Hall Ticket No: | | | | | | | | | | | Question Paper Code: 14ENG11T01

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B.Tech I Year I& II Semester (R14) Supplementary End Semester Examinations –DEC 2019

FUNCTIONAL ENGLISH

(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 Part-A or B only

Q.1	i.	Fill in the blank with appropriate article. Are you coming to _____party next Saturday?	1M
	ii.	Write the noun for the given verb in brackets.(DELIVER)	1M
	iii.	Use the phrase *break down* in your own sentences.	1M
	iv	Change the following sentence into passive voice. Tom painted the entire house.	1M
	v.	Make the following sentence more empathetic by using *I appreciate.* join me for the lunch today.	1M
	vi	Write one word Substitute for the following sentence. A person who speaks many languages.	1M
	vii.	Rewrite the following sentence using conditional clause *If* It may rain. We will cancel the trip .	1M
	viii.	Why do people exercise. State one reason.	1M
	ix.	Fill in the blank with suitable preposition. I prefer to read _____ the library.	1M
	x.	Use the idiom *the best of both worlds* in your own sentence.	1M

Q.2(A) Is social media actually connecting people? Justify the statement in 300 words. 10M

OR

Q.2(B) Fill in the blanks with appropriate verb forms 10M

i. He is_____ (addict) to smoking.
ii. We are all tired of_____(listen) to her complaints.
iii. She _____(leave) in a hurry.
iv. The dog ____(run) across the yard.
v. The town_____(destroy) by the tornado.
vi. Vijay_____(step)on the _____(break)glass pieces and cried.
vii. Dinkar enjoys _____(watch) plays.
viii. We didn't see any point_____(extend) our stay.
ix. A butterfly _____(fly) past the window.

Q.3(A) Here are some linking words. Link the events in the story by filling the gaps with the Words from the box. 10M

Initially	Finally	when	then
As soon as	While	After that	
Immediately	Unexpectedly	Next	During

My friend and I visited Rome last summer. (1) _____, we flew from New York to Rome in first class. It was fantastic! (2) _____ we arrived in Rome, we (3) _____ went to the hotel and took a long nap. (4) _____, we went out to find a great restaurant for dinner. (5) _____, a scooter appeared out of nowhere and almost hit me! The rest of the trip had no

surprises. (6) _____, we began to explore Rome. (7) _____ the afternoons, we visited ruins and museums. At night, we hit the clubs and wandered the streets. One night, (8) _____ I was getting some ice cream, I saw an old friend from high school. Imagine that! He was overjoyed (9)_____he saw me,(10) _____, we caught our flight back to New York. We were happy and ready to begin work again.

OR

Q.3(B) Use the hints below and develop into a story 10M

God's promise to a disciple to visit her- disciple cleans her house and waits for God- poor old lady knocks her door - disciple doesn't help her -tells her not to waste her time - next, beggar comes at her door step she doesn't entertain him either - Finally a child knocks her door - she sends him away too - dreams of God that night - God tells him that he had come thrice at her door step, but she didn't bother - lady disappointed.

Q.4(A) i. Rewrite the following sentences using may, might or be allowed to ,whichever is appropriate 5M

i. Perhaps Jack will come to see us tomorrow.
ii. We will be late for the meeting.
iii. I think the car is at the car parking.
iv. Visitors cannot stay in the hospital after 8'o clock.
v. I'm thinking of joining you tomorrow.

ii. Rewrite the following sentences using certain to, likely to, unlikely to whichever is appropriate 5M

i. The economy will recover slowly after the long recession.
ii. The weather doesn't seem to change over the next few days.
iii. I expect there will be a big crowd at the match tonight.
iv. If you smoke heavily, you will die young.
v. I'm quite sure she will be given the job.

OR

Q.4(B) Write suitable dialogues for the following situations 10M

a) Ram is coming to donate food and money to the orphanage owner on the occasion of his birthday.

b) Some boys break Mr. Paul's window while playing cricket in the street. Mr. Paul is upset. The boys ask for apology.

Q.5(A) Correct the following sentences . 10M

i. One should not waste his time.
ii. The boy who does best he will get a prize.
iii. I have seen him yesterday.
iv. We are playing tennis every day.
v. He is sleeping for two hours.
vi. Neither of the boys have returned.
vii. They discussed about the whole matter.
viii. I had spoken to them about my holiday.
ix. When I will arrive, I will try to call you.
x. You are very beautiful as your sister

OR

Q.5(B) Should celebrities be allowed to join politics? Pen down your views in 300 words. 10M

Q.6(A) Read the following passage and answer the questions given below. 10M

Sniffer dog Tucker uses his nose to help researchers find out why a killer whale population off the northwest coast of the United States in on decline. He searches for whales faeces floating

on the surface of the water, which are then collected for examination. He is one of the elite team of detection dogs used by scientists studying a number of species including white whales and killer whales.

Conservation canines are fast becoming indispensable tools for biologists according to Aimee Hurt, associate director and co-founder of working Dogs for conservation, based in Three Forks, Montana. Over the last few years, thought, so may new conservation dog projects have sprung up that hurt can no longer keep track of them all. Her organization's dogs and their handlers are fully booked to assist field researchers into 2012.

"Dogs have such a phenomenal sense of smell", explained Sam Wasser, director of the Center for Conservation biology at the University of Washington in Seattle. He has worked with scat-detection dogs since 1999. Scientists have been using conservation canines in their research. These dogs have enabled them to non-invasively access vast amount of genetic and physiological information which is used to tackle conservation problems around the world. Such information has proved vital for determining the causes and consequences of human disturbances on wildlife as well as the actions needed to mitigate such impacts.

These dogs will happily work all day long, motivated by the expectation of a ball game as a reward for sample detection. They cannot be maintained as pets because of their high energy personalities and are often abandoned to animal shelters.

Questions

1. According to the text how many detection dogs are there like Tucker?
2. What does Tucker search for on the waters?
3. Why are these conservational dogs special?
4. What do the dogs expect as a reward to their work?
5. Why does it become difficult to maintain these dogs as pets?

OR

Q.6(B) Corruption free society. Is it possible? write in 300 words 10M

*** END***

Hall Ticket No: | | | | | | | | | | | Question Paper Code: 14ENG12T02

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B.Tech I Year I & II Semester (R14) Supplementary End Semester Examinations – JAN 2020

TECHNICAL REPORT WRITING

(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 Part-A or B only

Q.1	i.	List the types of communication networks.	1M
	ii.	Write the definition of Communication.	1M
	iii.	What is intensive reading?	1M
	iv	Specify two techniques for good comprehension skills.	1M
	v.	Specify the purpose of pie charts/diagrams in reading and interpreting graphic information.	1M
	vi	What do you mean by upward communication?	1M
	vii.	What are the primary methods of data collection?	1M
	viii.	Everything is wrong in this section.' 'All employees of this department deserve punishment'. Identify the communication barrier	1M
	ix.	Explain what is 'eye reading and visual perception' in one or two sentences.	1M
	x.	What are SQ3R reading techniques?	1M

Q.2(A) Explain the Barriers of communication. 10M

OR

Q.2(B) What do you understand by grape wine? What is its importance in an organization? 10M

Q.3(A) What are the sources and methods for collecting the data for your report? Write in detail. 10M

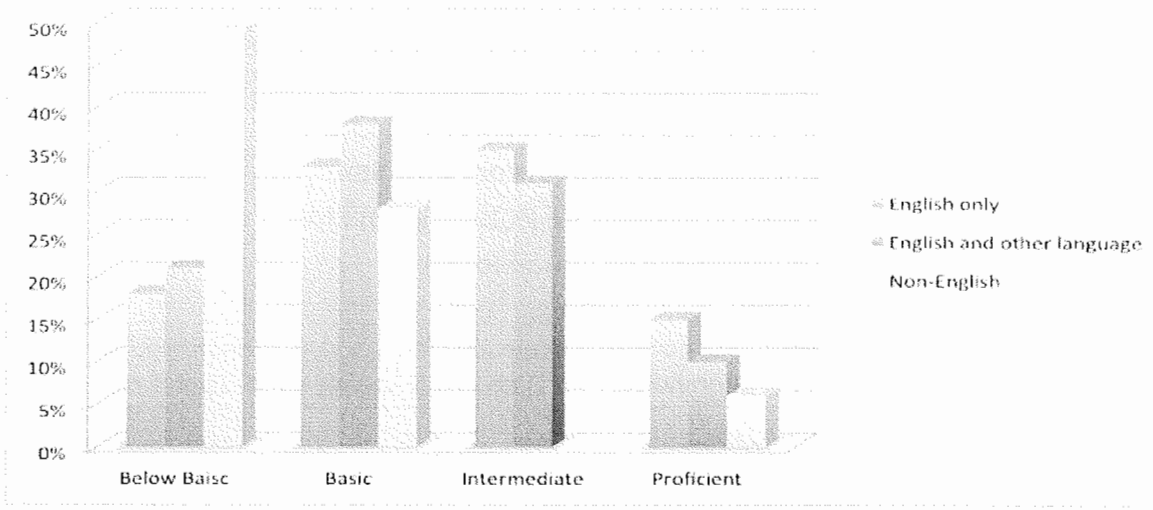
OR

Q.3(B) Write a paragraph by using the hints: 10M
Development of Ethics – morality – youth – development – quality education – character development – behavior – training – skills development – improvement of health – quality of life - learning network – basic element of life.

Q.4(A) Explain difference steps in writing business reports. 10M

OR

Q.4(B) The graph below shows illiteracy rates in each country of the United Kingdom in 2015 and 2017.Summarise the information by selecting and reporting the main features, and make comparisons where relevant. Write at least 150 words. 10M



Q.5(A) What are the characteristics of a good report? 10M

OR

Q.5(B) As the president of the society of your local area, Draft a short report on "Increasing pollution in Hyderabad". 10M

Q.6(A) As an Office Manager draft a report to your Senior Manager on the workshop conducted for two days, on " IMPORTANCE OF PERSONALITY DEVELOPMENT AND COMMUNICATION SKILLS" . 10M

OR

Q.6(B) What traits of a person's personality are revealed through the way he or she uses time in oral communication situations? 10M

*** END***

Hall Ticket No: | | | | | | | | | | | Question Paper Code: 14PHY12T01

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-Autonomous)

B.Tech I Year I & II Semester (R14) Supplementary End Semester Examinations – JAN 2020

ENGINEERING PHYSICS

(Common to All Branches)

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

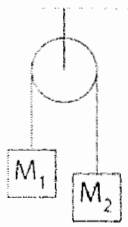
Q.1	i.	Find a unit vector along the direction of the vector ***A*** (2, -3, 4).	1M
	ii.	What are the applications of friction?	1M
	iii.	Find the momentum of a tennis ball of mass 80.0 gm served with velocity 50.0 m/s?	1M
	iv	State work energy theorem?	1M
	v.	A bob is suspended with a mass less string of length 245 cm. Find its time period?	1M
	vi	What is the law conservation of angular momentum?	1M
	vii.	What are the characteristics of simple harmonic motion?	1M
	viii.	What are beats?	1M
	ix.	What is path difference equivalent to a phase difference of $\pi/2$?	1M
	x.	What is the grating element?	1M

Q.2(A) i) Write a short note on scalar and vector product? 5M

ii) Vectors ***C*** and ***D*** have magnitudes 3 units and 4 units respectively. What is the angle between the directions of ***C*** and ***D***, if ***C·D*** equals to ***a***) Zero, ***b***) 12 units, and ***c***) -12 units. 5M

OR

Q.2(B) i) The Atwood's machine shown in the drawing has a pulley of negligible mass. Find the tension in the rope and the acceleration of *M*. 5M



ii) Two blocks are in contact on a horizontal table. A horizontal force is applied to one of the blocks, as shown in the drawing. If m_1 = 4 kg, m_2 = 2 kg, and F = 6 N, find the force of contact between the two blocks. 5M

Q.3(A)	i) A rod of length L has a non-uniform density. The mass per unit length of the rod, λ, varies as $\lambda = \lambda_0(x^2/L^2)$, where λ_0 is a constant and x is the distance from the one end of the rod. Find the center of mass. ii) Derive the fundamental rocket equation?	5M 5M
	OR	
Q.3(B)	Derive the rocket equation and show that the final velocity is independent of how the mass is released when it moves in a free space.	10M
Q.4(A)	State and prove parallel axis theorem in moment of inertia.	10M
	OR	
Q.4(B)	Show that energy of a simple harmonic oscillator is a constant and is proportional to the square of the amplitude?	10M
Q.5(A)	Construct the Lissajous figures for the motion described by $x = 5\cos(3\omega t)$ and $y = 5\cos(3\omega t + \frac{\pi}{2})$	10M
	OR	
Q.5(B)	i) Deduce the differential equation of propagation of one dimensional wave? ii) A wave of frequency 20 sec^{-1} has a velocity of 80 m/sec. How far apart are two points whose displacements are 30^0 apart in phase?	5M 5M
Q.6(A)	Explain Newton's ring experiment to find the expression of radius of curvature of plano convex lens with necessary theory.	10M
	OR	
Q.6(B)	Describe Fraunhofer diffraction due to a single slit and deduce the position of maxima and minima.	10M

*** END***

Hall Ticket No: | | | | | | | | | | | Question Paper Code: 14MAT12T02

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B.Tech I Year I & II Semester (R14) Supplementary End Semester Examinations – JAN 2020

LINEAR ALGEBRA & COMPLEX ANALYSIS

(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 Part-A or B only

Q.1	i.	Explain the conditions for consistent and in consistent of the given non homogeneous system	1M
	ii.	Test whether the following vectors are linearly dependent or independent (1,2,2),(2,1,-2),(2,-2,1).	1M
	iii.	Find the eigen values of the matrix $\begin{bmatrix} 2 & 2 & 1 \\ 1 & 3 & 1 \\ 1 & 2 & 1 \end{bmatrix}$	1M
	iv	Write the standard bases for P_3 , R^3 and M_{22}.	1M
	v.	Define analytic function	1M
	vi	Write real and imaginary parts of logz	1M
	vii.	Evaluate $\int_0^{1+i} (x^2 - iy)\,dz$ along the paths y=x	1M
	viii.	Find all solutions of exp(2z-1) = 1	1M
	ix.	State the Laurent's series theorem.	1M
	x.	Define removable singularity.	1M

Q.2(A) Use Gauss-Jordan Method, balance the chemical equation 10M

$$aAgNO_3 + bH_2O \rightarrow cAg + dO_2 + eHNO_3$$

OR

Q.2(B) i) For the given ordered bases B and C, find the transition matrix from B to C. where 5M
B = {[7,3,0,0],[1,2,0,-1],[1,-1,0,1]} and C = {[22,7,0,2], [12,4,0,1],[33,12,0,2]}

ii) Find whether the following subset is linearly independent (or) not 5M

$$\left\{\begin{bmatrix} 1 & 4 \\ 2 & 0 \end{bmatrix}, \begin{bmatrix} 0 & 2 \\ 1 & 0 \end{bmatrix}, \begin{bmatrix} -3 & 1 \\ -1 & 0 \end{bmatrix}, \begin{bmatrix} 5 & -2 \\ 0 & -3 \end{bmatrix}\right\}$$

Q.3(A) Find eigenvalues and eigenvectors for the matrix $\begin{bmatrix} 1 & 0 & 1 \\ 0 & 2 & -3 \\ 0 & 0 & -5 \end{bmatrix}$ 10M

OR

Q.3(B) Let $L: R^3 \rightarrow R^3$ given by $L\left(\begin{bmatrix} x_1 \\ x_2 \\ x_3 \end{bmatrix}\right) = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 0 & 0 \\ 1 & -1 & 1 \end{bmatrix}\begin{bmatrix} x_1 \\ x_2 \\ x_3 \end{bmatrix}$. Find a basis for k*er*(L) and a basis for *Range*(L). Verify that dim(*ker*(L)) + dim(*range*(L)) = dim(R^3) 10M

Q.4(A) Prove that the function f(z) defined by $f(z)=\begin{cases}\frac{x^3(1+i)-y^3(1-i)}{x^2+y^2}, z\neq 0\\ 0\ , z=0\end{cases}$ is continuous and the C-R equations are satisfied at that origin, yet $f^{|}(0)$ does not exist. 10M

OR

Q.4(B) Recall the C-R equations and Verify the following functions are entire or not?

i) $f(z)=3x+y+i(3y-x)$ 5M

ii) $f(z)=e^{-y}Sinx+ie^{-y}Cosx$ 5M

Q.5(A) Find all zeros of the equation (a) tanhz = -2 (b) sinz 10M

OR

Q.5(B) State Cauchy integral formula and Evaluate $\oint_c f(z)dz$,Where $f(z)=y-x-3x^2$ and C consists of the line segments $z=0$ *to* $z=i$ *and the other* $z=i$ *to* $z=1+i$ 10M

Q.6(A) Find the Laurent's series expansion of the function $f(z)=\frac{z^2-6z-1}{(z-1)(z-3)(z+2)}$ in the region $3<|z+2|<5$ 10M

OR

Q.6(B) Evaluate $\oint_c \frac{5z-2}{z(z-1)}dz$ where c is the circle |z|=2 using Residue theorem. 10M

*** END***

Hall Ticket No: | | | | | | | | | | | Question Paper Code: 14CHE11T01

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B.Tech I Year I & II Semester (R14) Supplementary End Semester Examinations – JAN 2020

ENGINEERING CHEMISTRY

(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 Part-A or B only

Q.1	i.	List the salts which cause hardness to the water.	1M
	ii.	Write the chemical structure of EDTA.	1M
	iii.	Write the limitations to the First Law of Thermodynamics.	1M
	iv	Differentiate closed system with open system.	1M
	v.	Write any two applications of 'Thin Layer Chromatography.'	1M
	vi	List the monomers for Bakelite.	1M
	vii.	Write any two gaseous molecules which causes corrosion.	1M
	viii.	What is primary battery?	1M
	ix.	What is the role of gypsum in Portland cement?	1M
	x.	Give two examples for artificial abrasives.	1M
Q.2(A)		Describe the ion exchange process for the softening of water.	10M
		OR	
Q.2(B)		How will you estimate the alkalinity of water sample? Explain in detail.	10M
Q.3(A)		Find out the expression for work done when an ideal gas expands isothermally.	10M
		OR	
Q.3(B)		Derive Rate law expression for the first order reaction and explain half-life period of the same.	10M
Q.4(A)		Explain in detail the principle and applications of FTIR Spectroscopy.	10M
		OR	
Q.4(B)		i. Write the difference between thermoplastic and thermosetting polymers.	4M
		ii. Write the preparation method, properties and applications of Nylon 6, 6.	6M
Q.5(A)		Explain functioning and applications of Lead - Acid battery?	10M
		OR	
Q.5(B)		Explain the various types of corrosion and its prevention methods.	10M
Q.6(A)		Give the detailed notes for manufacturing of Portland cement.	10M
		OR	
Q.6(B)		What are nanoparticles? Explain sol gel method for synthesizing the nanomaterials.	10M

*** END***

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

Question Paper Code: 14MAT11T01

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B.Tech I Year I & II Semester (R14) Supplementary End Semester Examinations – JAN 2020

ADVANCED CALCULUS

(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 Part-A or B only

Q.1	i.	When the Polar curve is symmetric about initial line?	1M
	ii.	Write polar form of the equation $x^2+(y-1)^2=2$.	1M
	iii.	Find the $\frac{\partial f}{\partial x}$ if $f(x,y)=x^3+y^3$	1M
	iv	Define the saddle point.	1M
	v.	Evaluate $\int_0^2\int_0^x y\,dy\,dx$	1M
	vi	What is the spherical polar co-ordinate system?	1M
	vii.	State the Stoke's theorem.	1M
	viii.	Find the gradient of $f(x,y)=x^2+y^2$.	1M
	ix.	When we say that the sequence$\{s_n\}$ is convergent?	1M
	x.	State Leibnitz's test.	1M

Q.2(A) Find the Binormal and Torsion of the curve $r(t)=3\sin t\,i+3\cos t\,j+4t\,k$ 10M

OR

Q.2(B) Find the area of the region enclosed by the cardioid $r=a(1+Cos\theta)$ 10M

Q.3(A) Find the directional derivative of $f(x,y,z)=xy^2+yz^3$ at the point (2,-1,1)in the direction of the vector i + 2j + 2k . 10M

OR

Q.3(B) Examine $\frac{\partial w}{\partial r}$ *and* $\frac{\partial w}{\partial s}$ in terms of r *and* s if $w=x^2+y^2,\ x=r-s,\ y=r+s$. 10M

Q.4(A) Find the volume of the ice cream cone D cut from the solid sphere $\rho\le 1$ by the cone $\phi=\frac{\pi}{3}$. 10M

OR

Q.4(B) Find the area of the region R enclosed by the parabola $y=x^2$ and the line $y=x+2$. 10M

Q.5(A) Evaluate the line integral $\oint_c -ydx+zdy+2xdz$, where C is the helix 10M

$r(t)=Cost\,\bar{i}+S\text{int}\,\bar{j}+t\bar{k}$, $0\le t\le 2\pi$.

OR

Q.5(B) Use divergence theorem to evaluate outward flux of $F = xy\,i + yz\,j + zx\,k$ through the surface of the cube cut from the first octant by the planes $x = 1, y = 1, z = 1$ 10M

Q.6(A) Examine the convergence of the series $\sum_{n=1}^{\infty} \frac{2^n}{n^3}$ 10M

OR

Q.6(B) Test the convergence of the power series $\sum_{n=1}^{\infty} (-1)^n \frac{x^n}{n}$ 10M

*** END***

Hall Ticket No: | | | | | | | | | | | Question Paper Code: 14CSU12T01

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B.Tech I Year I & II Semester (R14) Supplementary End Semester Examinations – JAN 2020

COMPUTER PROGRAMMING

(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 Part-A or B only

Q.1	i.	List various data types?	1M
	ii.	Write the syntax for function prototype?	1M
	iii.	Define Structure?	1M
	iv	Difference between C and C++?	1M
	v.	What are various types of Data Structures?	1M
	vi	List various conditional statements?	1M
	vii.	Explain recursive function?	1M
	viii.	What are various file opening modes?	1M
	ix.	Give various stack operations?	1M
	x.	Give various queue operations?	1M

Q.2(A)	Write a program to find whether the given number is Palindrome or not?	10M
	OR	
Q.2(B)	List and explain various decision making statements?	10M
Q.3(A)	Perform Bubble sort with following example? 22,13,5,23,100,78,98,15,66	10M
	OR	
Q.3(B)	Write a program to perform Addition of two matrices?	10M
Q.4(A)	List and write syntax of various String Handling functions?	10M
	OR	
Q.4(B)	Write a program to take input of student details and print the same using structure?	10M
Q.5(A)	What is inheritance? Explain various types of inheritances?	10M
	OR	
Q.5(B)	What is a constructor? Explain various types in it?	10M
Q.6(A)	Explain SLL Insertion operation in detail?	10M
	OR	
Q.6(B)	Write a program to perform stack using arrays?	10M

*** END***

Hall Ticket No: | | | | | | | | | | | Question Paper Code: 14EEE12T01

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B.Tech I Year I & II Semester (R14) Supplementary End Semester Examinations – JAN 2020

BASIC ELECTRICAL & ELECTRONICS ENGINEERING

(Common to All)

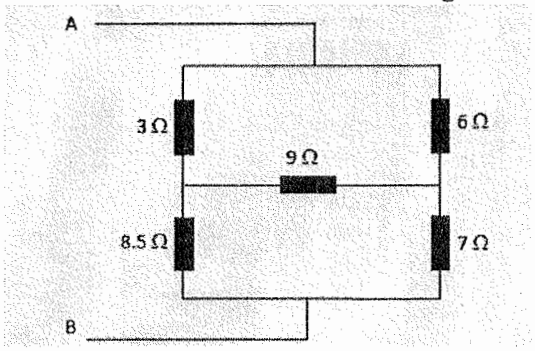
Time: 3Hrs **Max Marks: 60**

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 Part-A or B only

Q.1	i.	State Kirch off voltage law.	1M
	ii.	Write the Formula of Current divider when two resistors are connected in parallel?	1M
	iii.	What is power factor?	1M
	iv	If the three resistors are connected In parallel, the resistances are 10Ω,10Ω & 30Ω . Find the Current when the applied voltage is 50V?	1M
	v.	Define Electric flux?	1M
	vi	Write down Emf Equation of Transformer?	1M
	vii.	What is the function of commutator?	1M
	viii.	Write down Emf Equation of DC Generators?	1M
	ix.	Define Ripple Factor?	1M
	x.	Define cut in voltage of PN junction diode?	1M

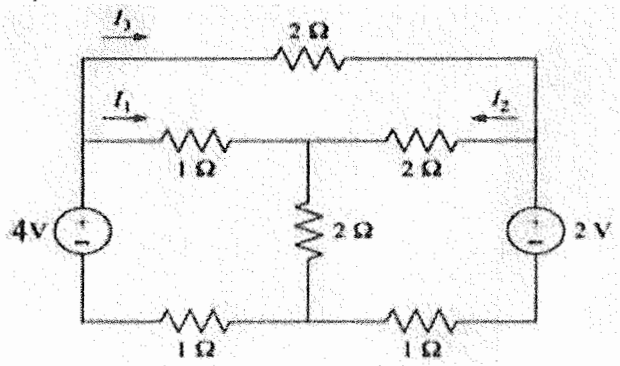
Q.2(A) i. State the Kirchhoff's voltage law and current law and explain with an example. 5 M

ii. Find the total resistance between A&B terminals for the given network. 5 M



OR

Q.2(B) Apply the nodal analysis for the network shown. 10M



Q.3(A)	i. Define form factor and peak factor. ii. An alternating current is given by i = 707 sin (377t). Calculate average value, r.m.s value, peak factor and form factor.	5 M 5 M
	OR	
Q.3(B)	i. Write the advantages of three phase AC systems. ii. Derive relation between line and phase voltages and currents in a BALANCED star connection and expression for real power.	4M 6M
Q.4(A)	Draw and explain the B-H Curve characteristics of a Ferromagnetic material in detail.	10M
	OR	
Q.4(B)	Draw the equivalent circuit of transformer with respect to a) Primary side b) Secondary side	10M
Q.5(A)	Explain in details about the speed control of DC motors.	10M
	OR	
Q.5(B)	i. Explain the Working principle of Three Phase Induction motor. ii. A 4-pole lap-wound DC shunt generator has a useful flux per pole of 0.07wb. The armature winding consists of 220turn's each of 0.004 ohm resistance. Calculate the terminal voltage when running at 900 rpm, if the armature current is 50A.	6 M 4 M
Q.6(A)	Explain the principle of operation and characteristics of P-N junction diode	10M
	OR	
Q.6(B)	Explain the operation of common emitter configuration in BJT.	10M

*** END***

Hall Ticket No: | | | | | | | | | | | Question Paper Code: 14CHE11T02

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B.Tech I Year I & II Semester (R14) Supplementary End Semester Examinations – Jan 2020

ENVIRONMENTAL 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 Part-A or B only

Q.1	i.	What is biodiversity?	1M
	ii.	Explain the concept of food chain?	1M
	iii.	List various types of pollution?	1M
	iv	Classify energy resources?	1M
	v.	What are the reasons for solid waste?	1M
	vi	Describe desert ecosystem?	1M
	vii.	Explain ozone layer depletion?	1M
	viii.	Write about world food problems?	1M
	ix.	Explain about Global Warming?	1M
	x.	Define Deforestation?	1M

Q.2(A)	Describe various renewable sources of energy	10M
	OR	
Q.2(B)	What are the various effects of Modern Agriculture?	10M
Q.3(A)	What are the structure and function of ecosystem?	10M
	OR	
Q.3(B)	Briefly explain the manner in which ecosystems are destroyed by human activities	10M
Q.4(A)	What is 'in situ' and 'ex-situ' conservation of biodiversity? Explain briefly about each.	10M
	OR	
Q.4(B)	What are the Hotspot and threats to bio-diversity? Explain?	10M
Q.5(A)	Write about classification and effects of urban and industrial solid waste?	10M
	OR	
Q.5(B)	Describe the sources, effects and methods of control of the following: (a) Water pollution (b) Noise Pollution.	10M
Q.6(A)	Write short notes on the following: (a) Climatic changes around the world (b) Heat Islands	10M
	OR	
Q.6(B)	Explain about Urban problems related to energy.	10M

*** END***

Set - 1

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

Question Paper Code: 14ME11T01

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B.Tech I Year I & II Semester (R14) Supplementary End Semester Examinations –JAN 2020

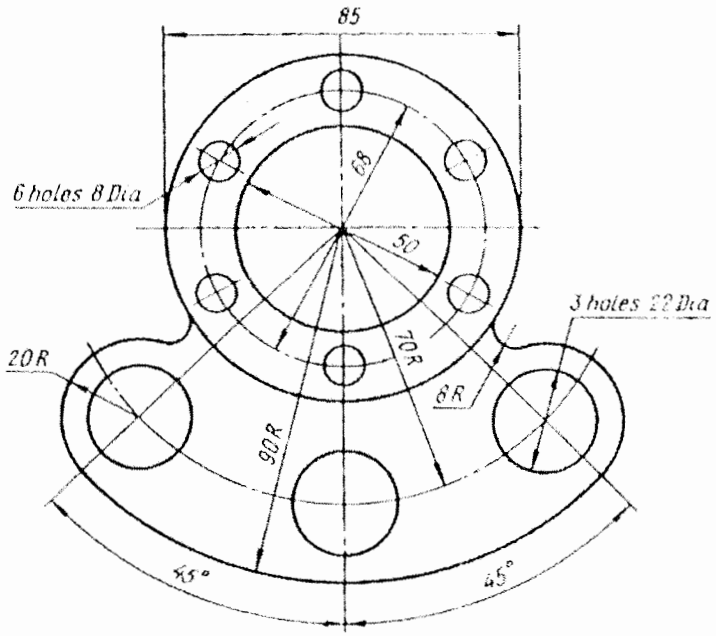
ENGINEERING GRAPHICS

(Common to All)

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

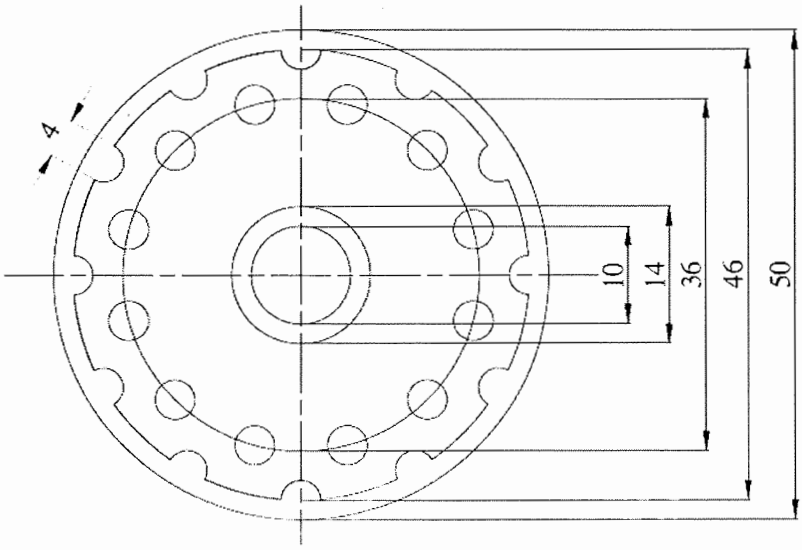
All parts of the question must be answered in one place only.
In Q.no 1 to 5 answer either Part-A or B only

Q.1(A) Draw the below figure using Auto CAD commands and dimension it. 12M

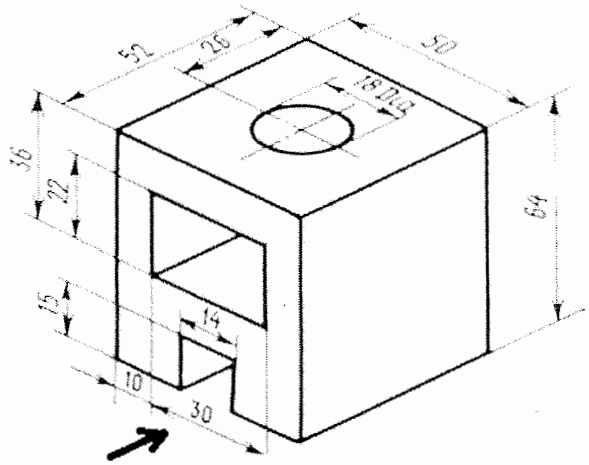


OR

Q.1(B) Draw the below figure using Auto CAD commands and dimension it. 12M



Q.2(A)	Two points P and Q are in the H.P. The point P is 30mm in front of V.P and Q is behind the V.P. The distance between their projectors is 80mm and line joining their top views makes an angle of 40º with the xy line. Find the distance of the point Q from the V.P.	12M
	OR	
Q.2(B)	Draw the projections of a 100mm long line in the following positions i. Line perpendicular to HP and Parallel to VP. One end of the line is 25mm above HP. ii. Line Perpendicular to VP and parallel to HP. One end of the line is 40mm infront of VP.	12M
Q.3(A)	Draw the projections of a circular plate of 50mm diameter resting in the H.P and a point A on the circumference. Its plane is inclined at 30^0 to the HP and the top view of the diameter AB making an angle of 45^0 with the VP.	12M
	OR	
Q.3(B)	A pentagonal pyramid of base side 30mm and axis 60mm has an edge of base parallel to H.P. Its axis is parallel to V.P and inclined at 45^0 to H.P. Draw its projections when the apex lies in the H.P.	12M
Q.4(A)	A pentagonal pyramid of base side 40 mm and axis length 90mm is resting on H.P on its base with one of its base side parallel to VP. It is cut by a plane inclined at 30° to H.P and perpendicular to VP and is bisecting the axis. Draw its front view and sectional top view.	12M
	OR	
Q.4(B)	A Hexagonal prism of base side 30mm and height 60mm is resting on its base on H.P with one of its rectangular face parallel to VP. Draw the development of the lateral surface of the prism.	12M
Q.5(A)	Draw the front, top and the right side view for the figure given	12M



OR

Q.5(B)	A cylinder of base diameter 50 mm and axis 75 mm long is standing on its base on the HP. It is completely penetrated by a horizontal cylinder of 45 mm diameter and axis 80 mm long, such that their axes intersect at right angles and at 40 mm above the base. Draw the curves of intersection of the solids at their interfaces.	12M

*** END***

Set - 2

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

Question Paper Code: 14ME11T01

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B.Tech I Year I & II Semester (R14) Supplementary End Semester Examinations –JAN 2020

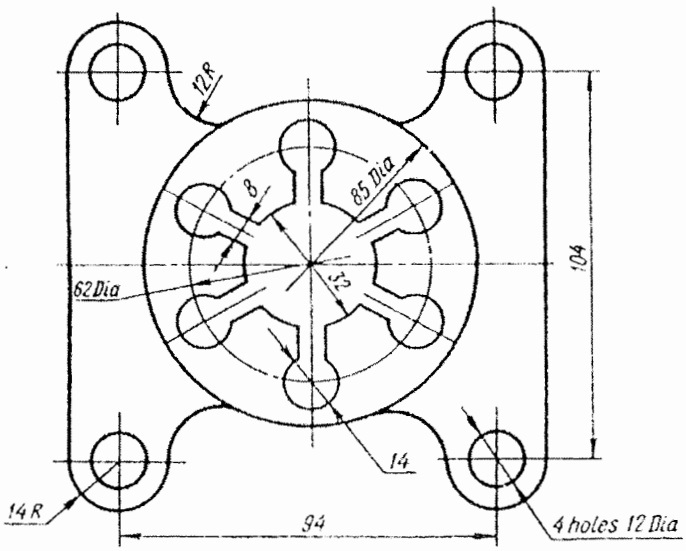
ENGINEERING GRAPHICS

(Common to All)

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

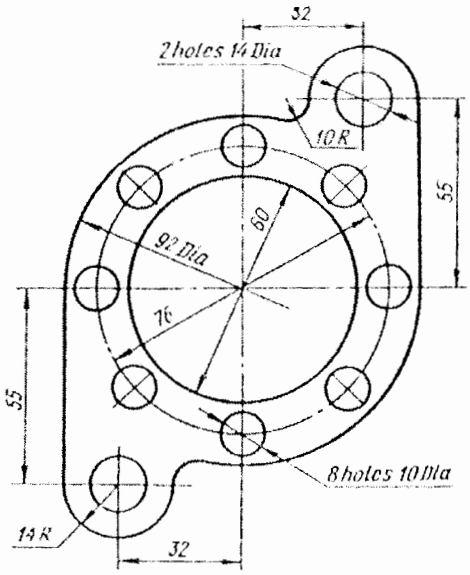
All parts of the question must be answered in one place only.
In Q.no 1 to 5 answer either Part-A or B only

Q.1(A) Draw the below figure using Auto CAD commands and dimension it. 12M

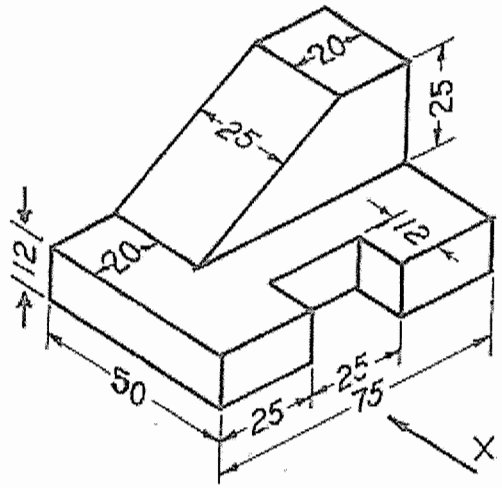


OR

Q.1(B) Draw the below figure using Auto CAD commands and dimension it. 12M



Q.2(A)	Draw the projections of the following points, keeping the distance between the projectors as 25mm on the same reference lines. Point A – 20mm above HP and 30mm in front of VP Point B – 20mm above HP and 30mm behind VP Point C – 20mm below HP and 30mm behind VP Point D – 20mm below HP and 30mm in front of VP	12M
	OR	
Q.2(B)	A line AB 90 mm long is inclined at 45^0 to H.P and 30^0 to V.P. The point A is 20mm above H.P and 30mm infront of V.P. Draw its Projections and find the apparent inclinations.	12M
Q.3(A)	A Hexagonal Pyramid of Base side 30mm and axis 60mm is lying on a slant edge on the H.P with the axis parallel to V.P. Draw its projections.	12M
	OR	
Q.3(B)	An Equilateral triangular plane ABC of side 40mm has its plane parallel to V.P and 20 away from it. Draw the projections of the plane when one of its sides is i. Perpendicular to H.P ii. Parallel to H.P iii. Inclined at 45^0 to H.P	12M
Q.4(A)	A cone diameter of base 50mm and axis 60mm long is resting on its base on HP. A section plane perpendicular to VP and inclined at 45° to HP cuts the axis at a height of 40mm from the base. Draw the sectional Top view and front view.	12M
	OR	
Q.4(B)	A cylinder of base 50mm and axis 60mm is resting on ground with its axis vertical. It is cut by a section plane perpendicular to V.P and inclined at 45^0 to H.P passing through the top of the generator and cuts all other generators. Draw its development of its lateral surface.	12M
Q.5(A)	Draw the elevation, plan and left and right side views for the figure shown	12M



OR

Q.5(B)	A Vertical square prism base 50mm side is completely penetrated by a horizontal square prism, base 35mm side, so that their axes intersect. The axis of the horizontal prism is parallel to the V.P., while the faces of the two prisms are equally inclined to the V.P. Draw the projections of the solids, showing lines of intersection. (Assume suitable lengths for the prisms).	12M

*** END***