering based on communications and non-communication utilities.	10M	3	2
		OR			
Q.4(B)		Illustrate the concept of microwave radiation. How does microwave radiation affects human body.	10M	3	3
Q.5(A)		How do you use the E and H Plane Tee? Describe the E and H plane and locate the S-matrix.	10M	4	2
		OR			
Q.5(B)		Derive the expression for S matrix of a Wilkinson power divider using even-odd mode analysis.	10M	4	3
Q.6(A)		Describe the Gunn diode in detail, using the schematic and the V-I characteristics.	10M	5	2
		OR			
Q.6(B)		Write Short Notes on i) IMPAAT Diode ii) Tunnel Diode.	10M	5	2

***** END*****

Hall Ticket No: | | | | | | | | | | | Question Paper Code: 20ECE113

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B.Tech. III Year II Semester (R20) Supplementary End Semester Examinations – January 2025

DIGITAL COMMUNICATION

(ECE)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q. No		Question	Marks	CO	BL
Q.1	i.	List out various types of distortions available in Delta Modulation.	1M	1	1
	ii.	What is Quantization?	1M	1	1
	iii.	Design the unipolar RZ code for the binary data 101101.	1M	2	6
	iv	What is a Matcher filter?	1M	2	1
	v.	Distinguish between bandwidth requirement of FSK and QPSK.	1M	3	4
	vi	What is the necessity of constellation diagram?	1M	3	1
	vii.	Recall the statement of Shannon–Hartley theorem.	1M	4	1
	viii.	Define Error function (erf).	1M	4	1
	ix.	What is eye diagram?	1M	5	1
	x.	Outline the need for carrier synchronization.	1M	5	2
Q.2(A)		Explain the types of quantization used in PCM and Drive an expression for output SNR of a uniform quantizer.	10M	1	2
		OR			
Q.2(B)		Explain about Time Division Multiplexing with neat sketches.	10M	1	2
Q.3(A)		Discuss about the filter used for SNR maximization and derive an expression for its impulse response.	10M	2	2
		OR			
Q.3(B)		Design various encoding schemes for the data 101001110	10M	2	6
Q.4(A)		Analyze the working of 8-QAM modulation and demodulation with neat sketches.	10M	3	4
		OR			
Q.4(B)		Explain the generation and detection of binary PSK.	10M	3	2
Q.5(A)		Determine the expression for Probability of Error of an ASK system.	10M	4	4
		OR			
Q.5(B)		Determine the expression for Probability of Error of a QPSK system.	10M	4	4
Q.6(A)		Explain the effect of frequency offset on received symbols with the help of constellation diagram.	10M	5	2
		OR			
Q.6(B)		Outline in detail about the PLL based carrier recovery with neat sketches.	10M	5	2

***** END*****

Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 18ECE115

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B.Tech. III Year II Semester (R20) Supplementary End Semester Examinations – January 2025

COMPUTER COMMUNICATION NETWORKS

(ECE - Re-admitted)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either Part-A or B only

Q.No		Question	Marks	CO	BL
Q.1	i.	Match the following to one or more layers of the TCP/IP protocol suite: a. route determination b. connection to transmission media c. providing services for the end user	1M	1	1
	ii.	Name three types of transmission impairment.	1M	1	1
	iii.	Distinguish between communication at the network layer and communication at the data-link layer.	1M	2	2
	iv	How does a single-bit error differ from a burst error?	1M	2	1
	v.	Find the class of the following classful IP addresses: a. 130.34.54.12 b. 200.34.2.1 c. 245.34.2.8	1M	2	3
	vi	A host is sending 100 datagrams to another host. If the identification number of the first datagram is 1024, what is the identification number of the last?	1M	2	2
	vii.	Can you explain why some transport-layer packets may be received out of order in the Internet?	1M	4	2
	viii.	UDP is a message-oriented protocol. TCP is a byte-oriented protocol. If an application needs to protect the boundaries of its message, which protocol should be used, UDP or TCP?	1M	4	2
	ix.	In FTP, can a server get the list of the files or directories from the client?	1M	5	2
	x.	Can a host use a TELNET client to get services provided by other client-server applications such as FTP or HTTP?	1M	5	2
Q.2(A)		a. Give a detailed description of TCP/IP protocol suit. b. Assume a system uses five protocol layers. If the application program creates a message of 100 bytes and each layer (including the fifth and the first) adds a header of 10 bytes to the data unit, what is the efficiency (the ratio of application layer bytes to the number of bytes transmitted) of the system?	10M	1	3
		OR			
Q.2(B)		a. Compare and contrast a circuit-switched network and a packet-switched network. b. A light signal is travelling through a fiber. What is the delay in the signal if the length of the fiber-optic cable is 10 m, 100 m, and 1 Km (assume a propagation speed of 2×10^8 m)?	10M	1	3

Q.3(A)	a. Discuss in detail about the HDLC frame format. What are the different HDLC frames. Draw their frame formats. b. Byte-stuff the following frame payload in which E is the escape byte, F is the flag byte, and D is a data byte other than an escape or a flag character  	10M	2	3
	OR			
Q.3(B)	a. Write a short on the following. i. ALOHA ii. CSMA/CA iii. CSMA/CD	10M	2	2
Q.4(A)	Explain in detail about i. Link State Routing ii. Border Gateway Protocol	10M	3	2
	OR			
Q.4(B)	i. Describe Internet Protocol version 4 in detail. ii. Show the n leftmost bits of the following network-addresses/masks that can be used in a forwarding table a) 170.40.11.0/24 b) 110.40.240.0/22 c) 70.14.0.0./18	10M	4	3
Q.5(A)	i. Explain the services of transmission control protocol. ii. b. Explain the deadlock condition created by lost acknowledgment?	10M	4	2
	OR			
Q.5(B)	i. Differentiate between connectionless and connection-oriented protocols. ii. b. How congestion windows is used to control the congestion in TCP?	10M	4	2
Q.6(A)	Briefly explain about i. Secure shell ii. Domain Name System	10M	5	2
	OR			
Q.6(B)	Write a short note on i. Simple Network Management Protocol. ii. File Transfer Protocol.	10M	5	2

*** END***

Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 20CSE113

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B. Tech III Year II Semester (R20) Supplementary End Semester Examinations, January– 2025

COMPILER DESIGN

(Computer Science & Engineering)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q.No		Question	Marks	CO	BL
Q.1	i.	What are the functions of compiler?	1M	1	1
	ii.	Define boot strapping.	1M	1	1
	iii.	Define ambiguous grammar.	1M	2	1
	iv	Eliminate left factoring from the below grammar. S→ iBtS| iBtSeS |a B → b	1M	2	2
	v.	Define synthesized attribute and inherited attribute.	1M	3	1
	vi	List the rules for type checking.	1M	3	1
	vii.	List the Intermediate code representation.	1M	4	1
	viii.	Define symbol table.	1M	4	1
	ix.	What is the dead code elimination?	1M	5	1
	x.	Define Peephole optimization.	1M	5	1
Q.2(A)		Discuss about various phases of a compiler and write down the output of each phase for the expression x:=a+b+c*100 (a,b and c are float variables).	10M	1	3
		OR			
Q.2(B)		What is LEX? Discuss the usage of LEX in lexical analyser generation with an example.	10 M	1	2
Q.3(A)		Explain the following with suitable example a) Left Recursive b) Left Factoring	10M	2	2
		OR			
Q.3(B)		Construct the LL(1) parser for the following grammar: S → (L) / a L → L, S/S. and parse the input string (a,a).	10M	2	3
Q.4(A)		Construct SLR Parser for the following grammar: E->E+T |T T->T*F |F F-> (E)|id	10M	2	3
		OR			
Q.4(B)		Construct CLR parsing table for the following grammar: S → CC C → cC / d	10M	3	3
Q.5(A)		Draw the syntax tree and DAG for the expression (a*b)+(c-d)*(a*b)+b.	10M	4	3
		OR			
Q.5(B)		Explain in detail about Runtime storage management with examples.	10M	4	2
Q.6(A)		What is Code optimization? Explain in detail about Loop optimization with an example.	10M	5	2
		OR			

Q.6(B)		Sketch the flow graph for the matrix addition program below.
		begin
		for i := 1 to n do
		for j := 1 to n do
		c[i,j]: = a[i,j]+b[i,j];
		end
			10M	5	3

***** END*****

Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 20CSE114

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B. Tech III Year II Semester (R20) Supplementary End Semester Examinations, January – 2025

INTERNET OF THINGS

(Computer Science & Engineering)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q.No		Question	Marks	CO	BL
Q.1	i.	How does the "Small Pieces, Loosely Joined" principle apply to connected devices in IoT?	1M	1	1
	ii.	List the key features of IoT.	1M	1	1
	iii.	Define Microprocessor.	1M	2	1
	iv	Define System-on-Chip (SoC).	1M	2	1
	v.	List the various versions of Raspberry pi models.	1M	3	1
	vi	Differ Arduino and Raspberry Pi.	1M	3	1
	vii.	Abbreviate HTTP, HTTPs, SMTP, FTP.	1M	4	1
	viii.	What is DNS?	1M	4	1
	ix.	Define API.	1M	5	4
	x.	What is Comet?	1M	5	1
Q.2(A)		Explain briefly about the main components of IoT in detail.	10M	1	2
		OR			
Q.2(B)		Discuss in detail about any five flavors of IoT.	10M	1	2
Q.3(A)		Summarize about the key components of the Arduino board.	10M	2	2
		OR			
Q.3(B)		Explain the factors that need to be considered while choosing your platform in IoT.	10M	2	2
Q.4(A)		Explain about the hardware involved in Raspberry Pi.	10M	3	2
		OR			
Q.4(B)		Analyze the role of the Raspberry Pi in enabling Plug Computing and its impact on IoT.	10M	3	4
Q.5(A)		Discuss about TCP/IP protocol suite with neat sketch.	10M	4	2
		OR			
Q.5(B)		Explain in detail about the HTTP protocol and HTTPs protocol.	10M	4	2
Q.6(A)		Briefly explain about the implementation of CoAP protocol in IoT.	10M	5	2
		OR			
Q.6(B)		Explain the role of MQTT Protocol in IoT.	10M	5	2

***** END*****

Hall Ticket No: | | | | | | | | | | | Question Paper Code: 20CSE115

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B. Tech III Year II Semester (R20) Supplementary End Semester Examinations, January – 2025

SOFTWARE ENGINEERING

(Computer Science & Engineering)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q.No		Question	Marks	CO	BL
Q.1	i.	What do you mean by software engineering?	1M	1	1
	ii.	Mention the Advantage and Disadvantage of waterfall model.	1M	1	1
	iii.	Differentiate verification and validation.	1M	2	2
	Iv	List the different activities of requirement Engineering Process.	1M	2	1
	v.	What are the five types of Design Classes?	1M	3	1
	vi	What is the need for modularity?	1M	3	1
	vii.	Define Smoke Testing	1M	4	1
	viii.	What is meant by debugging?	1M	4	1
	ix.	Define the cost of quality.	1M	5	1
	x.	What is meant by software reliability?	1M	5	1
Q.2(A)		Explain the Software Development Life Cycle Model in detail.	10M	1	2
		OR			
Q.2(B)		Discuss about the different Principles of Agile Software Engineering.	10M	1	2
Q.3(A)		What is Software Requirement Specification (SRS)? Explain in Detail.	10M	2	2
		OR			
Q.3(B)		Explain in detail about Behavioral models with an example.	10M	2	2
Q.4(A)		Design and Implement the following diagram with an example. a)Class diagram b) Usecase diagram c)Activity diagram	10M	3	2
		OR			
Q.4(B)		Explain about the user interface design golden rules.	10M	3	2
Q.5(A)		Explain in detail about Metrics for the analysis model.	10M	4	2
		OR			
Q.5(B)		Summarize about the various testing strategies for conventional software.	10M	4	2
Q.6(A)		Explain in detail about Software Reliability.	10M	5	2
		OR			
Q.6(B)		Discuss about the ISO 9000 quality standards.	10M	5	2

*** END***

Hall Ticket No: | | | | | | | | | | | Question Paper Code: 20CST111

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B. Tech III Year II Semester (R20) Supplementary End Semester Examinations, January– 2025

CRYPTOGRAPHY AND NETWORK SECURITY

(Computer Science & Technology)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q.No		Question	Marks	CO	BL
Q.1	i.	What is Avalanche Effect?	1M	1	1
	ii.	List out the round function of AES Algorithm.	1M	1	1
	iii.	Find the Euler's Totient Function for the number 77.	1M	2	1
	iv	Find the value of $4^{30} mod\ 31$.	1M	2	1
	v.	Why do we need Hashing in authentication.	1M	3	1
	vi	What is sequence and timing modification.	1M	3	1
	vii.	Define E-mail security.	1M	4	1
	viii.	What is the need to follow security practice.	1M	4	1
	ix.	Define Masquerader.	1M	5	1
	x.	Mention the two countermeasures for security.	1M	5	1
Q.2(A)		Explain AES.	10M	1	2
		OR			
Q.2(B)		Consider the plaintext "CST" to be encrypted using the Hill cipher with a 3x3 key matrix. The key matrix is given as: Key Matrix: $\begin{bmatrix} 3 & 2 & 4 \\ 5 & 7 & 8 \\ 3 & 6 & 1 \end{bmatrix}$ Perform the encryption process step by step and determine the resulting ciphertext.	10M	1	4
Q.3(A)		Perform the Diffie-Hellman key exchange algorithm with the following parameters: a. Publicly agreed prime number (p): 29 b. Publicly agreed primitive root (g): 3 c. Alice's private key (a): 7 d. Bob's private key (b): 11.	10M	2	4
		OR			
Q.3(B)		Perform the key exchange process step by step, including the calculation of the shared secret key.	10M	2	4
Q.4(A)		Explain about Digital signature and authentication protocols.	10M	3	2
		OR			
Q.4(B)		Explain briefly MAC and HMAC.	10M	3	2
Q.5(A)		Explain in detail about IP security with corresponding applications.	10M	4	2
		OR			
Q.5(B)		What is Web security explain the steps with full description.	10M	4	2
Q.6(A)		Explain in detail about Nature of viruses and structure of virus with virus countermeasures.	10M	5	2
		OR			
Q.6(B)		Briefly explain the need for firewall and briefly explain the different types of firewalls.	10M	5	2

***** END*****

Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 20CST112

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B. Tech III Year II Semester (R20) Supplementary End Semester Examinations, January – 2025

CLOUD COMPUTING

(Computer Science & Technology)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q.No		Question	Marks	CO	BL
Q.1	i.	List out the characteristics of cloud computing.	1M	1	1
	ii.	List out the risks and challenges associated with cloud computing.	1M	1	1
	iii.	Define about public cloud.	1M	2	1
	iv.	Define hybrid cloud & its benefits?	1M	2	1
	v.	What is the difference between Type 1 and Type 2 hypervisors?	1M	3	2
	vi	What is a hypervisor?	1M	3	2
	vii.	What is Architectural Styles for Cloud Applications?	1M	4	2
	viii.	What is ZooKeeper in cloud computing?	1M	4	2
	ix.	Why is security important in cloud computing?	1M	5	1
	x.	What is Elastic Compute Cloud (EC2) in Amazon Web Services (AWS)?	1M	5	2
Q.2(A)		Discuss in detail about Advanced cloud architectures.	10M	1	2
		OR			
Q.2(B)		Discuss in detail about fundamental cloud architectures.	10M	1	2
Q.3(A)		Explain types of Cloud Computing.	10M	2	2
		OR			
Q.3(B)		Explain the steps involved in SLA life cycle. How various aspects like security, data encryption, privacy etc. can be included in SLA?	10M	2	2
Q.4(A)		Define virtualization and explain types of virtualizations.	10M	3	2
		OR			
Q.4(B)		Explain the steps involved in provisioning a virtual machine, from selecting the hardware resources to configuring the software stack.	10M	3	2
Q.5(A)		Explain the concept of workflows and their significance in distributed syst	10M	4	2
		OR			
Q.5(B)		Describe the GrepTheWeb application, its goals, and the challenges it addresses. Explain how cloud computing principles, such as scalability, fault tolerance, and distributed processing, are utilized in the GrepTheWeb application.	10M	4	2
Q.6(A)		Explain the importance of third-party APIs in cloud development and discuss the challenges and benefits of working with external APIs.	10M	5	4
		OR			
Q.6(B)		Discuss the cost models of AWS, Google App Engine, and Microsoft Azure. Compare and contrast their pricing structures, including pay-as-you-go, reserved instances, and pricing tiers.	10M	5	4

***** END*****

Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 20CST113

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B. Tech III Year II Semester (R20) Supplementary End Semester Examinations, January – 2025

INTERNET AND WEB PROGRAMMING

(Computer Science & Technology)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q.No		Question	Marks	CO	BL
Q.1	i.	Define Session and Cookies.	1M	1	1
	ii.	What is the use of VPN?	1M	1	1
	iii.	Define DNS.	1M	2	2
	iv.	Summarize some text formatting tags available in Mark-up languages.	1M	2	1
	v.	Discuss the general syntactic characteristics of JavaScript.	1M	3	1
	vi	Write a PHP Script using Date and Time Functions.	1M	3	1
	vii.	Compare SGML, HTML & XML	1M	4	1
	viii.	What is PDO?	1M	4	2
	ix.	List the threats in internet security.	1M	5	1
	x.	Define XSL and XSLT.	1M	5	1
Q.2(A)		Why is HTTP called as a stateless protocol? Explain.	10M	1	2
		OR			
Q.2(B)		What is webserver? Explain its Functionalities.	10M	1	2
Q.3(A)		Define XML. What are the basic rules to write XML document? Explain with syntax.	10M	2	2
		OR			
Q.3(B)		Describe the basic structure of HTML5. Use necessary code to explain how one can define client side image map in html.	10M	2	3
Q.4(A)		Illustrate a PHP program to create a one-dimensional array and associative array.	10M	3	3
		OR			
Q.4(B)		Use a java script that reads an integer, determines and displays whether it is odd or even number.	10M	3	2
Q.5(A)		With the help of suitable PHP script explain querying single and multiple MySQL Databases with PHP.	10M	4	2
		OR			
Q.5(B)		Outline the commands DDL, DML, DCL with suitable example.	10M	4	3
Q.6(A)		Examine sockets and services with suitable examples	10M	5	4
		OR			
Q.6(B)		Analyse how hackers are threat to the internet security illustrate your view on it.	10M	5	4

***** END*****

Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 20CAI113

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B. Tech III Year II Semester (R20) Supplementary End Semester Examinations, January– 2025

BIG DATA ANALYTICS

(CSE-Artificial Intelligence)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q.No		Question	Marks	CO	BL
Q.1	i.	Compare value and veracity.	1M	1	1
	ii.	Define Crazy Egg tool.	1M	1	1
	iii.	How node manager and resource manager differ?	1M	2	2
	iv.	List out the Hadoop IO classes.	1M	2	2
	v.	What is intermediate data?	1M	3	1
	vi	Differentiate between object writable and generic writable.	1M	3	1
	vii.	What is RDD? Why it is needed in Spark?	1M	4	1
	viii.	How to declare mutable and immutable variables in Scala?	1M	4	1
	ix.	List out the features of Hbase.	1M	5	1
	x.	Define NoSQL and why it is used?	1M	5	1
Q.2(A)		Compare & contrast small data vs big data.	10M	1	2
		OR			
Q.2(B)		Define big data analytics. Give real time applications of big data.	10M	1	2
Q.3(A)		Explain the architecture of Building blocks of Hadoop.	10M	2	2
		OR			
Q.3(B)		Define Hadoop IO. Explain the HDFS Write operation.	10M	2	3
Q.4(A)		Implement MapReduce program to find the wordcount from text file.	10M	3	3
		OR			
Q.4(B)		Explain in detail about anatomy of a MapReduce job run.	10M	3	2
Q.5(A)		Implement a Scala Program to print 1 to n even numbers using for loop.	10M	4	3
		OR			
Q.5(B)		Illustrate the built-in control structures with a simple Scala program.	10M	4	4
Q.6(A)		Explain in detail about the creating, updating and deleting documents using Hbase.	10M	5	2
		OR			
Q.6(B)		Compare RDBMS and Hbase.	10M	5	2

***** END*****

Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 20CAI114

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B. Tech III Year II Semester (R20) Supplementary End Semester Examinations, January – 2025

DEEP LEARNING

(CSE-Artificial Intelligence)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q.No		Question	Marks	CO	BL
Q.1	i.	Compare vector and Tensor Usage in Deep Learning?	1M	1	2
	ii.	How do you identify high bias and High variance?	1M	1	1
	iii.	List three types of error metrics used to assess the performance of regression model.	1M	2	1
	iv.	How are R^2 and adjusted R^2 different?	1M	2	2
	v.	Give the mathematical equation of the logit function.	1M	3	1
	vi	Which activation function is used to address vanishing gradients problem and How?	1M	3	4
	vii.	Input image size 28 X 28 and a kernel/filter of size 7 X 7 with a stride of 1. the size of the convoluted matrix is?	1M	4	3
	viii.	What is Batch Normalization?	1M	4	2
	ix.	What is the drawback of RNN, how this drawback can be addressed.	1M	5	4
	x.	Write on Denoising auto encoders?	1M	5	2
Q.2(A)		i) If $f(x1,x2) = x_1^2+2x_2$, where $x_1=e^{2t}$ and $x_2 = e^{t^2}$. Find the gradient vector with respect to $\frac{\partial f}{\partial t}$.	5M	1	3
		ii) If $z = (2x+y^2)^3$. Find $\frac{\partial z}{\partial x}$, $\frac{\partial z}{\partial y}$ by using chain rule.	5M		
		OR			
Q.2(B)		Explain in detail about Gradient Descent with momentum with examples.	10M	1	2
Q.3(A)		Derive the equation of the logit function which is used in Logistic regression?	10M	2	3
		OR			
Q.3(B)		Obtain regression equation of Y on X and estimate Y when X=65 from the following:	10M	2	3

X	20	30	40	50	60
Y	38	40	55	60	65

Q.4(A)		With neat architectural diagram, explain the topological layers used in Feed forward neural network. Which activation functions are used in each layers and why?				10M	3	5
		OR						
Q.4(B)		Explain the various types of Gradient Decent methods? Which one is mostly preferred while training a Deep Learning model and Why?				10M	3	4
Q.5(A)		Construct pixel values of an output image for the following input and filter values with stride=1 and stride=2.				10M	4	3

input =

2	3	7	8	9	5	6
4	5	6	1	0	1	3
5	6	8	7	4	5	2
1	2	2	2	4	5	4
5	1	5	6	5	0	1
5	8	9	7	5	4	6
0	0	0	1	2	5	9

filter=

1	0	1
0	1	0
1	0	1

	OR			
Q.5(B)	Why do we need regularization in Deep learning models? Elaborate any three regularization approaches practiced in Deep learning models?	10M	4	5
Q.6(A)	Write on sequence data. Which model is preferred to train on sequence data. Explain the model in brief.	10M	5	2
	OR			
Q.6(B)	Construct the steps involved in how a denoising autoencoder is trained to map a corrupted data point x^1 to its original data point x.	10M	5	6

***** END*****

Hall Ticket No: | | | | | | | | | | | Question Paper Code: 20CAI115

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B. Tech III Year II Semester (R20) Supplementary End Semester Examinations, January – 2025

DATA SCIENCE

(CSE-Artificial Intelligence)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q.No		Question	Marks	CO	BL
Q.1	i.	How can you explain the importance of Data Science?	1M	1	2
	ii.	Remember and list out the steps involved in Data Science Life cycle.	1M	1	1
	iii.	How do you understand Big-data? Give me any 2 real-time examples.	1M	2	2
	iv.	Define correlation and causation with suitable example.	1M	2	2
	v.	What do you mean by Named Tuple? Give an example	1M	3	1
	vi	How will you understand Conditional Probability? Give an example	1M	3	1
	vii.	Define bias and variance	1M	4	1
	viii.	Why Dimensionality reduction is important?	1M	4	1
	ix.	Differentiate classification and clustering.	1M	5	2
	x.	What is the use of recommender system?	1M	5	1
Q.2(A)		Explain in detail about the data pre-processing steps in detail.	10M	1	2
OR					
Q.2(B)		How to deploy the data science project? Explain all the steps from data collection to deploying the model	10M	1	2
Q.3(A)		What is the use of Data Visualization? Can you explain minimum 5 types of charts with suitable code to visualize the data?	10M	2	2
OR					
Q.3(B)		How to Find the Correlation Coefficient? Calculate the correlation coefficient of the given data and identify the correlation type x 50 51 52 53 54 y 3.1 3.2 3.3 3.4 3.5	10M	2	4
Q.4(A)		List out the Types of distribution functions and explain any 3 in each category	10M	3	3
		OR			
Q.4(B)		Describe the properties of the normal distribution, including its shape, central tendency, and dispersion. Discuss its importance in statistical analysis.	10M	3	3
Q.5(A)		What is MNIST? Exploring Hand-written Digits using SVM.	10M	4	2
		OR			
Q.5(B)		What is Clustering? Explain K-means clustering algorithm with suitable example.	10M	4	2
Q.6(A)		Discuss in detail Recommender Systems through User-based and Item-based filtering models	10M	5	3
		OR			
Q.6(B)		What are two major types of clustering approaches? Illustrate them with suitable example and diagrams	10M	5	2

***** END*****

Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 20CSD114

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B. Tech III Year II Semester (R20) Supplementary End Semester Examinations, January – 2025

DEEP LEARNING

(CSE-Data Science)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q.No		Question	Marks	CO	BL
Q.1	i.	Write the differences between machine learning and deep learning	1M	1	2
	ii.	Name one variant of gradient descent used in machine learning. Explain?	1M	1	2
	iii.	What are the different types of classification algorithm?	1M	2	1
	iv.	What is the purpose of the SoftMax cross entropy loss function in classification tasks?	1M	2	1
	v.	What is dropout, and why is it used in neural networks?	1M	3	2
	vi	Name one popular activation function used in neural networks.	1M	3	1
	vii.	What does RCNN stand for, and what problem does it address in object detection?	1M	4	2
	viii.	What problem do Long Short-Term Memory (LSTM) architectures aim to solve?	1M	4	2
	ix.	What distinguishes Recurrent Neural Networks (RNNs) from feed forward neural networks?	1M	5	2
	x.	What aspect of data representation do contractive autoencoders focus on?	1M	5	1
Q.2(A)		Discuss the importance of optimization algorithms in training machine learning models and compare different variants of gradient descent?	10M	1	2
		OR			
Q.2(B)		Explain the concepts of overfitting and underfitting, and provide strategies to address these issues in machine learning models?	10M	1	4
Q.3(A)		Describe how linear models address regression problems, including the mathematical formulation of linear regression. Discuss the assumptions underlying linear regression and potential limitations of the model?	10M	2	2
		OR			
Q.3(B)		Explain the fundamental difference between regression and classification problems. Provide examples of each type of problem and discuss their applications in real-world scenarios?	10M	2	4
Q.4(A)		How does a multi-layer perceptron differ from a single-layer perceptron in terms of architecture and capabilities?	10M	3	5
		OR			
Q.4(B)		Describe the characteristics and advantages of the hyperbolic tangent (tanh) activation function compared to the sigmoid activation function?	10M	3	2
Q.5(A)		Compare and contrast the architectural differences between VGG and GoogLeNet (Inception), highlighting their respective strengths and Weaknesses?	10M	4	2
		OR			
Q.5(B)		Explain the concept of pooling in CNNs and its role in reducing spatial dimensions and extracting dominant features from feature maps?	10M	4	4
Q.6(A)		a) What is the advantage of RNNs for processing sequential data? b) Why are word embeddings important in NLP, and how are they generated?	10M	5	2
		OR			
Q.6(B)		How do LSTM architectures differ from traditional RNNs, and how do they address the problem of vanishing gradients in recurrent neural networks?	10M	5	2

***** END*****

Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 20CSD115

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B. Tech III Year II Semester (R20) Supplementary End Semester Examinations, January – 2025

COMPUTER NETWORKS

(CSE-Data Science)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q.No		Question	Marks	CO	BL
Q.1	i.	Define computer networks	1M	1	1
	ii.	How do you define Data and Signals	1M	1	1
	iii.	Classify the Channelization protocols	1M	2	1
	iv.	Illustrate the Flow Control	1M	2	1
	v.	How do you use ad hoc network?	1M	3	1
	vi	Identify the Differences of IPV4 and IPV6	1M	3	1
	vii.	Select the network performance measurements	1M	4	1
	viii.	List the factors affecting network performance?	1M	4	1
	ix.	Evolutes client Server Programming	1M	5	1
	x.	Explain Client Server Programming	1M	5	1
Q.2(A)	What is a packet switching in computer networks?		10M	1	2
	OR				
Q.2(B)	What are the seven layers of ISO-OSI model and explain those layers?		10M	1	2
Q.3(A)	Summaries the addressing type used in the link layer?		10M	2	2
	OR				
Q.3(B)	Explain Hamming code and how does it work? Encode a binary word 11001 into the even parity hamming code.		10M	2	2
Q.4(A)	How does the distance vector algorithm work?		10M	3	3
	OR				
Q.4(B)	Apply the Congestion control algorithm in networking		10M	3	3
Q.5(A)	Examine the main difference between SCTP and UDP?		10M	4	4
	OR				
Q.5(B)	Analyse about flow control?		10M	4	4
Q.6(A)	Classify the main function of the application layer?		10M	5	2
	OR				
Q.6(B)	Explain the applications of client-server architecture?		10M	5	2

***** END*****

Hall Ticket No: | | | | | | | | | | | Question Paper Code: 20CSO115

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B. Tech III Year II Semester (R20) Supplementary End Semester Examinations, January – 2025

BIG DATA ANALYTICS

(CSE-IOT)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q.No		Question	Marks	CO	BL
Q.1	i.	What is big data?	1M	1	1
	ii.	Compare between conventional data and big data.	1M	1	4
	iii.	List the types of stores in data stream management system.	1M	2	1
	iv	What is a bloom filter?	1M	2	1
	v.	What is speculative execution?	1M	3	1
	vi	What are the mandatory and optional phases of Hadoop MapReduce framework?	1M	3	1
	vii.	What is IBM Big insights?	1M	4	1
	viii.	How does Pig handle schema flexibility and evolving data structures?	1M	4	1
	ix.	What is Http Request Object?	1M	5	1
	x.	What is the use of the property ready State in XMLHttpRequest object?	1M	5	1
Q.2(A)		(i) What is analysis and reporting? Compare between analysis and reporting.	5M	1	4
		(ii) What is Big Data Platform? Explain its features and challenges	5M	1	2
		OR			
Q.2(B)		(i) Discuss any five big data platforms.	5M	1	6
		(ii) Explain the properties and types of data.	5M	1	2
Q.3(A)		Illustrate in detail about the stream data model.	10M	2	2
		OR			
Q.3(B)		Discuss in details about real time analytics platform.	10M	2	6
Q.4(A)		What is MapReduce? Explain with the java code, various phases of MapReduce.	10M	3	5
		OR			
Q.4(B)		Illustrate in detail the design aspects of HDFS with corresponding java code.	10M	3	2
Q.5(A)		Depict the architecture of Hive and explain the services of Hive in detail.	10M	4	2
		OR			
Q.5(B)		Discuss in detail about HBase data model.	10M	4	5
Q.6(A)		Illustrate the key techniques and challenges in predictive analytics.	10M	5	2
		OR			
Q.6(B)		Explain the concept of simple linear regression and its assumptions.	10M	5	5

*** END***

Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 20CSO113

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B. Tech III Year II Semester (R20) Supplementary End Semester Examinations, January- 2025

EMBEDDED SYSTEMS

(CSE-Internet of Things)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q.No		Question	Marks	CO	BL
Q.1	i.	List out the applications of Embedded Systems	1M	1	1
	ii.	Compare Von-Neumann and Harvard architecture	1M	1	2
	iii.	Enumerate the bit addressable SFRs of Intel 8051 Microcontroller.	1M	2	1

	iv	What will be the contents of Overflow Flag and Carry Flag after the execution of the following Intel 8051 Microcontroller instructions.
		MOV A, #F1H
		ADD A, #D2H
			1M	2	2

	v.	A band-limited analog signal has frequency component of 12 KHz. What must be the minimum sampling frequency so that all the frequency components can be exactly reconstructed later?	1M	3	2
	vi	Mention the advantages of Multiplexed Display System.	1M	3	1
	vii.	What is deadlock?	1M	4	1
	viii.	Differentiate between Hard Real Time and Soft Real Time Systems.	1M	4	2
	ix.	Define Context Switching.	1M	5	1
	x.	List out the various operating modes of ARM processor.	1M	5	1
Q.2(A)		Explain the characteristics of an embedded system. Also elaborate the quality attributes of an embedded system.	10M	1	2
		OR			
Q.2(B)		i. Distinguish between RISC and CISC Processors	5M	1	3
		ii. Elaborate the various types of cores in Embedded Systems.	5M	1	2
Q.3(A)		Illustrate the memory organization of Intel 8051 microcontroller.	10 M	2	3
		OR			
Q.3(B)		i, Explain the serial communication module of Intel 8051 microcontroller. Illustrate the steps involved in serial transmission of data.	5M	2	2
		ii. Write an 8051-assembly language program to transmit a message "YES" serially at a baud rate of 9600. Assume one start and one stop bit for a 8-bit character.	5M	2	3
Q.4(A)		Explain the working of a successive approximation type A / D converter with a neat block diagram.	10M	3	2
		OR			
Q.4(B)		Explain in detail about the concepts of Emulator and Debugger.	10M	3	2
Q.5(A)		What is a process? Explain the various states of a process with a neat state transition diagram.	10M	4	2
		OR			

Q.5(B)	i. Explain Round Robin scheduling algorithm with a neat Gantt Chart.	5M	4	2
	ii, For the table data given perform scheduling using RMS algorithm:	5M	4	4

Process Identity	Execution Time	Time Period
P1	3	20
P2	2	5
P3	2	10

Q.6(A)	Draw and explain, the architecture of ARM 32-bit microcontroller with neat diagram?	10M	5	2
	OR			
Q.6(B)	Explain the addressing modes of ARM processor with suitable examples.	10M	5	2

***** END*****

Hall Ticket No: | | | | | | | | | | | Question Paper Code: 20CE302

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B. Tech III Year II Semester (R20) Supplementary End Semester Examinations, January– 2025

ENVIRONMENTAL IMPACT ASSESSMENT (OE-II)

(Common to All)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q.No		Question	Marks	CO	BL
Q.1	i.	Write the different types of impact induced by any project activities?	1M	1	2
	ii.	What are the common categories of land use in a map?	1M	1	1
	iii.	What is biological environment constitute o?	1M	2	1
	iv.	Write the two steps for Biological Impact Assessment.	1M	2	2
	v.	What is the geography limit over which the biological impact assessment should be conducted?	1M	3	2
	vi	Define deforestation	1M	3	1
	vii.	What are the causes of deforestation?	1M	4	1
	viii.	Mention the reasons for deforestation.	1M	4	2
	ix.	How much percent of earth's animal and plant depends in the forest.	1M	5	2
	x.	What is the percentage contribution of tropical rain forest of South America on earth's oxygen?	1M	5	2
Q.2(A)		Explain EIA and illustrate the example of Land Cleaning Activity (L.C.A) in detail.	10M	1	2
		OR			
Q.2(B)		Explain in detail the salient feature and key elements of EIA process.	10M	1	3
Q.3(A)		Describe the systematic approach for the study of impacts on soil and groundwater.	10M	2	3
		OR			
Q.3(B)		Discuss in detail about the "Assessment of Soil and Ground Water Pollution".	10M	2	3
Q.4(A)		Introduce the concept of assessing the impact on vegetation and wild Life and discuss the general methodology for the assessment of Impacts on biological environment.	10M	3	4
		OR			
Q.4(B)		Discuss in detail the systematic approach for evaluating biological impacts	10M	3	4
Q.5(A)		Explain and define audit in the context of EIA in detail.	10M	4	4
		OR			
Q.5(B)		Define environmental audit according to ICC and differentiate between financial and environmental audit.	10M	4	4
Q.6(A)		Discuss in detail the Prevention & Control of pollution Act.	10M	5	5
		OR			
Q.6(B)		Discuss in detail the Prevention & Control of pollution Act.	10M	5	5

***** END*****

Hall Ticket No: | | | | | | | | | | | Question Paper Code: 20CSE301

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B. Tech III Year II Semester (R20) Supplementary End Semester Examinations, January– 2025

JAVA PROGRAMMING (OE)

(Common to All)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q.No		Question	Marks	CO	BL
Q.1	i.	What is polymorphism?	1M	1	1
	ii.	List out the java buzzwords.	1M	1	1
	iii.	What is the function of the 'Final' keyword?	1M	2	1
	iv.	Can nested interfaces be private?	1M	2	2
	v.	What is the life cycle of thread in Java scaler?	1M	3	1
	vi	Differentiate between built-exception and User defined Exception	1M	3	2
	vii.	What are character stream classes?	1M	4	1
	viii.	What is a vector in java?	1M	4	1
	ix.	What is JFrame?	1M	5	1
	x.	What is the full form of JDBC? Why is it used?	1M	5	2
Q.2(A)		Describe the need for Object Oriented Programming and its unique advantages	10M	1	2
		OR			
Q.2(B)		Write a program to implement the Fibonacci series using for loop control structure. Also Write its main characteristics of a constructor.	10M	1	3
Q.3(A)		Discuss about Deriving Classes Using extends Keyword with examples. Also write a sample program to represent abstract class.	10M	2	3
		OR			
Q.3(B)		Demonstrate the significance of the CLASSPATH environment variable in creating and using a package in JAVA.	10M	2	3
Q.4(A)		Describe the functioning of nested try blocks and thrown class with an example.	10M	3	2
		OR			
Q.4(B)		With a neat sketch, illustrate the lifecycle of a Thread in JAVA	10M	3	3
Q.5(A)		Discuss in detail about BufferedInputStream and BufferedOutputStream with suitable examples.	10M	4	2
		OR			
Q.5(B)		Illustrate implementation of HashSet in Collection framework.	10M	4	3
Q.6(A)		How does access, update the data with JDBC? Illustrate with an example	10M	5	3
		OR			
Q.6(B)		Write a JAVA program to create different shapes and fill colors using Applet.	10M	5	3

***** END*****

Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 20ECE302

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B.Tech. III Year II Semester (R20) Supplementary End Semester Examinations – January 2025

VLSI DESIGN

(OE-II: Common to all branches, except ECE)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q.No		Question	Marks	CO	BL
Q.1	i.	Draw a voltage transfer curve of CMOS inverter.	1M	1	2
	ii.	Discuss the sources of parasitic delay in CMOS circuits and how they can be mitigated	1M	1	4
	iii.	Describe how CVSL improves noise immunity	1M	2	2
	iv	Explain dynamic power dissipation	1M	2	2
	v.	Implement 2:1 multiplexer using transmission gate.	1M	3	5
	vi	What is the primary function of a Schmitt trigger	1M	3	1
	vii.	What is the primary advantage of dynamic latches and registers over static ones?	1M	4	1
	viii.	What is the primary function of a barrel shifter	1M	4	1
	ix.	Compare FPGA and CPLD.	1M	5	4
	x.	Explain the features of full custom ASIC.	1M	5	2
Q.2(A)		i) Derive the CMOS inverter DC characteristics and obtain the relationship for output voltage at different region in the transfer characteristics.	5M	1	4
		ii) Draw the circuit diagram of CMOS inverter and explain its operation.	5M	1	2
		OR			
Q.2(B)		Design a layout diagram for CMOS 3-input NAND gate.	10M	1	6
Q.3(A)		What is stick diagram and explain about different symbols used for components in Stick diagram. Draw the stick and layout for a two input CMOS NAND gate.	10M	2	1
		OR			
Q.3(B)		Implement full adder using Transmission gate.	10M	2	3
Q.4(A)		Sketch CMOS logic for Y = ((A+B) (C+D))'.	10M	3	4
		OR			
Q.4(B)		i) Discuss the concept of pipelining in digital circuits, its benefits, and its implementation challenges.	10M	3	4
		ii) Compare synchronous design and asynchronous design.		3	4
Q.5(A)		Design a 16-bit carry skip adder with block size of 4	10M	4	6
		OR			
Q.5(B)		Explain the following i) Semi-custom ASIC. ii) Full Custom ASIC.	10M	4	2
Q.6(A)		Discuss about FPGA Interconnect Routing Procedures	10M	5	4
		OR			
Q.6(B)		Explain in detail about boundary scan method	10M	5	2

***** END*****

Hall Ticket No: | | | | | | | | | | | Question Paper Code: 20ECE301

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B.Tech. III Year II Semester (R20) Supplementary End Semester Examinations – January 2025

BIO-MEDICAL ELECTRONICS

(OE-II: Common to all branches, except ECE)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q.No		Question	Marks	CO	BL
Q.1	i.	Define Biomedical Transducer	1M	1	1
	ii.	What is the human physiology	1M	1	1
	iii.	Define Lead. Name the type of leads used for ECG	1M	2	1
	iv	Compare between EMG and EEG.	1M	2	2
	v.	Write the mathematical expression for cardiac output.	1M	3	1
	vi	What is the purpose of using inhalator in respiration measurement.	1M	3	1
	vii.	Why Positron Emitters Commonly used in PET?	1M	4	1
	viii.	What is the range of frequency of ultrasound waves?	1M	4	1
	ix.	List the various aids used for Handicapped person.	1M	5	1
	x.	What are the two types of dialysis.	1M	5	1
Q.2(A)		Describe the transducers used for measurement of dissolved ions and gases.	10M	1	2
Q.2(B)		Explain the transducers used for measurement of linear velocity.	10M	1	2
Q.3(A)		Illustrate the block diagram of an EEG unit and explain the different parts in it.	10M	2	2
		OR			
Q.3(B)		Elaborate the steps for the typical recording setup of EMG and ECG with diagram.	10M	2	2
Q.4(A)		Explain in detail about indirect method of blood pressure measurement.	10M	3	2
		OR			
Q.4(B)		Summarize the different types of methods for measurement of blood flow.	10M	3	2
Q.5(A)		Describe the basic principle & components of Magnetic Resonance Imaging system.	10M	4	2
		OR			
Q.5(B)		List the properties of x-rays and explain various subsystems of x-ray machine.	10M	4	3
Q.6(A)		Explain in detail about various parts of Heat Lung machine.	10M	5	2
		OR			
Q.6(B)		Discuss in detail about the Artificial Kidney.	10M	5	2

***** END*****

Hall Ticket No: | | | | | | | | | | | Question Paper Code: 20EEE302

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B.Tech. III Year II Semester (R20) Supplementary End Semester Examinations – January 2025

INTRODUCTION TO MEMS

(OE-II: Common to all branches, except EEE)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q.No		Question	Marks	CO	BL
Q.1	i.	What do you understand by MEMS?	1M	1	2
	ii.	What is scaling?	1M	1	1
	iii.	Name the different types of pressure sensors.	1M	2	1
	iv	Write the principle of parallel plate capacitor.	1M	2	1
	v.	Give the name of any two silicon compounds.	1M	3	1
	vi	What are different types of micro fabrication process?	1M	3	2
	vii.	Write the basic principle of the finite element method.	1M	4	1
	viii.	What is a gyroscope?	1M	4	2
	ix.	Which is the principal material for fabricating optical MEMS?	1M	5	2
	x.	What do you understand by turbulence measurement?	1M	5	2
Q.2(A)		Elaborate the multidisciplinary nature of microsystem Design and Manufacturing process.	10M	1	3
		OR			
Q.2(B)		Explain about various industrial applications of MEMS.	10M	1	2
Q.3(A)		Discuss the typical micro pressure sensor assembly with a necessary diagram and explain its working principle in detail.	10M	2	3
		OR			
Q.3(B)		Explain principle and working of accelerometer type of micro sensor.	10M	2	2
Q.4(A)		Explain about following fabrication methods i) Ion implantation ii) Diffusion.	10M	3	3
		OR			
Q.4(B)		Explain Chemical Vapor Deposition (CVD) and Physical Vapor Deposition (PVD) techniques for thin film deposition.	10M	3	3
Q.5(A)		Explore the key design considerations involved in microsystem development.	10M	4	3
		OR			
Q.5(B)		Explain how a piezoelectric principle can be modelled using simulation.	10M	4	4
Q.6(A)		Explain the design and functionality of optical MEMS devices, highlighting their applications and advantages.	10M	5	4
		OR			
Q.6(B)		Detail the working mechanism of micro-actuators employed for controlling fluid flow in microfluidic systems, discussing their performance and potential applications.	10M	5	4

***** END*****

Hall Ticket No: | | | | | | | | | | | Question Paper Code: 20CHE302

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B. Tech III Year II Semester (R20) Supplementary End Semester Examinations, January- 2025

GREEN CHEMISTRY AND CATALYSIS FOR SUSTAINABLE ENVIRONMENT

(OE- Common to All)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q.No		Question	Marks	CO	BL
Q.1	i.	State any two principles of green chemistry.	1M	1	1
	ii.	Illustrate Anti-Markovnikov's rule?	1M	1	1
	iii.	Differentiate positive and negative catalysts, give examples for each.	1M	2	1
	iv.	Give any two examples of Biocatalyst	1M	2	2
	v.	What are supercritical fluids?	1M	3	2
	vi	Mention any two adverse effects of volatile organic solvents on humans	1M	3	2
	vii.	Differentiate thermolysis with pyrolysis.	1M	4	1
	viii.	In which process biomass was treated with bacteria to produce Methane.	1M	4	1
	ix.	List out any two traditional methods of making nanomaterials.	1M	5	1
	x.	Define top-down and bottom-up approached in nanomaterial synthesis.	1M	5	1
Q.2(A)		Describe any four atom economic rearrangement reactions and calculate the percentage economy for each?	10M	1	6
		OR			
Q.2(B)		Brief out the principles of Green chemistry	10M	1	6
Q.3(A)		Describe the synthesis and applications of High silica zeolites?	10M	2	2
		OR			
Q.3(B)		Write a brief note on ZSM-5? Describe the commercial uses?	10M	2	5
Q.4(A)		Write the applications of ScH_2O as reaction solvent.	10M	3	6
		OR			
Q.4(B)		With a neat phase diagram explain $ScCO_2$ and discuss the application of $ScCO_2$ as reaction solvent?	10M	3	6
Q.5(A)		Elaborate on photochemical and sonochemical syntheses with suitable example.	10M	4	
		OR			
Q.5(B)		Elaborate on photochemical and sonochemical syntheses with suitable example.	10M	4	5
Q.6(A)		Discuss in detail the synthesis of nanomaterials using microwave and reflux methods	10M	5	5
		OR			
Q.6(B)		Discuss in detail the synthesis of nanomaterials using microwave and reflux methods	10M	5	5

***** END*****

Hall Ticket No: | | | | | | | | | | | Question Paper Code: 20CST301

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B. Tech III Year II Semester (R20) Supplementary End Semester Examinations, January– 2025

OPERATING SYSTEMS (OE-II)

(Common to All)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q.No		Question	Marks	CO	BL
Q.1	i.	What is meant by system call?	1M	1	1
	ii.	Write two Objectives of an Operating System.	1M	1	1
	iii.	What is Semaphores?	1M	2	1
	iv.	Define Process synchronization.	1M	2	1
	v.	List out the necessary conditions for a Deadlock situation to arise.	1M	3	2
	vi	What is CPU Scheduling?	1M	3	1
	vii.	What is Virtual Memory?	1M	4	1
	viii.	What is demand paging?	1M	4	1
	ix.	Draw the Disk Structure	1M	5	2
	x.	How could protect the file sharing?	1M	5	2
Q.2(A)		Elaborate the operations and generic structure of Operating System.	10M	1	2
		OR			
Q.2(B)		Explain about the computer system organization in detail.	10M	1	2
Q.3(A)		Discuss any two classic problems of synchronization.	10M	2	2
		OR			
Q.3(B)		Illustrate the process of Inter processCommunication.	10M	2	3
Q.4(A)		Assume the following workload in a system Process Arrival Time Burst Time P1 5 5 P2 4 6 P3 3 7 P4 1 9 P5 2 2 P6 6 3 Draw a Gantt chart illustrating the execution of these jobs using Round robin scheduling algorithm and also Calculate the average waiting time and average turnaround time.	10M	3	3
		OR			
Q.4(B)		Write about deadlock avoidance algorithm in detail.	10M	3	2
Q.5(A)		Explain the various deadlock handling mechanism in detail.	10M	4	2
		OR			
Q.5(B)		Consider the following memory partitions of 100 KB, 500 KB, 200 KB, 300 KB, and 600 KB. How would each of the First fit Best-Fit and Worst-Fit algorithms place processes of 212 KB, 417 KB, 112 KB, and 426 KB? Rank the algorithms in terms of how efficiently they use memory.	10M	4	3
Q.6(A)		Illustrate the process of any two disk scheduling algorithms.	10M	5	3
		OR			
Q.6(B)		Discuss in detail about different file access methods.	10M	5	2

***** END*****

Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 20EEE301

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B.Tech. III Year II Semester (R20) Supplementary End Semester Examinations – January 2025

INDUSTRIAL ELECTRICAL SYSTEMS

(OE-II: Common to all branches, except EEE)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q.No		Question	Marks	CO	BL
Q.1	i.	Write any two differences between MCCB and ELCB?	1M	1	1
	ii.	Define fuse and fuse element.	1M	1	1
	iii.	What are the advantages of earthing system?	1M	2	1
	iv	Sketch the single diagram for a single phase installation	1M	2	1
	v.	What is meant by depreciation?	1M	3	1
	vi	What is lamp efficiency?	1M	3	1
	vii.	Define depreciation factor.	1M	4	1
	viii.	Define power factor.	1M	4	1
	ix.	List different types of batteries available for UPS.	1M	5	1
	x.	What is the need of SCADA system in distribution automation?	1M	5	1
Q.2(A)		Write a short note on types of cables and factors affecting the electrical wiring system.	10M	1	2
		OR			
Q.2(B)		Explain the Electrical safety rules and Electrical Safety precautions.	10M	1	2
Q.3(A)		Explain briefly about different types of residential and commercial wiring systems.	10M	2	2
		OR			
Q.3(B)		Explain with the help of single line diagram the installation of three-phase four-wire distribution for single and three-phase load having a common main switch fuse.	10M	2	2
Q.4(A)		With the help of neat sketch, explain the construction and operation of Incandescent lamp.	10M	3	2
		OR			
Q.4(B)		Explain the method of Light Calculation for Flood Lighting.	10M	3	2
Q.5(A)		What is an industrial substation and with the help of a neat sketch? explain outdoor substation.	10M	4	2
		OR			
Q.5(B)		Explain the starting methods of three phase Induction motor and synchronous motor with the help of neat diagram.	10M	4	2
Q.6(A)		Explain SCADA system for distribution automation.	10M	5	2
		OR			
Q.6(B)		Write a short note on i) PLC based control system design ii) Panel Metering.	10M	5	2

***** END*****

Hall Ticket No: | | | | | | | | | | | Question Paper Code: 20ME301

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B. Tech III Year II Semester (R20) Supplementary End Semester Examinations, January– 2025

MATERIAL SCIENCE FOR ENGINEERS

(Mechanical Engineering)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q.No		Question	Marks	CO	BL
Q.1	i.	Define a material?	1M	1	1
	ii.	Write the classifications of structural materials?	1M	1	1
	iii.	Define Fick's Law of diffusion?	1M	2	1
	iv.	What is a vacancy and interstitial defect?	1M	2	1
	v.	What is Electrical Conductivity?	1M	3	2
	vi	What is the electron mobility?	1M	3	1
	vii.	Write the examples of paramagnetic materials?	1M	4	2
	viii.	What is called superconductivity?	1M	4	1
	ix.	What are the components of photonics?	1M	5	2
	x.	Write the full form of LASER?	1M	5	1
Q.2(A)	Explain the following i) FCC ii) BCC iii) HCP iv) SC		10M	1	2
	OR				
Q.2(B)	Explain the general principle of MILLER INDICES procedure with example?		10M	1	2
Q.3(A)	Write the factors affecting diffusion?		10M	2	2
	OR				
Q.3(B)	Briefly explain the most common mechanisms for diffusion?		10M	2	2
Q.4(A)	Explain about Ferroelectric Materials and Piezoelectric Materials?		10M	3	2
	OR				
Q.4(B)	Explain briefly about Intrinsic and Extrinsic Semi conduction?		10M	3	2
Q.5(A)	Differentiate the Diamagnetism and Paramagnetism?		10M	4	2
	OR				
Q.5(B)	Write the differences between Ferromagnetism and Ferrimagnetism.		10M	4	2
Q.6(A)	Explain about LED and OLED?		10M	5	2
	OR				
Q.6(B)	Explain any one type of Photon absorption Devices with neat sketch?		10M	5	2

***** END*****

Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 20CSE302

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B. Tech III Year II Semester (R20) Supplementary End Semester Examinations, January- 2025

MULTIMEDIA TECHNOLOGIES

(Common to All)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q.No		Question	Marks	CO	BL
Q.1	i.	What are the primary elements of multimedia?	1M	1	1
	ii.	Name two common applications of multimedia.	1M	1	1
	iii.	Name a common format used for compressing video files.	1M	2	1
	iv.	Which audio compression format is known for preserving sound quality at a reduced file size?	1M	2	1
	v.	What type of sensor is most commonly found in consumer digital cameras: CCD or CMOS?	1M	3	1
	vi	How is digital voice integrated into multimedia applications?	1M	3	1
	vii.	Describe one key feature of Media on Demand services.	1M	4	1
	viii.	What is ITV, and how does it differ from traditional television broadcasting?	1M	4	1
	ix.	What is the purpose of validation in the digital forensics process?	1M	5	1
	x.	How does steganography differ from digital watermarking?	1M	5	1
Q.2(A)		Critically evaluate the standards for multimedia data interfaces.	10M	1	5
		OR			
Q.2(B)		Explore the structure and functionality of multimedia databases.	10M	1	4
Q.3(A)		Explain the Resource Interchange File Format (RIFF) and its importance in multimedia.	10M	2	2
		OR			
Q.3(B)		Analyze the role of the MIDI file format in music production and multimedia presentations.	10M	2	4
Q.4(A)		Explain video motion analysis and its applications in different fields.	10M	3	2
		OR			
Q.4(B)		Compare and contrast the advantages and disadvantages of various digital camera formats, including DSLRs, mirrorless, and compact cameras.	10M	3	2
Q.5(A)		Analyze different broadcast schemes for Video on Demand (VoD) and implications for network traffic and user experience.	10M	4	4
		OR			
Q.5(B)		Explore the challenges of transmitting multimedia over wireless networks and strategies to overcome them.	10M	4	2
Q.6(A)		Analyze the steps involved in the forensic analysis of digital multimedia content.	10M	5	4
		OR			
Q.6(B)		Evaluate methods used for the validation and verification of findings in digital multimedia forensics.	10M	5	5

***** END*****

Hall Ticket No: | | | | | | | | | | | Question Paper Code: 20MAT301

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B. Tech III Year II Semester (R20) Supplementary End Semester Examinations, January– 2025

ADVANCED NUMERICAL METHODS (OE)

(Common to All)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q.No		Question	Marks	CO	BL
Q.1	i.	What are the kinds of errors in Numerical procedures	1M	1	1
	ii.	Write the condition for the convergence of Newton's method	1M	1	1
	iii.	Explain the process of LU decomposition method	1M	2	1
	iv.	Evaluate 1- and ∞ - norms of the matrix $A=\begin{bmatrix}5 & -9 & 6\\ 2 & -7 & 4\\ 1 & 5 & 8\end{bmatrix}$	1M	2	3
	v.	Write the formula for inverse interpolation of the polynomial with x - values unevenly spaced.	1M	3	1
	vi	Define Simpson's 3/8 rule.	1M	3	1
	vii.	Define the fourth order Runge-Kutta method formula	1M	4	1
	viii.	Explain initial value and boundary value problems	1M	4	2
	ix.	Write different types of partial differential equations.	1M	5	1
	x.	Write the form of vibrating spring in partial differential equation.	1M	5	1
Q.2(A)		Find a root of $f(x)=4x^3-1-\exp\left(\frac{x^2}{2}\right)$ with Newton's method	10M	1	3
		OR			
Q.2(B)		Find a root of $f(x)=x^2+e^x-5$ by Regula-falsi method	10M	1	3
Q.3(A)		Solve the system $2.51x+1.48y+4.53z=0.05$, $1.48x+0.93y-1.30z=1.03$, $2.68x+3.04y-1.48z=-0.53$ by using Gaussian elimination.	10M	2	3
		OR			
Q.3(B)		Solve the system by LU Decomposition method $2x_1+3x_2+x_3=9$, $x_1+2x_2+3x_3=6$, $3x_1+x_2+2x_3=8$	10M	2	3
Q.4(A)		Find $y(2)$ from the following data using Lagrange's formula	10M	3	3

x	0	1	3	4	5
y	0	1	81	256	625

		OR			
Q.4(B)		Evaluate $\int_{0.2}^{2.6} e^{-x^2}dx$ with the proper number of sub intervals by using a) Simpson's $\frac{1}{3}$ rule and b) Simpson's $\frac{3}{8}$ rule	10M	3	3
Q.5(A)		Solve $y'=\sin x+y$, $y(0)=2$ by the modified Euler method to get $y(0.2)$	10M	4	3
		OR			

Q.5(B)	Determine the value of y by the fourth order Runge-Kutta method when $x=1.2$ given that $y(1)=0$, $\frac{dy}{dx}=x^2+y^2$ and $h=0.1$	10M	4	3
Q.6(A)	Solve the heat equation problem $\frac{\partial u}{\partial t}=\frac{\partial^2 u}{\partial x^2}$ subject to the conditions $u(x,0)=0$ and $u(0,t)=0; u(1,t)=t$, find the value of $u\left(\frac{1}{2},\frac{1}{8}\right)$ taking $h=0.25$ and $l=0.125$.	10M	5	4
	OR			
Q.6(B)	Solve the equation $u_{tt}=u_{xx}$ subject to the following conditions $u(0,t)=0$, $u(1,t)=0$, $t>0$ and $\frac{\partial u}{\partial t}(x,0)=0$, $u(x,0)=\sin^3(\pi x)$, $0\le x\le 1$ with $h=0.25$ and $l=0.2$.	10M	5	4

***** END*****

Hall Ticket No: | | | | | | | | | | | Question Paper Code: 20CE4M10

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B. Tech III Year II Semester (R20) Supplementary End Semester Examinations, January – 2025

SAFETY IN CONSTRUCTION (MOOC)

(Civil Engineering)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q.No		Question	Marks	CO	BL
Q.1	i.	What is the primary goal of an accident investigation?	1M	1	1
	ii.	Name one key consideration for effective fire safety management.	1M	1	1
	iii.	How does the hierarchy of controls prioritize risk mitigation strategies?	1M	2	1
	iv.	What is the purpose of a job hazard analysis?	1M	2	1
	v.	What is the penalty for violating safety regulations?	1M	3	1
	vi	What are the steps involved in performing a risk assessment?	1M	3	1
	vii.	How can regular employee training contribute to improved safety outcomes?	1M	4	1
	viii.	Identify one common ergonomic hazard found in office environments.	1M	4	1
	ix.	What role does PPE play in minimizing exposure to hazardous substances?	1M	5	1
	x.	What are the key considerations for fire safety?	1M	5	1
Q.2(A)		What are the key components of OSHA regulations that contribute to maintaining a safe working environment?	10M	1	2
		OR			
Q.2(B)		Discuss two theories of accident causation and provide examples to support your explanation.	10M	1	2
Q.3(A)		How do emergency action plans contribute to fire safety in the workplace?	10M	2	2
		OR			
Q.3(B)		What are the common causes of workplace fires, and how can they be prevented?	10M	2	2
Q.4(A)		In what ways can effective communication enhance compliance with OSHA regulations?	10M	3	3
		OR			
Q.4(B)		Discuss the importance of conducting job hazard analysis in construction and explain the steps involved in this process.	10M	3	2
Q.5(A)		Describe the process of accident investigation and explain how it preventing future accidents.	10M	4	2
		OR			
Q.5(B)		What role do regular safety audits play in identifying potential fire hazards and ensuring compliance with fire safety regulations?	10M	4	3
Q.6(A)		Describe the fire hazards typically encountered in construction sites and discuss the preventive measures to ensure fire safety.	10M	5	2
		OR			
Q.6(B)		Describe the key components of a safety culture and discuss its significance in promoting a safe work environment.	10M	5	2

***** END*****

Hall Ticket No: | | | | | | | | | | | Question Paper Code: 20CE4M12

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B. Tech III Year II Semester (R20) Supplementary End Semester Examinations, January – 2025

AIR POLLUTION AND CONTROL (MOOC)

(Civil Engineering)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q.No		Question	Marks	CO	BL
Q.1	i.	Define Air Pollution?	1M	1	1
	ii.	Enlist the Short-term health effects caused by Air Pollution?	1M	1	1
	iii.	Define Acid rain?	1M	2	1
	iv.	Carboxy-Hemoglobin caused by?	1M	2	1
	v.	What are the Source of Air pollution?	1M	3	1
	vi	What is $P.M_{2.5}$?	1M	3	1
	vii.	Enlist the primary pollutants?	1M	4	1
	viii.	Write down the example for Aerial Sources of Air Pollution?	1M	4	1
	ix.	What is AQI?	1M	5	1
	x.	What is Plume?	1M	5	1
Q.2(A)		What is Air Pollution? Explain the Causes and Control measures of Air Pollution?	10M	1	2
		OR			
Q.2(B)		Explain about the Common air pollutants which affecting human health.	10M	1	2
Q.3(A)		What is Greenhouse effect? Explain the Causes and Effects of Greenhouse effect?	10M	2	2
		OR			
Q.3(B)		Explain about different types of Plume behavior?	10M	2	2
Q.4(A)		What are the different types of Sources of air pollution? Explain it in detail?	10M	3	2
		OR			
Q.4(B)		What are the Major Indoor air pollution? How it effects the human health.	10M	3	2
Q.5(A)		Explain about any two control measures of gases matter.	10M	4	2
		OR			
Q.5(B)		Explain about any two control measures of particulates matter?	10M	4	2
Q.6(A)		What are the Materials and Method used solve the indoor air pollution problem. Explain it in detail?	10M	5	2
		OR			
Q.6(B)		Write down about Air pollution Impacts on (i) atmosphere (ii) climate (iii) soil	10M	5	2

***** END*****

Hall Ticket No: | | | | | | | | | | | Question Paper Code: 20CE4M11

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B. Tech III Year II Semester (R20) Supplementary End Semester Examinations, January – 2025

PLASTIC WASTE MANAGEMENT (MOOC)

(Civil Engineering)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q.No		Question	Marks	CO	BL
Q.1	i.	What is Plastic waste means?	1M	1	1
	ii.	What is Thermoplastic?	1M	1	1
	iii.	Define Compostable Plastic?	1M	2	1
	iv.	Which state in India is now completely Plastic free?	1M	2	1
	v.	In which year Plastic rules were revised?	1M	3	1
	vi	Define Rigid Plastic?	1M	3	1
	vii.	PET Stands for?	1M	4	1
	viii.	What is the key objective of the Plastic Waste Management Rules 2016 in India?	1M	4	1
	ix.	Which type of plastic is most widely recycled?	1M	5	1
	x.	What is the effect of micro plastics on human health?	1M	5	1
Q.2(A)		What is Plastic? Explain about different types of Plastic in detail?	10M	1	2
		OR			
Q.2(B)		Explain about different types of Manufacturing Process of Plastic?	10M	1	2
Q.3(A)		What are the Sources of plastic waste? Explain it in detail?	10M	2	2
		OR			
Q.3(B)		Discuss the Plastic Waste Management Rules 2016 (India), including their objectives and challenges.	10M	2	2
Q.4(A)		What are the environmental impacts of plastic waste on land and water ecosystems?	10M	3	2
		OR			
Q.4(B)		Write down about Plastic Waste Impacts on Human Health and Environment	10M	3	2
Q.5(A)		Discuss the challenges and benefits of using plastic waste in road construction.	10M	4	2
		OR			
Q.5(B)		What are the potential greener alternatives to plastics, and what are their benefits?	10M	4	2
Q.6(A)		Discuss the role of the public in plastic waste management. What are some effective awareness campaigns?	10M	5	2
		OR			
Q.6(B)		How can plastics contribute to a circular economy? Discuss the processes involved.	10M	5	2

***** END*****

Hall Ticket No: | | | | | | | | | | | Question Paper Code: 20EEE4M06C

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B. Tech III Year II Semester (R20) Supplementary End Semester Examinations, January – 2025

NON-CONVENTIONAL ENERGY RESOURCES (MOOC)

(Electrical & Electronics Engineering)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q.No		Question	Marks	CO	BL
Q.1	i.	Why does the presence of carbon dioxide gas in the atmosphere affect the global temperature?	1M	1	2
	ii.	State the significance of GDP in a nation.	1M	1	1
	iii.	A p-n junction semiconductor material is kept in the sunlight for some time. What will be the biasing condition of this junction?	1M	2	2
	iv	Which region of a p-n junction is critical to the capture of solar energy by preventing recombination?	1M	2	2
	v.	What is Betz limit?	1M	3	1
	vi	Define HAWT and VAWT	1M	3	1
	vii.	What is the disadvantage of dendrite growth in Lithium battery?	1M	4	2
	viii.	State the significance of OTEC plant	1M	4	1
	ix.	Define regenerative breaking?	1M	5	1
	x.	Write down the differences between capacitor and super capacitor.	1M	5	1
Q.2(A)		Describe the different kinds of energy sources available in India and discuss the energy consumption pattern.	10M	1	2
		OR			
Q.2(B)		Classify the different types of energy sources. Write about the worldwide consumption pattern of these sources.	10M	1	3
Q.3(A)		Write solar PV cell principal of operation and explain the IV characteristics, I_{sc}, V_{oc} and FF and their relations.	10M	2	2
		OR			
Q.3(B)		Describe in detail about the components of solar thermal energy systems in context with power generation.	10M	2	1
Q.4(A)		Describe in detail about the relation between wind speed and power. With the help of equations, derive the power extracted from the wind.	10M	3	3
		OR			
Q.4(B)		Discuss the working principle of horizontal axis wind turbine and vertical axis wind turbine in detail.	10M	3	2
Q.5(A)		Mention the various sources of biomass energy. What are the various crop residues used for biomass.	10M	4	2
		OR			
Q.5(B)		Explain in detail about the geothermal power plant with neat diagram.	10M	4	2
Q.6(A)		Briefly explain the concepts of super-capacitors in terms of charging & discharging properties and energy storage.	10M	5	2
		OR			
Q.6(B)		Briefly explain the concept of flywheel energy storage system.	10M	5	3

***** END*****

Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 20ME4M09

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B. Tech III Year II Semester (R20) Supplementary End Semester Examinations, January – 2025

ITRODUCTION TO MACHINING AND MACHINING FLUIDS (MOOC)

(Mechanical Engineering)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q.No		Question	Marks	CO	BL
Q.1	i.	What is the difference between top-down and bottom-up approaches in manufacturing?	1M	1	1
	ii.	How is chip thickness measured in machining?	1M	1	1
	iii.	What are the different types of lubrication used in machining?	1M	2	1
	iv.	How is surface roughness measured and controlled in machining?	1M	2	1
	v.	What are the health hazards associated with cutting fluid emissions?	1M	3	1
	vi	What factors affect tool life in machining?	1M	3	1
	vii.	What is the difference between single-point and multi-point cutting tools?	1M	4	2
	viii.	How does superfinishing differ from other finishing processes?	1M	4	2
	ix.	What are advanced materials?	1M	5	1
	x.	What are the challenges associated with machining advanced materials?	1M	5	2
Q.2(A)		Discuss the importance of machining in the manufacturing industry. Provide examples of various machining processes and their applications.	10M	1	2
		OR			
Q.2(B)		Discuss the various cutting forces acting on a cutting tool during machining. Explain how these forces are measured and their impact on tool wear and surface finish.	10M	1	3
Q.3(A)		Discuss the role of tribology in understanding the tool-workpiece interface in machining. Explain how friction and wear affect the cutting process.	10M	2	2
		OR			
Q.3(B)		Elaborate on the different types of lubrication used in machining, including their advantages and disadvantages.	10M	2	2
Q.4(A)		Discuss the various mechanisms of tool wear in machining, including their causes and effects on tool performance.	10M	3	1
		OR			
Q.4(B)		Discuss the various functions of cutting fluids in machining, including cooling, lubrication, chip removal, and cleaning.	10M	3	1
Q.5(A)		Explain the principle of milling and drilling process.	10M	4	2
		OR			
Q.5(B)		Discuss the various abrasive machining processes, including grinding, lapping, honing, and superfinishing.	10M	4	2
Q.6(A)		Explain the principles of hard machining and its applications. Discuss the challenges and advantages of using hard machining techniques.	10M	5	2
		OR			
Q.6(B)		Discuss the advantages and disadvantages of using high-speed machining.	10M	5	2

***** END*****

Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 20ECE4M03

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B.Tech. III Year II Semester (R20) Supplementary End Semester Examinations – January 2025

COMPUTER NETWORKS AND INTERNET PROTOCOL (MOOC)

(ECE)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either Part-A or B only

Q.No		Question	Marks	CO	BL
Q.1	i.	Who defines the Internet architecture?	1M	1	1
	ii.	Define the Internet Protocol (IP).	1M	1	1
	iii.	What is the purpose of DNS in computer networks.	1M	2	1
	iv	What is congestion avoidance?	1M	2	1
	v.	Name two common Transport Layer protocols.	1M	3	1
	vi	What is the role of router in network layer?	1M	3	1
	vii.	Expand DHCP.	1M	4	1
	viii.	Define subnetting in the Network Layer.	1M	4	2
	ix.	What is the full form of CSMA/CD?	1M	5	1
	x.	Define the term "framing" in the Data Link Layer.	1M	5	1
Q.2(A)		Explain the principles of packet switching, emphasizing its dedicated and continuous communication paths.	10M	1	2
		OR			
Q.2(B)		Discuss specific functions and responsibilities of each layer in the TCP/IP protocol stack.	10M	1	2
Q.3(A)		Discuss the following application layer services: i. Email ii. DNS	10M	2	2
		OR			
Q.3(B)		Discuss the following application layer services: i. HTTP ii. FTP	10M	2	1
Q.4(A)		Explain the concept of flow control in the transport layer. How this mechanism contributes to the efficient and reliable transfer of data across a network.	10M	3	2
		OR			
Q.4(B)		Explain the concept of sliding window protocols in the context of data communication.	10M	3	2
Q.5(A)		Differentiate between IPv4 and IPv6 addressing schemes. What are the main reasons for transitioning from IPv4 to IPv6?	10M	4	4
		OR			
Q.5(B)		Analyze the significance of scheduling in Queuing and Congestion Avoidance.	10M	4	4
Q.6(A)		Explain the following: i. Logical Link Control ii. Medium Access Control	10M	5	2
		OR			
Q.6(B)		Explain time division multiplexing with neat block diagram.	10M	5	2

*** END***

Hall Ticket No: | | | | | | | | | | | Question Paper Code: 20EEE4M08/20ECE4M06

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B.Tech. III Year II Semester (R20) Supplementary End Semester Examinations – January 2025

COMMUNICATION NETWORKS (MOOC)

(Common to EEE & ECE)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either Part-A or B only

Q. No		Question	Marks	CO	BL
Q.1	i.	What is space switching?	1M	1	1
	ii.	What is the difference between Circuit Switching & Packet Switching?	1M	1	2
	iii.	Mention the advantage and disadvantage of slotted ALOHA	1M	2	1
	iv.	What is PON?	1M	2	1
	v.	Define RARP.	1M	3	1
	vi.	What is ARP?	1M	3	2
	vii.	What is memoryless system ?	1M	4	1
	viii.	What is DTMC?	1M	4	1
	ix.	Define cognitive network.	1M	5	1
	x.	What is network Slicing?	1M	5	1
Q.2(A)		Explain 4x4 STS switching in detail.	10M	1	1
		OR			
Q.2(B)		Explain Synchronization in switching in detail.	10M	1	1
Q.3(A)		Why CSMA/CD is required for Wired communication? Explain CSMA/CD Computing Detection in detail with neat diagram.	10M	2	1
		OR			
Q.3(B)		Explain Slotted ALOHA protocol in detail.	10M	2	1
Q.4(A)		Explain Distance Vector Routing Protocol with example.	10M	3	1
Q.4(B)		Explain TCP Flow control mechanism in detail.	10M	3	1
Q.5(A)		State and prove the Little's Theorem.	10M	4	2
		OR			
Q.5(B)		Explain in detail about DTMC.	10M	4	1
Q.6(A)		What is Cognitive Network & explain in detailed about Software-Defined Networking (SDN)?	10M	5	1
		OR			
Q.6(B)		Write shot note on NAT and NFV.	10M	5	1

*** END***

Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 20CSE4M08 /20CAI4M08

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B. Tech III Year II Semester (R20) Supplementary End Semester Examinations, January – 2025

CLOUD COMPUTING AND DISTRIBUTED SYSTEMS (MOOC)

(Common to CSE and, CSE-AI)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q.No		Question	Marks	CO	BL
Q.1	i.	What are the three service models of cloud computing?	1M	1	1
	ii.	Define virtualization in cloud computing.	1M	1	1
	iii.	What is server virtualization?	1M	2	1
	iv.	Define Software-Defined Network (SDN).	1M	2	1
	v.	Define the term "ring structure" in leader election.	1M	3	1
	vi	Name two leader election algorithms.	1M	3	1
	vii.	Define Chandy-Lamport snapshot algorithm.	1M	4	1
	viii.	Mention one type of failure in distributed systems.	1M	4	1
	ix.	Define HBase.	1M	5	1
	x.	Name one feature of Apache Kafka.	1M	5	1
Q.2(A)	Discuss the challenges of cloud computing.		10M	1	2
	OR				
Q.2(B)	Explain hotspot mitigation in virtual machine migration with an example.		10M	1	2
Q.3(A)	Describe the architecture of geo-distributed cloud data centers.		10M	2	2
	OR				
Q.3(B)	What are the challenges in managing cloud data centers?		10M	2	2
Q.4(A)	Explain the working of the Ring Leader Election Algorithm with an example.		10M	3	2
	OR				
Q.4(B)	Explain the architecture and features of Zookeeper.		10M	3	2
Q.5(A)	Explain logical and physical clocks with examples.		10M	4	2
	OR				
Q.5(B)	Describe the Paxos algorithm for consensus in cloud computing.		10M	4	2
Q.6(A)	Explain the design and applications of key-value stores.		10M	5	2
	OR				
Q.6(B)	Discuss the working of the MapReduce framework.		10M	5	2

*** END***

Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 20CST4M04 /20CSD4M04 / 20CSC4M04

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B. Tech III Year II Semester (R20) Supplementary End Semester Examinations, January – 2025

PRIVACY AND SECURITY IN ONLINE SOCIAL MEDIA (MOOC)

(Common to CST, CSE-DS and CSE-CS)

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q.No		Question	Marks	CO	BL
Q.1	i.	What does Velocity specify in 5 V's of social media?	1M	1	1
	ii.	Which network is considered as the regional language micro blogging website?	1M	1	1
	iii.	Which features perform better to distinguish fake and legitimate tweets?	1M	2	1
	iv	Tweet about, "Floods in McDonalds at Virginia Beach" is related to which misinformation news spreads?	1M	2	1
	v.	Name the pair of social platforms that are adopted by different Police departments to engage with people.	1M	3	2
	vi	An adjacency matrix and XML file format are preferably for representing what kind of data?	1M	3	1
	vii.	Which Centrality measure is appropriate for finding the most popular person in the friendship network?	1M	4	1
	viii.	What is the legit way to identify the popularity of a web page?	1M	4	5
	ix.	Give an example for location based social networks.	1M	5	2
	x.	What is the term used for generating the usernames and monetizing?	1M	5	1
Q.2(A)		Discuss the different types of social media in an online network.	10M	1	2
		OR			
Q.2(B)		Explain 5 V's of online social media.	10M	1	2
Q.3(A)		Elaborate with an example about the location based social network.	10M	2	2
		OR			
Q.3(B)		Describe the terminologies of Twitter.	10M	2	1
Q.4(A)		How we can identify fake account in Online Social Media Platform. Explain in detail.	10M	3	3
		OR			
Q.4(B)		Discuss the different types of phishing Attacks in an online network.	10M	3	2
Q.5(A)		With suitable graph diagram, explain Network Analysis of Fake Accounts.	5M	4	2
		OR			
Q.5(B)		Discuss in detail about Westin's 3 categories.	10M	4	2
Q.6(A)		Elaborate the different Privacy and security issues related to location based networks.	10M	5	2
		OR			
Q.6(B)		Discuss about various methods available for Analyzing Fake Content on social media platforms.	10M	5	2

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