R18

Code No: R18A0012

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

I B.Tech I Semester Regular/Supplementary Examinations, December 2019

Applied Physics

(EEE, ECE, CSE & IT)

Roll No										

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

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

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SECTION-I

1	a)	What are Matter waves? Mention any four properties of Matter waves.	**[6M]**
	b)	Describe Davison-Germer experiment in detail to support the Debroglie's idea of matter waves.	**[8M]**
		OR	
2	a)	Construct Schrodinger's time independent wave equation for free particle in three dimensions.	**[10M]**
	b)	State and explain Heisenberg's uncertainty principle in detail.	**[4M]**

SECTION-II

3		Explain in detail about the behaviour of an electron moving in a field of periodic potential using Kronig – Penny model.	**[14M]**
		OR	
4	a)	What are the assumptions of classical free electron theory? Mention any two drawbacks.	**[8M]**
	a)	Distinguish Conductors, Insulators and Semiconductors on the basis of Band theory of solids.	**[6M]**

SECTION-III

5	a)	Construct an expression for concentration of holes in P-type semiconductor.	**[10M]**
	b)	Distinguish between Intrinsic and Extrinsic semiconductors with suitable examples.	**[4M]**
		OR	
6	a)	State and explain Hall Effect in detail. Derive the expression for Hall Coefficient. Write the applications of Hall Coefficient.	**[10M]**
	b)	The Hall coefficient of a specimen is $7.35X10^{-5}$ M^3/cm. Then find the nature of semiconductor and Concentration of charge carriers.	**[4M]**

SECTION-IV

7	a)	What is meant by Polarization in Dielectrics? Explain the various types of Polarizations in Dielectric materials.	**[4M]**
	b)	Derive an expression for Ionic Polarizability.	**10M]**
		OR	
8	a)	What is Hysteresis? Draw the Hysteresis curve and explain the Hysteresis phenomenon in Ferromagnetic materials based on domain theory of ferromagnetism.	**[8M]**

b) Distinguish soft and hard magnetic materials with any four properties or applications. **[6M]**

SECTION-V

9 a) Explain the principle, construction and working of Ruby Laser with energy level diagram. . **[10M]**

b) Compare and contrast the processes of spontaneous and stimulated emission of radiation. **[4M]**

OR

10 a) Derive the expression for acceptance and numerical aperture of an optical fiber **[10M]**

b) Calculate numerical aperture of an optical fiber of refractieve index of n_1=1.50 and n_2=1.45 in air medium **[4M]**

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R18

Code No: R18A0261

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

I B.Tech I Semester Regular/Supplementary Examinations, December 2019

Basic Electrical and Electronics Engineering

(ME & AE)

Roll No										

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

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

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SECTION-I

1 (a)	Explain Source transformation with the help of neat diagrams	[7M]
(b)	Define the following terms i) circuit and network iii) current and voltage iii) active and passive elements.	[7M]
	OR	
2 (a)	Define and give symbols of the following: i) Dependent sources ii) Independent Sources iii) Practical Sources iv) Ideal Sources	[7M]
(b)	State and explain Kirchhoff's' laws with an example?	[7M]

SECTION-II

3 (a)	Apply superposition theorem to the circuit shown in Fig. 1. to find the current flowing through 150 Ω resistor.	[7M]
(b)	Find R_{AB} for the circuit shown in Fig. 2.	[7M]

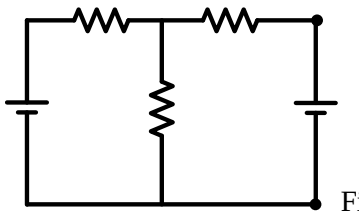

Fig. 1

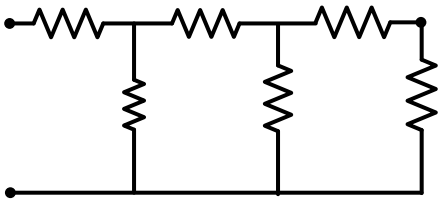

Fig. 2

OR

4 (a)	State and explain superposition theorem with an example.	[7M]
(b)	Explain delta-star transformation with derivation of necessary expressions.	[7M]

SECTION-III

5 (a)	Explain the working and operating principle of single phase transformer?	[7M]
(b)	Derive the expression for the emf induced in a DC Generator.	[7M]
	OR	
6 (a)	What is meant by back EMF? Give the significance of back emf in a DC motor.	[7M]
(b)	Calculate the generated emf of a 4-pole, wave-wound armature having 38 slots with 18 conductors per slot when drive at 1000rpm. The flux per pole is 0.018wb.	[7M]

SECTION-IV

7 (a)	Explain the working of P-N junction diode with neat diagrams. Mention the applications of diode.	[7M]
(b)	What is a rectifier? Explain the operation of half wave rectifier with a neat circuit diagram.	[7M]

OR

8 (a)	With the help of V-I characteristics describe the working principle of Zener diode. What is its symbol?	[7M]
(b)	Explain about the principle of operation of a full wave rectifier with the help of circuit diagram?	[7M]

SECTION-V

9 (a)	Explain the input and output characteristics of transistors in CB configuration.	[7M]
(b)	Compare the performance of a transistor in three different configurations.	[7M]

OR

10 (a)	Draw the circuit and explain the characteristics of CE configuration.	[7M]
(b)	Draw the circuit symbol for a PNP and NPN transistors and explain their operation.	[7M]

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R18

Code No: R18A0013

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

I B.Tech I Semester Regular/Supplementary Examinations, December 2019

Engineering Chemistry

(ME & AE)

Roll No										

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

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

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SECTION-I

1 a. Explain the construction and working of a Daniel cell with a neat diagram. **[5M]**

b. Explain the construction and functioning of Hydrogen-oxygen fuel cell. Describe its applications. **[4M]**

c. Explain the electrochemical theory of corrosion of metals with a special reference to mechanism of rusting of iron by evolution of hydrogen . **[5M]**

OR

2 a. Describe the method of Electroless plating of Nickel. Mention its advantages. **[5M]**

b. Explain protection of buried pipelines and ship-hull from corrosion by sacrificial anodic method with a diagram. **[5M]**

c. Calculate the concentration of $CuSO_4$ in the copper electrode having a potential of 0.31984V at 25°C. Given that $E^o_{Cu^{2+}|Cu} = 0.34V$. **[4M]**

SECTION-II

3 a. Draw molecular orbital energy level diagram of O_2 molecule and predict its bond order and magnetic behavior. **[7M]**

b. Write postulates of molecular orbital theory. **[7M]**

OR

4 a. What are the salient features of crystal field theory? Explain the crystal field splitting of 'd' orbitals by the ligands in octahedral complexes. **[10M]**

b. Give an account of LCAO. **[4M]**

SECTION-III

5 a. Describe the different units in which the hardness of water is expressed. How are they related? **[4M]**

b. What is the principle involved in EDTA method? Explain the estimation of hardness of water by complexometric method. **[10M]**

OR

6 a. Explain the ion exchange process of softening of hard water with a neat diagram. How the exhausted resins are regenerated? **[10M]**

b. What are the specifications of potable water? **[4M]**

SECTION-IV

7 a. What are S_N1 and S_N2 reactions? Write the mechanism with suitable examples. **[10M]**

b. Explain Markownikoff's rule with example. **[4M]**

OR

8 **a.** Write the products of reduction of the following by sodium borohydride in the form of a reaction **[4M]**

i. Butanal
ii. Butanone.

b. Write the mechanism involved in the reduction of a ketone by lithium aluminium hydride. **[6M]**

c. What are the products of the oxidation of primary alcohols and secondary alcohols using $KMnO_4$ as an oxidising agent? Write the reactions and mention the reaction conditions. **[4M]**

SECTION-V

9 a. Explain the process of obtaining different fractions from petroleum by describing their composition, boiling range and uses. **[10M]**

b. What is meant by knocking in I.C. engines? What are its adverse effects? **[4M]**

OR

10 a. Explain the ultimate analysis of coal and its significance. **[10M]**

b. Define octane number. What is its significance? **[4M]**

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R18

Code No: R18A0301

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

I B.Tech I Semester Regular/Supplementary Examinations, December 2019

Engineering Graphics

(CSE)

Roll No										

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

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

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SECTION-I

1 Draw a path traced out by an end of a piece of thread when unwound to a length of 150mm from the circle of 40mm diameter. Name the curve traced. **[14M]**

OR

2 The area of a field is 50000 sq. meter. The length and breadth of the field, on the map is 10cm and 8cm respectively. Construct a diagonal scale which can read up to 1mtr and Mark the length 235mtr on the scale. What is the RF of the scale? **[14M]**

SECTION-II

3 An 80mm long line PQ has the end Q lying both in the H.P and V.P. The line is inclined at 30^0 to the H.P. and $45^0$to the V.P.Draw its projections. **[14M]**

OR

4 A 100 mm long line PQ is inclined at 45^0 to H.P. and 30^0 to the V.P. point P is 50 mm above the H.P.and 40mm infront of the V.P.Draw its projections. **[14M]**

SECTION-III

5 A regular pentagon of 30 mm sides is resting on HP on one of its sides, its surface is inclined at 45^0 to HP. Draw projections when side in HP is 30^0 inclined to VP. **[14M]**

OR

6 A pentagonal prism having a base with a 30mm side and 60mm long axis, is resting on an edge of its base in the HP and the axis is inclined at angle of 30^0 to the HP. Draw its projections. **[14M]**

SECTION-IV

7 Draw isometric projection for the following figures. **[14M]**

A) cylinder with 50mm diameter and 60 mm long axis is resting on HP

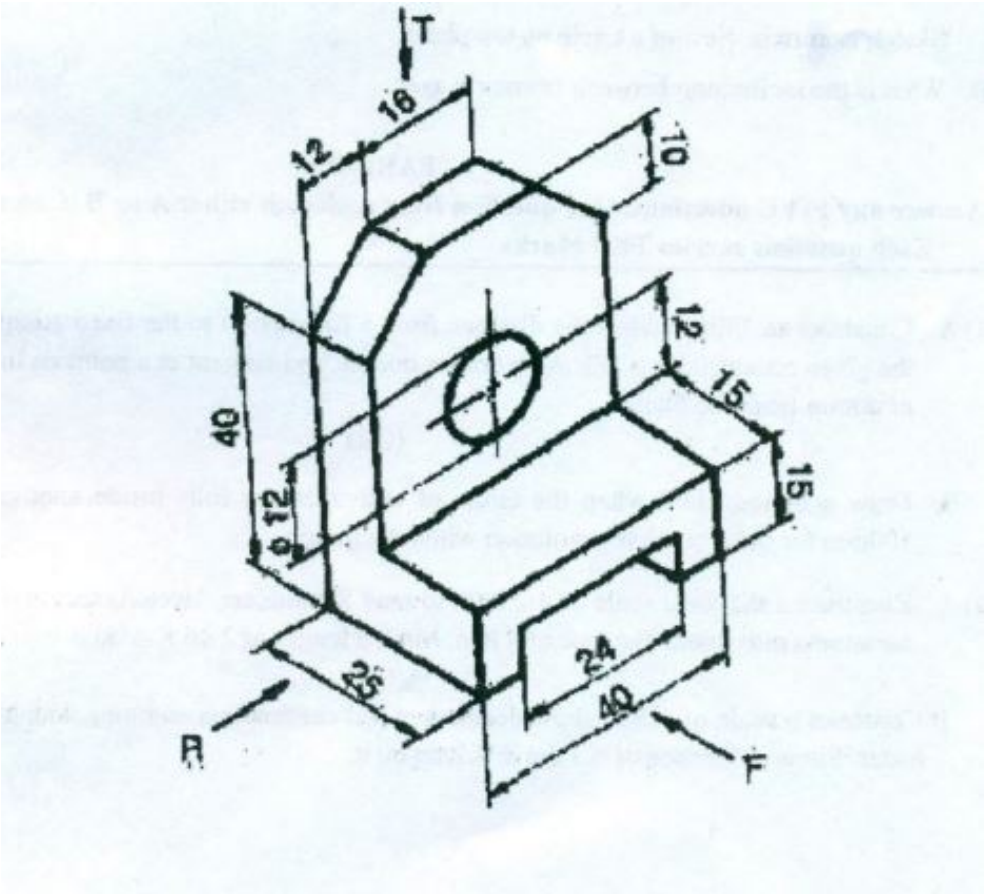
B) Hexagonal pyramid with 30mm side and 40mm long axis is resting on HP.

OR

8 A sphere of diameter 50 mm is surrounded centrally on the top of a square block of side 60mm and thickness 20mm. Draw the isometric view of the arrangement. **[14M]**

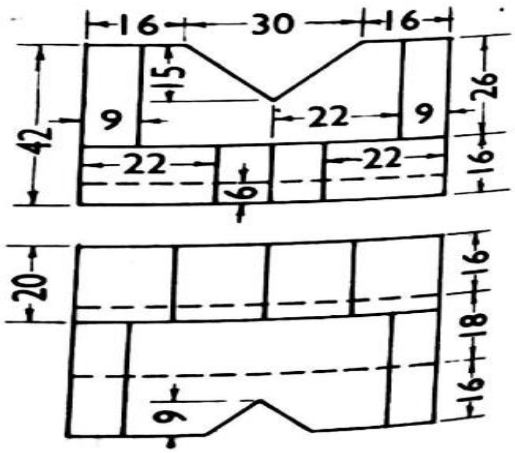
SECTION-V

9 Draw Front View, top view and side view for the part shown in figures. All dimensions are in mm. **[14M]**



OR

10 Draw the isometric view of the given orthographic projections of the object. **[14M]**



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R18

Code No: R18A0301

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

I B.Tech I Semester Regular/Supplementary Examinations, December 2019

Engineering Graphics

(ECE)

Roll No										

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

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

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SECTION - I

1. Draw a hyperbola with eccentricity 3/2 and the distance of the focus from directrix of 50mm. **[14M]**

(OR)

2. Draw a parabola if the distance of the focus from the directrix is 60mm. **[14M]**

SECTION – II

3. A line AB, 70mm long has its end A 15mm above HP and 20mm infront of VP.It is inclined at 30^0 to HP and 45^0 to VP. Draw its projections. **[14M]**

(OR)

4. Draw the projections of points in the following cases:
   (a) Point A in vertical plane 10mm above HP
   (b) Point B in Horizontal plane 10mm behind VP.
   (c) Point C in both HP and VP.
   (d) Point D in VP 10mm below 10mm HP.
   (e) Point E in HP 10mm in front of HP **[14M]**

SECTION – III

5. A regular hexagon plane of 40mm side has a corner in the HP.Its surface is inclined at 45^0 to the HP and the top view of the diagonal through the corner which is in the HP makes an angle of 60^0 with the VP. Draw its projections. **[14M]**

OR

6. A cylinder of base diameter 60mm and height 80mm is resting on HP in of its generators with its axis inclined at 50^0 to VP. Draw its Projection. **[14M]**

SECTION – IV

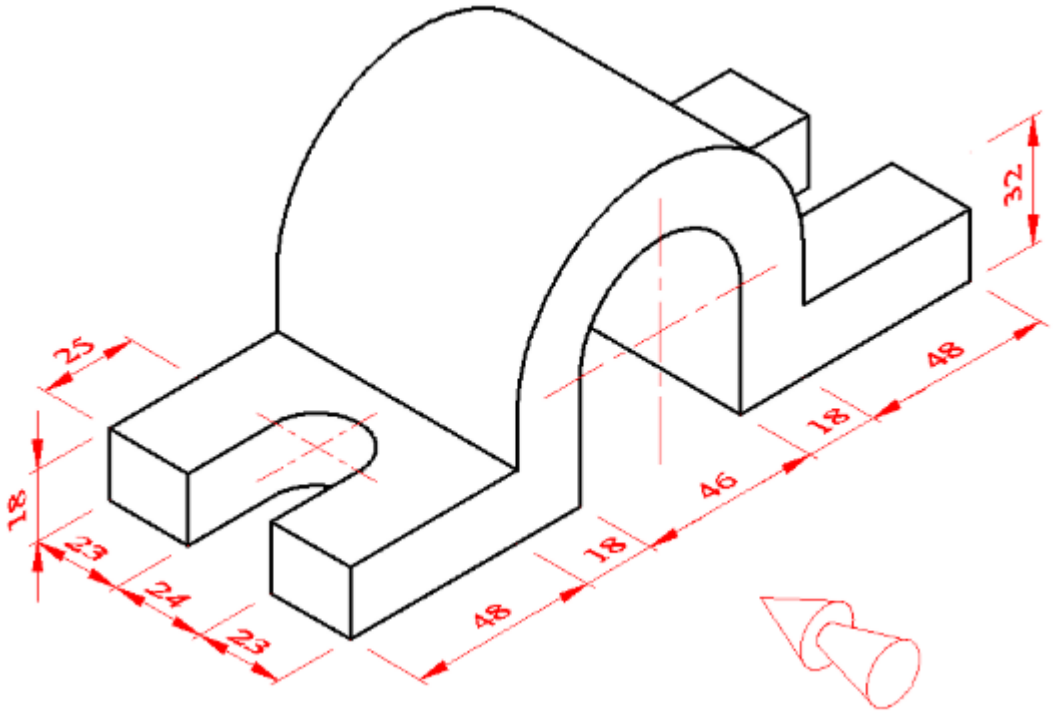
7. Draw the isometric projection of a 50mm cube resting on a 100mm cube. **[14M]**

(OR)

8. Draw the isometric view of a square prism of base 40mm sides and height 70mm when its axis is vertical and horizontal. **[14M]**

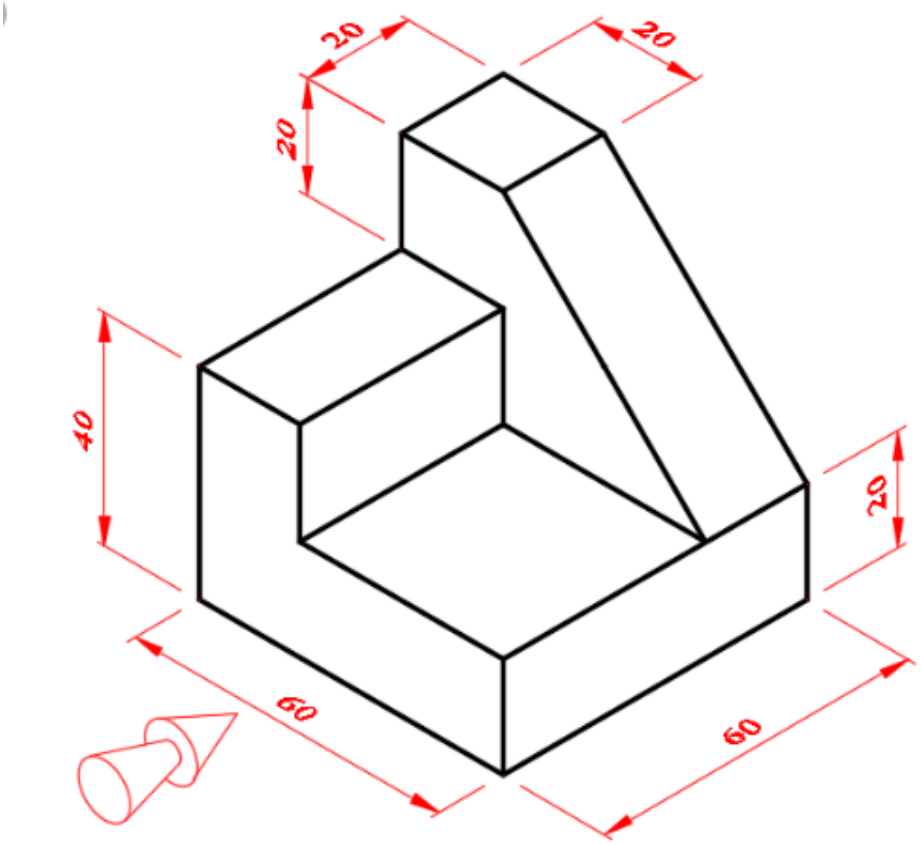
SECTION – V

9.Draw front view and Top view for the following figure: **[14M]**



(OR)

10. Draw Front view and Top view for the figure given below: **[14M]**



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R18

Code No: R18A0301

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

I B.Tech I Semester Regular/Supplementary Examinations, December 2019

Engineering Graphics

(EEE & IT)

Roll No										

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

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

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SECTION-I

1 Draw a hyperbola. Mark a point F, 50 mm from directrix. Trace the paths of a point P moving in such a way that the ratio of its distance from the point F, to its distance from focus is 3:2. Plot at least 10 points. Draw a tangent and normal to curve at a point on it, 30 mm from F. **[14M]**

OR

2 Construct

a) A regular pentagon in inscribe circle method in 70 mm diameter. **[7M]**

b) Draw hexagon with a side 30mm long using general method **[7M]**

SECTION-II

3 A line of PQ 70 mm long its one end 15 mm above HP and 20 mm in front of VP and its is 30^0 inclined to HP and 45^0 to VP. Draw its projections. **[14M]**

OR

4 (a) A point P is 20mm above the H.P. and 25mm in front of the V.P. Another point Q is 30mm behind the V.P. and 35mm below the H.P. Draw projections of P and Q keeping the distance between their projectors equal to 85mm. Draw straight lines joining their top views and front views. **[7M]**

(b) A point B 30 mm above the HP and 20 mm behind the VP. And point Q is 25 mm below the HP, 20 mm behind the VP draw the projections of points and state their positions which quadrant they lie. **[7M]**

SECTION-III

5 A regular hexagon ABCDEF of 40 mm side is the front view of a plate when its surface is inclined at 35 degrees to the V.P. Draw the projections when it' s side AB is in V.P. and inclined at 50 degrees to the H.P. **[14M]**

OR

6 A triangular prism of base side 45 mm and length of axis 75 mm has a corner in the H.P. The face opposite to that corner makes 50^0 to the H.P. while the axis of the solid makes 30^0 to the V.P. Obtain the two views of the solid. **[14M]**

SECTION-IV

7 Draw the isometric projection of a pentagonal prism side of base 30mm and height 60mm. **[14M]**

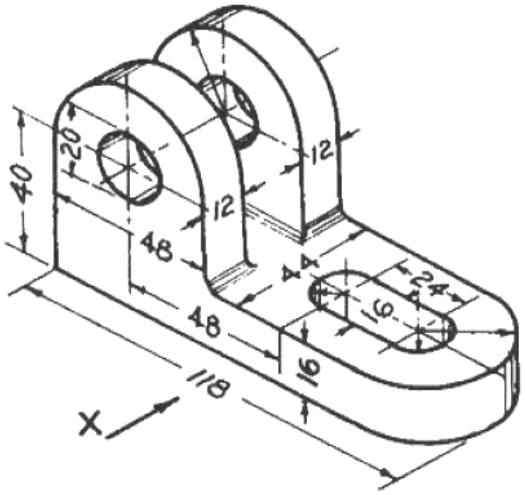
OR

8 A right regular hexagonal prism of side of base 25mm and altitude 56mm has a square hole of 20mm side at the centre. The axes of the prism and the hole **[14M]**

coincide. One of the faces of the square hole is parallel to one of the faces of the hexagon.

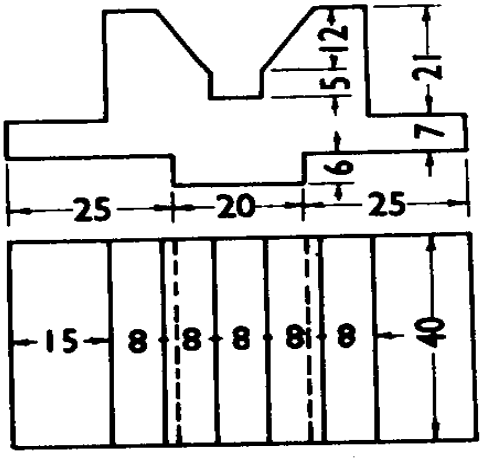
SECTION-V

9 Draw the Front, Top and side view for the following Figure **[14M]**



OR

10 Draw the isometric view of the objects whose orthographic projections are given in Figure **[14M]**



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Code No: R18A0001

R18

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

I B.Tech I Semester Regular/Supplementary Examinations, December 2019

English

(EEE, ME, ECE, CSE, IT & AE)

Roll No										

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

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

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SECTION-I

1. a) Write a detailed stanza wise summary of the poem "The Road Not Taken" along with the moral as you understand it. **[7M]**

   b) Put the word in brackets into the correct form using prefixes and/or suffixes. **[7M]**

   i. He was sitting _____ in his seat on the train. (comfort)

   ii. There was a _____ light coming from the window. (green)

   iii. He was acting in a very _____ way. (child)

   iv. This word is very difficult to spell, and even worse, it's _____. (pronounce)

   v. He's lost his book again. I don't know where he has _____ it this time. (place)

   vi. You shouldn't have done that! It was very _____ of you. (think)

   vii. He didn't pass his exam. He was _____ for the second time. (succeed)

OR

2. a) Write a paragraph narrating a funny incident using past tense. **[7M]**

   b) Complete the sentences adding suitable prefixes and/or suffixes given to the words given in brackets. **[7M]**

(bi-, multi-, -less, un- post-, -ful, em-)

   i. She has a _____ account with the mobile service provider. (paid)

   ii. Ram is _____ about his food habits. (care)

   iii. In my opinion, the procedures followed during the experiments are _____. (safe)

   iv. The magazine is issued once in two weeks. It is _____ magazine. (weekly)

   v. The measures being implemented by the government are aimed at _____ women (powering)

   vi. Raj can speak three languages. He is a _____. (linguist)

   vii. Sita is very committed. She is a _____ employee. (duty)

SECTION-II

3. a). That Abraham Lincoln is a responsible father is evident from the letter to his son's teacher. Justify the statement in the light of the guidelines given by Lincoln to the teacher. **[7M]**

   b). Identify the following verbs as transitive or intransitive and write sentences using them. **[7M]**

i. laugh ii. like iii. cry iv. clean v. advise vi. stitch vii. arrive

OR

4 a) Write an email inviting the CEO of an MNC as the chief guest for your college techfest. **[7M]**

   b) Fill in the blanks with the antonyms of the word in brackets. **[7M]**

   i. Veena _____ played the violin (occasionally)

   ii. The celebrity sportsperson prefers _____ (busy) life.

   iii. The severity of the storm _____ (subsided).

   iv. He died at the age of 60, but he didn't have a healthy lifestyle. He was _____ (rarely) drunk.

   v. It is _____ for the motorcyclists to wear helmets. (optional)

   vi. Minu is _____ towards animals. (cruel)

vii. Listen to me Rahul! If you are good and behave well, you can eat with the _____. (kids)

SECTION-III

5. a) The old man, in the essay "***War***" by L. Pirandello, says that parents should be proud of the death of a son in the war. Do you agree? Justify with reference to the present day scenario. **[7M]**

b) Fill in the blanks with correct prepositions. **[7M]**

i. Would you like to go _____ the cinema tonight?
ii. We are going _____ holiday next week.
iii. There is a bridge _____ the river.
iv. The flight from New York to Delhi was _____ Frankfurt.
v. _____ my wall, there are many picture postcards.
vi. Who is the person _____ this picture?
vii. Come _____ the sitting room, we want to watch TV

OR

6. Write the meanings of the following phrasal verbs and use them in your own sentences. **[14M]**

i. pass away ii. do without iii. call off iv. get carried away
v. made up vi. put up with vii. keep up

SECTION-IV

7.a) What are the five important lessons we can all learn fromJK Rowling in her "Harvard Address"? **[7M]**

b) Write an elaborate essay on how engineers can play a vital role in nation building. **[7M]**

OR

8 a) Rewrite the following sentences by using the misplaced modifiers at the right places. **[7M]**

i.Giving online tuitions, I nearly earned Rs. 2,0000 last summer.
ii.The office building was located by a river which was made of red brick.
iii.A fish was found in this region that had been considered extinct.
iv.The cowboy was thrown by the bull in a leather jacket.
v.Rama asked me to go for a ride on the telephone.
vi.The results will only be known after all the votes have been counted
vii.The contractors needed all kinds of artists to paint the mural badly.

b)) Fill in the blanks with the correct article: a, an or the. If no article is required, indicate that with 'X'.

i.Are you coming to _____ party next Saturday?
ii.I bought _____ new TV set yesterday.
iii.I watched _____ video you had sent me.
iv.She was wearing _____ ugly dress when she met him.
v.I am fond of reading _____ history books.
vi.Do you want to go to _____ restaurant where we first met?
vii.He thinks that _____ love is what will save us all.

SECTION-V

9. Use the following pairs of words in your sentences to bring out their difference of meaning. **[14M]**

i. cereal-serial ii. waste-waist iii. story-storey iv. desert-dessert
v. horse-hoarse vi. course-coarse vii. flour-floor

OR

10 a) Differentiate between a phrase and a clause. Give two examples for converting a clause into a phrase. **[7M]**

b) Write a memo in specified format as the supervisor of an engineering department in PWD office, instructing all the employees about changes made in lunch timings for different shifts. **[7M]**

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R18

Code No: R18A0021

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

I B.Tech I Semester Regular/Supplementary Examinations, December 2019

Mathematics-I

(EEE, ME, ECE, CSE, IT & AE)

Roll No										

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

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

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SECTION-I

1 a) Determine the values of a, b, c, if the matrix $\begin{bmatrix} 0 & 2b & c \\ a & b & -c \\ a & -b & c \end{bmatrix}$ is orthogonal. **[6M]**

b) Define rank of a matrix and find the rank of the following matrix by reducing it to normal form **[8M]**

$$\begin{bmatrix} 2 & 1 & 3 & 5 \\ 4 & 2 & 1 & 3 \\ 8 & 4 & 7 & 13 \\ 8 & 4 & -3 & -1 \end{bmatrix}$$

OR

2 If $A=\begin{bmatrix} 1 & 2 & -1 \\ 2 & 1 & -2 \\ 2 & -2 & 1 \end{bmatrix}$, then verify Cayley-Hamilton theorem. Find A^4 and A^{-1} using Cayley-Hamilton theorem. **[14M]**

SECTION-II

3 a) If $u = \frac{yz}{x},\ v = \frac{zx}{y}, w = \frac{xy}{z}, then\ \ find\ \ \frac{\partial(u,v,w)}{\partial(x,y,z)}$ **[6M]**

b) Find the maximum and minimum values of the function **[8M]**

$$f(x,y) = \sin x + \sin y + \sin(x+y), -\pi \le x, y \le \pi$$

OR

4 a) Determine whether the functions $u = x + y + z, v = xy + yz + zx,$ $w = x^2 + y^2 + z^2$ are dependent. If so, find the relation between them. **[6M]**

b) A rectangular box which is open at the top, has a capacity of 32 cubic feet. Determine the dimensions of the box such that the least material is required for the construction. **[8M]**

SECTION-III

5 a) A body kept in air with temperature 25℃ cools from 140℃ to 80℃ in 20 minutes. Find when the body cools down to 35℃. **[8M]**

b) Solve $\left(1 + e^{\frac{x}{y}}\right) dx + e^{\frac{x}{y}}\left(1 - \frac{x}{y}\right) dy = 0$ **[6M]**

OR

6 a) Solve $(D^2 + 4)y = 3x \sin x$ **[6M]**

b) Solve $(D^2 + 1)y = \tan x$ by method of variation of parameters **[8M]**

SECTION-IV

7 a) Form partial differential equation by eliminating arbitrary constants a and b from: $z = ax^3 + by^3$ **[4M]**

b) Solve $(y - z)p + (x - y)q = (z - x)$ **[5M]**

c) Solve $p^2 + q^2 = z$ **[5M]**

OR

8 a) Solve $(x^2 - yz)p + (y^2 - zx)q = z^2 - xy$ **[6M]**

b) Solve by Method of separation of variables, **[8M]**

$u_x + u = u_t$, $u(x, 0) = 4e^{-3x}$

SECTION-V

9 a) Find $L\left[\frac{e^{-3t}\sin 2t}{t}\right]$ **[6M]**

b)) Find $L\{t\, e^{-t}\, sin4t\}$ **[8M]**

OR

10 a) Using Convolution theorem, find $L^{-1}\left\{\frac{1}{(s^2+a^2)\,(s^2+b^2)}\right\}$ **[6M]**

b) Using Laplace Transform, Solve $\frac{d^2x}{dt^2} - 2\frac{dx}{dt} + x = e^t$, given that $x(0) = 2, x'(0) = -1$ **[8M]**

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Code No: R18A0501 **R18**

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY
(Autonomous Institution – UGC, Govt. of India)
I B.Tech I Semester Regular/Supplementary Examinations, December 2019
Programming for Problem Solving
(EEE, ME, ECE, CSE, IT & AE)

Roll No										

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

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

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SECTION-I

1	a.	Explain in detail with neat diagram about the computer system components.	**[7M]**
	b.	Differentiate Algorithm and Flow Chart. And also write a algorithm to find out number is odd or even?	**[7M]**
		OR	
2		What are the features of C Language and Draw and explain the structure of C Program?	**[14M]**

SECTION-II

3	a.	Explain various types of multi-way selection statements with an example.	**[7M]**
	b.	Write a C program to find all roots of a quadratic equation using if...else statement?	**[7M]**
		OR	
4	a.	Write a C program to find arithmetic operations using switch statement	**[7M]**
	b.	Explain the conditional statements in C language with syntax?	**[7M]**

SECTION-III

5	a.	Write C program to find the factorial of a given number using recursive function.	**[7M]**
	b.	Explain Call by Reference with example.	**[7M]**
		OR	
6		Write a short note on parameter passing Techniques with examples?	**[14M]**

SECTION-IV

7	a.	How to declare and initialize an array. Explain them.	**[7M]**
	b.	Write a C Program to sort the given words in a lexicographical order.	**[7M]**
		OR	
8		Write short notes on String handling functions with suitable examples	**[14M]**

SECTION-V

9	a.	Is it possible to Read and Print an array using Pointers? Justify.	**[7M]**
	b.	Write a Program to read Student Details and calculate total and average using structures.	**[7M]**
		OR	
10	**a.**	Define a structure called Cricket that will have player name, team name, and batting average of the player. Using Cricket, declare an array player with 10 elements. Write a program to read the information about all the 10 players and print a team wise list containing names of players with their batting average	**[7M]**
	b.	Briefly Discuss Union and How it is differ from Structure.	**[7M]**

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