Code : 1G512b

R13/R11

ANNAMACHARYA INSTITUTE OF TECHNOLOGY & SCIENCES :: RAJAMPET
(AUTONOMOUS)

B.Tech. I Year Regular Examinations, June 2014

Engineering Graphics

(Mechanical Engineering)

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

Answer any FIVE of the following
All questions carry equal marks (14 Marks each)

* * * * *

1. a) Construct a parabola with base 60 and length of the axis 40 by using Tangent method. Draw a tangent to the curve at a point 20 from the base. Also, locate the focus and directrix to the parabola. 6M

   b) Draw an Epi-cycloid of a circle of 40 diameter, which rolls outside on another circle of 150 diameter for one revolution clock-wise. 8M

2. A line PQ 100 mm long, is inclined at 30^0 to the H.P and at 45^0 to the V.P. Its mid-point is in the V.P and 20 mm above the H.P. Draw its projections, if its end P is in the third quadrant and Q in the first quadrant 14M

3. A square ABCD of 50 mm side has its corner A in the H.P., its diagonal AC inclined at 30^0 to the H.P. and the diagonal BD inclined at 45^0 to the V.P. and parallel to the H.P .Draw its projections. 14M

4. A pentagonal pyramid, with side of base 25 and axis 75 long, rests on an edge of the base on H.P such that, the edge is parallel to V.P. The base is tilted such that, the topmost slant edge is parallel to H.P and perpendicular to V.P. Draw the projections of the solid. 14M

5. In a semicircular plate of 120 diameter, a largest circular hole is made. The plate is folded to form a cone. Draw the two views of the cone. 14M

6. A hemi-sphere of 80 diameter, is placed centrally over a frustum of hexagonal pyramid with top face side 50 mm and bottom base side 80 mm; and 60 long such that, the hemi-sphere rests on a point on the top face of the pyramid. The bottom base is placed centrally over a cylindrical block, with base 80 mm and 20 mm thick. Draw the isometric projections of the combination of the solids 14M

7. A vertical cone with diameter of base 90 and axis 100 long, is penetrated by a horizontal cylinder of 50 diameter. The axis of the cylinder intersects the axis of the cone at a point 30 from the base. Draw the projections of the solids, showing the lines of intersection. 14M

8. Draw the perspective of a square prism of edge of base 40 and length 60, lying on a rectangular face on the ground, with a corner on P.P and the bases are inclined at 45^0 to P.P. The station point is 60 in front of P.P and 80 above G.L and lies in a central plane, which is passing through the centre of the prism. 14M

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Code : 1G511

R11

ANNAMACHARYA INSTITUTE OF TECHNOLOGY & SCIENCES :: RAJAMPET
(AUTONOMOUS)

B.Tech. I Year Supplementary Examinations June 2014

Engineering Mechanics
(Common to ME & CE)

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

Answer any FIVE Questions from the following
All questions carry equal marks (14 Marks each)
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1. a) Distinguish between coplanar non-concurrent and non-coplanar concurrent forces. 6M

   b) Three forces are concurrent at the origin as shown in Figure-1. Determine the resultant of three forces. Also determine the magnitude and direction of fourth force, which must be added to make the resultant zero

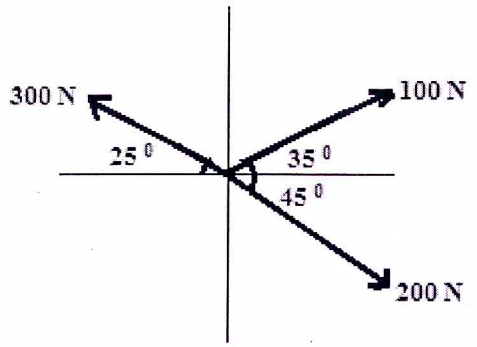

Figure-1 8M

2. Determine the reaction at the support for the beam as shown in Figure-2

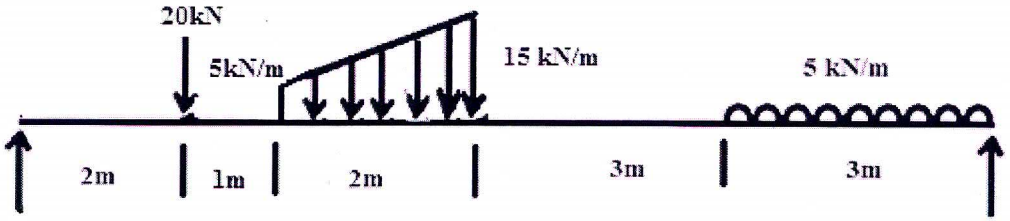

Figure-2 14M

3. a) State and explain the dry laws of friction. 6M

   b) In the Figure-3, the block A supports a weight of 4000 N and it is to be prevented from sliding down by applying a horizontal force P on the block B. If the coefficient of friction at all the surfaces of contact is 0.2, determine the smallest force P required to maintain equilibrium. Neglect the weight of the blocks.

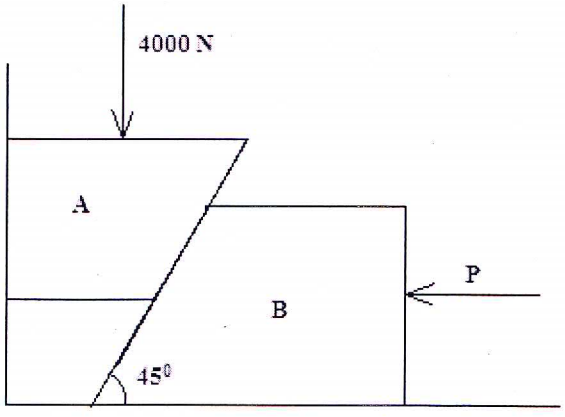

Figure-3 8M

4. a) State and explain the theorems of Pappus and Guldinus. 6M

   b) Find the centroid of the shaded area shown in Figure-4.

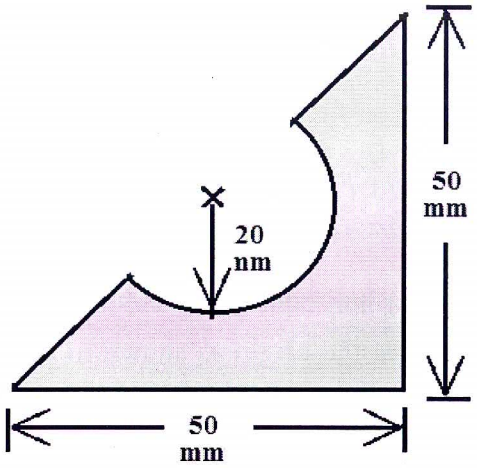

Figure-4 8M

5. a) State and explain the perpendicular axis theorem 6M

   b) Find the moment of inertia of the section shown in Figure-5 about its centroidal axis.

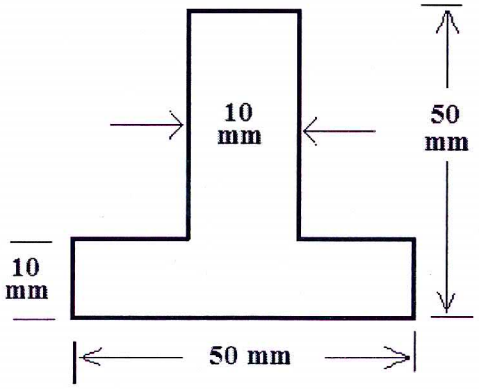

Figure-5 8M

6. a) Explain the following

   (i) Uniform motion (ii) Uniformly accelerated motion

   (iii) Non- Uniformly accelerated motion 6M

   b) A train starting from rest accelerates uniformly at the rate of α to reach a maximum speed of v. It then moves at this speed for some time and decelerates uniformly at the rate of β to come to rest. If the total distance covered is S, prove that total time taken is

$$\frac{S}{v}+\frac{v}{2}\left[\frac{1}{\alpha}+\frac{1}{\beta}\right]$$ 8M

7. a) State and explain the work-energy principle. 6M

   b) A jet of water issued from a nozzle strikes a smooth inclined plate kept fixed. Water after striking the plate leaves parallel to the plate. If the jet diameter is 4 mm and water moves at 10m/s impinging on an inclined plate at 60^0 to the direction of the jet. Determine the force exerted by the jet of water on the plate. 8M

8. a) Define a simple pendulum and derive an expression to determine its period of motion for small displacement from equilibrium positions. 6M

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Code : 1G511

R13

ANNAMACHARYA INSTITUTE OF TECHNOLOGY & SCIENCES :: RAJAMPET
(AUTONOMOUS)

B.Tech. I Year Regular Examinations, June 2014

Engineering Mechanics

(Common to Civil Engineering & Mechanical Engineering)

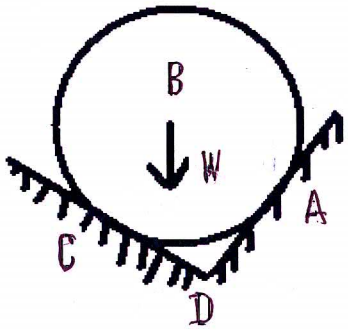
Time: 3 hours **Max Marks: 70**

Answer any FIVE of the following, Assume suitable data if necessary
All questions carry equal marks (14 Marks each)

* * * * *

1 a) Distinguish between collinear and concurrent forces. 4M

b). A ball of weight W=120N in a right angled groove as shown in figure given below. The left hand face of groove CD and right hand face groove AD are inclined to an angle of 30^0 and 60^0 to the horizontal respectively. If surfaces are smooth, find reaction forces.



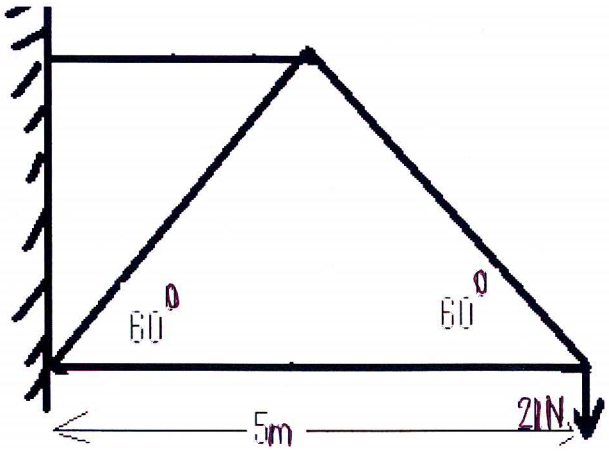
10M

2. a) What are the different types of supports? Explain briefly. 4M

b). Check whether the three forces F_1 = 6 i +10 j -14 k, F_2 = -6i +20 j + 15 k and F_3 =15 i -7j -4k are coplanar and concurrent. What is the resultant force and its direction with reference to force F_1. 10M

3. a) State the difference between perfect frame and imperfect frame. 4M

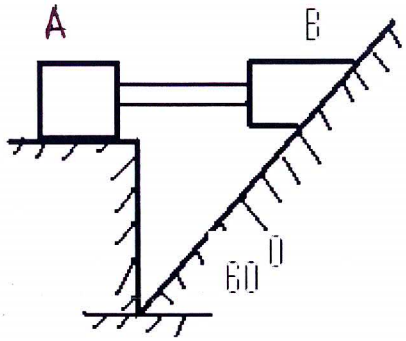
b) Determine the forces in all members of a cantilever frame shown in figure given below:



10M

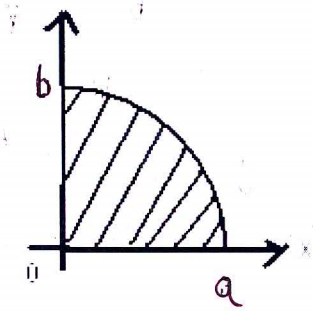
4. a) Distinguish between coefficient of friction and angle of friction. 4M

b) Two blocks A and B are connected by a horizontal rod and are supported on two rough surfaces as shown in figure given below.The coeffceint of friction of blocks 0.25 and mass of block B IS 150kg , find smallest weight of block A for which equilibrium can exist.



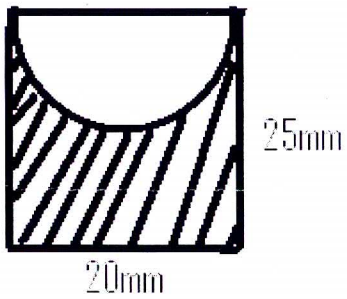
10M

5. Determine the centre of gravity of the area shown in figure given below. The area is quarter part of an ellipse.



14M

6. Find the moment of inertia of the shaded area shown in figure given below about bottom horizontal edge.



14M

7 The equation of motion of a particle moving in a straight-line is given by $S=15t+3t^2-t^3$ where s the distance covered from starting point in meters at the end of t seconds. Find(☹i) the velocity and acceleration at start (ii)The time when the particle reaches maximum velocity and (iii)Maximum velocity and maximum acceleration. 14M

8. a) State work- Energy principle in mathematical form 4M

b) A bullet of mass 81g and moving with velocity 300m/s is fired in to a block of wood and it penetrates to a depth of 10cm. Find also the force of resistance. If the bullet moving with the same velocity, were fired in to a similar piece of wood 5cm thick, with what velocity would it emerge?. Apply work-energy method. 10M

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Code : 1GC12

R13/R11

ANNAMACHARYA INSTITUTE OF TECHNOLOGY & SCIENCES :: RAJAMPET
(AUTONOMOUS)
B.Tech. I Year Regular Examinations, June 2014
Engineering Physics
(Common to All Branches)

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

Answer any FIVE of the following
All questions carry equal marks (14 Marks each)

* * * * *

1.	a)	Explain the Fraunhofer diffraction at single slit.	7M
	b)	Distinguish diffraction and interference.	4M
	c)	What is the polarization?	3M
2.	a)	With neat diagrams with example explain the crystal systems.	7M
	b)	State and explain the miller indices	3M
	c)	Derive the Bragg's law	4M
3.	a)	State and explain the Heisenberg's uncertainty principle.	8M
	b)	Write the de-Broglie's hypothesis.	6M
4.	a)	Discuss the Driff diffusion and Einstein's relation.	8M
	b)	Distinguish between Direct and Indirect band gap Semiconductors.	6M
5.	a)	Draw and explain the hysteresis of ferromagnetic materials.	8M
	b)	Write a note on soft and hard magnetic materials.	6M
6.	a)	What is the penetration depth?	6M
	b)	Write a note on Type I and Type II superconductors.	8M
7.	a)	Explain the principle of optical fibers.	7M
	b)	What is the Numerical aperture?	7M
8.	a)	Write the principles and properties of nanomaterial.	7M
	b)	Explain the Sol-gel method for synthesis of nanomaterial's.	7M

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Code : 1GC11 **R13/R11**

ANNAMACHARYA INSTITUTE OF TECHNOLOGY & SCIENCES :: RAJAMPET

(AUTONOMOUS)

B.Tech. I Year Regular Examinations, June 2014

English

(Common to All Branches)

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

Answer any FIVE of the following

All questions carry equal marks (14 Marks each)

* * * * *

1.		In his travelogue, "Heavens Gate", Pico Iyer tries to bring out the sensitive contrast between traditionalism and westernization. How does he do it?	14M
2.	a)	Discuss the period of Chaplin's entry into films.	07M
	b)	Mother Teresa had become an international celebrity. Give reasons to support this statement.	07M
3.		Do you think Visvesvaraya is a true son of both Andhra and Karnataka? If so, elaborate your stand.	14M
4.	a)	What was the dream of Sam Pitroda?	07M
	b)	"Avant-gardism is a luxury which we cannot yet afford in our country." Discuss.	07M
5.	a)	Raman was fascinated by musical sounds. Write about his research done on musical instruments.	07M
	b)	What is Tsunami and when did it struck the coast of Cuddalore? How did the administration respond?	07M
6.	a)	Miss Krishna was an extremely inquisitive woman. Give reasons to support this statement.	07M
	b)	How did Anand achieve the world's most coveted title in chess?	07M
7.	a)	Write a letter to the principal of your college thanking him for mid-day meals arrangement for poor students.	07M
	b)	A Committee was appointed to look into the complaints of serious financial irregularities in a branch office. As the convenor of the committee, draft your report to the general manager pointing about the problem and suggesting the actions to be taken.	07
8.	a)	Correct the Following Sentences: i) It did not rained yesterday. ii) Both of these restaurants is very good. iii) The woman lives next door is a doctor. iv) I met on my way home a friend of mine. v) He has not come home since some months. vi) If it is hot I would go out. vii) It's a very easy paper	07
	b)	Use the following idioms in your own words i) In cold blood ii) To see eye to eye iii) Blood is thicker than water iv) Bell the cat v) Put the horse before the cart vi) Apple of discord vii) To grease a persons palm	07

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Code : 1GC15 **R13/R11**

ANNAMACHARYA INSTITUTE OF TECHNOLOGY & SCIENCES :: RAJAMPET
(AUTONOMOUS)

B.Tech. I Year Regular Examinations, June 2014

Mathematical Methods

(Common to CSE & IT)

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

Answer any FIVE of the following
All questions carry equal marks (14 Marks each)

* * * * *

1 a) Show that the equations x + 2y + 2z =2, 3x - 2y – z = 5, 2x – 5y + 3z = - 4, x + 4y + 6z = 0 are consistent and solve them.

b) By reducing the matrix $\begin{pmatrix} 1 & 2 & 3 & 4 \\ 2 & 1 & 4 & 3 \\ 3 & 0 & 5 & -10 \end{pmatrix}$ into normal form and find its rank.

2. a) Prove that a square matrix A and its transpose A^T have the same eigen values.

b) Find a Matrix P which transforms the Matrix A = $\begin{pmatrix} 1 & 0 & -1 \\ 1 & 2 & 1 \\ 2 & 2 & 3 \end{pmatrix}$ to diagonal form.

3. a) The eigen values of a Skew-Hermitian matrix are either purely imaginary or zero.

b) Identify the nature, index and signature of the quadratic form

$$x_1^2 + 4x_2^2 + x_3^2 - 4x_1x_2 + 2x_1x_3 - 4x_2x_3.$$

4. a) Find the positive root of the equation $x - \tan^{-1}x - 1 = 0$ by Newton-Raphson method.

b) Given that $u_0 = 580$, $u_1 = 556$, $u_2 = 520$ and $u_4 = 385$ find u_3 by Lagrange's Interpolation.

5. a) Fit a least square Quadratic curve to the following data.

x	1	2	3	4
y	1.7	1.8	2.3	3.2

b) Find a relation of the form $y = ab^x$ for the following data by the method of least squares

x	1	2	3	4	5
y	7.1	27.8	62.1	110	161

6. a) The population a certain town is shown in the following table

Year	1961	1971	1981	1991	2001
Population (in thousands)	19.96	39.65	58.81	77.21	94.61

Find the rate of growth of population in 1991.

b) A solid of revolution is formed by rotating about the x – axis, the area between the x–axis, the lines x = 0 and x = 1 and a curve through the points with the following co-ordinates:

x	0.00	0.25	0.5	0.75	1.00
y	1.0000	0.9896	0.9589	0.9089	0.8415

Estimate the volume of the solid formed using Simpsons rule.

7. Use Milne's method to find y(0.4), given that $\frac{dy}{dx} = 1 + xy^2$, y(0) = 1. Find the starting values by using Taylor's series method.

8 a) Define a Fourier series and write the Dirichlet conditions for the expansion of f(x) as a Fourier series.

b) Find the Fourier series for the function

$$f(x) = \pi x, \quad 0 \le x \le 1$$
$$= \pi(2 - x), \quad 1 \le x \le 2$$

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R13/R11

Code : 1GC14

ANNAMACHARYA INSTITUTE OF TECHNOLOGY & SCIENCES :: RAJAMPET
(AUTONOMOUS)
B.Tech. I Year Regular Examinations, June 2014
Mathematics-I
(Common to All Branches)

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

Answer any FIVE of the following
All questions carry equal marks (14 Marks each)

* * * * *

1. a) Solve $(4r^2s - 6)dr + r^3ds = 0$ 5M

   b) Find the equation of the family of all orthogonal trajectories of the family of the circles, which pass through the origin (0,0) and have centers on the Y-axis. 9M

2. a) Solve $(4D^2 + 8D + 3)y = xe^{-x/2}\cos x$ 7M

   b) Solve by the method of variation of parameters $(D^2 + 1)y = \operatorname{cosec} x$ 7M

3. a) Trace the curve $(x^2 - a^2)(y^2 - b^2) = a^2b^2$ 7M

   b) Find area of the loop of the curve $x^4 + 3x^2y^2 + 2y^4 = a^2xy$ 7M

4. a) Apply Lagrange's Mean value theorem to the function f(x) = logx in (a, a+h) and determine θ in terms of a and h. Hence deduce that $\theta < \frac{1}{\log(1+x)} - \frac{1}{x} < 1$ 9M

   b) If f(x)=$\sqrt{x}$ and $g(x) = \frac{1}{\sqrt{x}}$, Prove that C of Cauchy's Mean value theorem is geometric mean between a and b, a>0, b>0 5M

5. a) Evaluate $\iint r^3\, dr\, d\theta$, over the area bounded between the circles $r = 2a\cos\theta$ and $r = 4\cos\theta$ 7M

   b) Change the order of integration in the integral $\int_0^{4a}\int_{x^2/4a}^{2\sqrt{ax}} dy\, dx$ 7M

6. a) Find the inverse Laplace transform of (i) $\frac{1}{s^2(s^2+a^2)}$ (ii) $\frac{21s-33}{(s+1)(s+2)^3}$ 7M

   b) State and prove Convolution theorem of Laplace transformations 7M

7. Solve the Differential equation by using Laplace transformations
   $y'' - 3y' + 2y = 4t + e^{3t}$ when $y(0) = 1$ *and* $y'(0) = -1$ 14M

8. a) Find the angle between the surfaces $x^2 + y^2 + z^2 = 9$ and $z = x^2 + y^2 - 3$ at the point (2, -1, 2) 5M

   b) Verify Stokes theorem for $\bar{F} = (x^2 + y^2)\bar{\imath} - 2xy\bar{\jmath}$ taken round the rectangle bounded by the lines $x = \mp a, y = 0, y = b$ 9M

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Code : 1G111

R13/R11

ANNAMACHARYA INSTITUTE OF TECHNOLOGY & SCIENCES :: RAJAMPET
(AUTONOMOUS)

B.Tech. I Year Regular Examinations, June 2014

Programming in C and Data Structures

(Common to CSE & IT)

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

Answer any FIVE of the following
All questions carry equal marks (14 Marks each)

* * * * *

1. a) Discuss various major parts of Computer Hardware
   b) What are the different stages in Program development? Explain.
2. a) What are the Basic Data types of C language? Explain with examples.
   b) What are the jump statements in C language? Explain.
3. a) What are the uses of Multi Dimensional Array? Illustrate with examples.
   b) Write a C program to find factorial of a given number using recursion.
4. a) Explain any four string manipulation functions?
   b) Discuss pointers and arrays.
5. a) Compare and contrast between structures and unions.
   b) What are command line arguments? Illustrate with example.
6. a) Explain linear data structures with examples.
   b) What are the applications of stack?
7. a) Define a linked list. Illustrate insertion and deletion in singly linked list.
   b) Distinguish between Tree and Graphs. What are the applications of Graph?
8. a) Explain Selection Sort with example
   b) Illustrate Binary Search with example.

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Code : 1G112

R13/R11

ANNAMACHARYA INSTITUTE OF TECHNOLOGY & SCIENCES :: RAJAMPET
(AUTONOMOUS)

B.Tech. I Year Regular Examinations, June 2014

C Programming and Introduction to Data Structures

(Common to CIVIL, EEE, ME & ECE)

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

Answer any FIVE of the following
All questions carry equal marks (14 Marks each)

* * * * *

1.	a)	Define Algorithm and discuss the characteristics of an Algorithm	7M
	b)	Describe the Basic steps in the System Development Life Cycle.	7M
2.	a)	Describe all unconditional statements used in C Language.	7M
	b)	Write a C program that changes a temperature reading from Fahrenheit to Celsius using the following formula: Celsius=(100/180)*(fahreheit – 32).	7M
3.	a)	Define Array and Describe types of Arrays.	7M
	b)	Write a C program to find Greatest Common divisor of two integer values using functions.	7M
4.	a)	Discuss all string handling functions in C Language.	6M
	b)	What is a pointer, Write a C Program which performs addition and multiplication of two integers using pointers, where each integer is pointed by a pointer	8M
5.	a)	Differentiate arrays and structures in C Language and explain the importance of -> pointer in structures.	6M
	b)	Write a C Program that initializes a student structure which consists of student name, rollno and three subjects marks. Find the average of three subjects marks and display student name, rollno, average.	8M
6.	a)	Discuss the differences between text file and binary file	6M
	b)	Write a C program to copy the content of one file to another file.	8M
7.	a)	Differentiate Array and Linked List. List out the advantages of Linked lists.	6M
	b)	Convert the following infix expression to postfix form and evaluate the postfix expression using stacks (3+2*4-(6/5))	8M
8.		Write a program to sort the elements whose worst case is $O(n^2)$ and average case is O(nlogn).	14M

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Code : 1G311

R13/R11

ANNAMACHARYA INSTITUTE OF TECHNOLOGY & SCIENCES :: RAJAMPET

(AUTONOMOUS)

B.Tech. I Year Regular Examinations, June 2014

Electronic Devices and Circuits

(Common to EEE & ECE)

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

Answer any FIVE of the following

All questions carry equal marks (14 Marks each)

* * * * *

1. a) Discuss the importance of semiconductors in detail. 7M

   b) Show that Fermi level is close to valance band in p-type and close to Conduction band in n-type semiconductors with necessary equations and diagrams 7M

2. a) Derive the expression for the Transition capacitance (C_T) in the case of PN junction diode. 7M

   b) Briefly explain about zener diode with V-I characteristics. 7M

3. a) Explain the operation of half wave rectifier with the help of neat diagram 6M

   b) Derive the expressions of the following for full wave rectifier.

   i) Average DC current ii) RMS current iii) Efficiency iv) Ripple factor 8M

4. a) Explain the operation of CE configuration with input and output Characteristics and indicate its different operating regions and its significance 9M

   b) A transistor operating in CB configuration has I_C=2.99mA, I_{CO}=0.02mA and I_E=3mA What current will flow in the collector of this transistor with a base current of 30μA. when connected in CE configuration 5M

5. a) What is meant by biasing? Explain voltage –divider bias and derive an expression for its stability factor(S). 7M

   b) Consider the self bias circuit where V_{CC}=22.5V, R_C=5.6KΩ, R_E=1KΩ, R_2=10KΩ & R_1=90KΩ, β=55, V_{BE}=0.6V. The transistor operates in active region. Determine the Q-point of the transistor & its stability factor. 7M

6. a) Explain the operation of Depletion MOSFET. 9M

   b) Compare and contrast JFET & MOSFET. 5M

7. a) State and explain miller's theorem and its dual. 7M

   b) In a single stage CE amplifier, R_S=1.2KΩ, R_L=10KΩ, h_{fe}=50, h_{oe}=25μA/V, h_{re}=2.5X10^{-4}, h_{ie}=1100Ω. Find A_I, A_V, Z_I & Z_O. 7M

8 a) Explain the operation of silicon controlled rectifier (SCR) and derive the expression for Anode current. 9M

   b) Write short notes on solar cells. 5M

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Code : 1GC13

R13/R11

ANNAMACHARYA INSTITUTE OF TECHNOLOGY & SCIENCES :: RAJAMPET

(AUTONOMOUS)

B.Tech. I Year Regular Examinations, June 2014

Engineering Chemistry

(Common to All Branches)

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

Answer any FIVE of the following

All questions carry equal marks (14 Marks each)

* * * * *

1.	a)	Differentiate temporary and permanent hardness of water	3M
	b)	Write inter-relationship between various units of hardness	3M
	c)	Estimate the hardness of water by EDTA method	8M
2.	a)	What is EMF? Derive Nernst equation for single electrode potential.	4M
	b)	What are concentration cells? explain concentration cells with and without transference	10M
3.	a)	Define corrosion. Explain the mechanism of electrochemical corrosion.	6M
	b)	How are metals protected against corrosion by modifying the environment?	4M
	c)	Write a note on sacrificial anode.	4M
4.	a)	What are the differences between thermosetting plastics and thermoplastic plastics?	8M
	b)	Write a note on compounding of rubber.	6M
5.	a)	Discuss the classification and properties of lubricants.	10M
	b)	Write a brief note on rocket propellants.	4M
6.	a)	Define the terms involved in phase rule equation with suitable examples.	7M
	b)	Explain the phase diagram of one component system.	7M
7.	a)	Explain the analysis of flue gas by Orsat's apparatus.	8M
	b)	Explain the Otto-Hoffmann by product oven method for manufacture of metallurgical coke.	6M
8.	a)	Explain the classification of refractory materials with examples.	6M
	b)	Discuss the criteria of good refractory materials.	8M

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Code : 1G513a

R13/R11

ANNAMACHARYA INSTITUTE OF TECHNOLOGY & SCIENCES :: RAJAMPET
(AUTONOMOUS)

B.Tech. I Year Regular Examinations, June 2014

Engineering Drawing

(Electrical & Electronics Engineering)

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

Answer any FIVE of the following
All questions carry equal marks (14 Marks each)

* * * * *

1. Draw a straight line AB of any length. Mark a point F, 65mm from AB. Trace the paths of a point P moving in such away, that the ratio of its distance from the point F, to its distance from AB is 2:3. Draw a normal and a Tangent to the curve at a point on it, 50mm from F. 14M

2. Construct a cycloid having a rolling circle diameter as 50 mm for one revolution. Draw a normal and tangent to the curve at a point 35 mm above the directing line. 14M

3. (a) The front view of a line, inclined at 30° to the VP is 65mm long. Draw the projections of the line, when it is parallel to and 40mm above the HP., its one end being 30mm in front of the VP. 7M

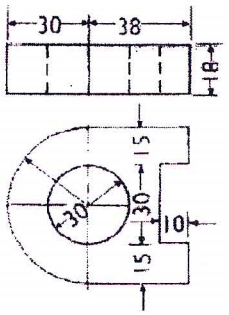
   (b) The top view of a 75mm long line measures 55mm. The line is in the VP, its one end being 25mm above the HP, Draw its projections. 7M

4. A circular plate of diameter 70mm has the end A of the diameter AB in the HP. and the plane is inclined at 40^0 to HP. Draw its projections when
   i) The top view of diameter AB is inclined at 45^0 to 'xy' line.
   ii) The diameter AB makes 45^0 with VP 14M

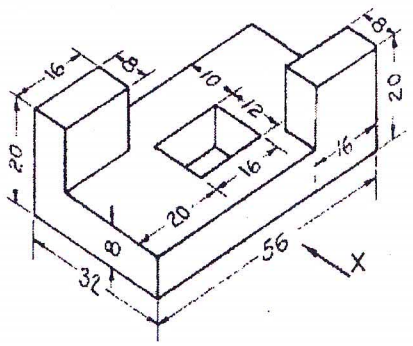
5. A square prism, base 40 mm side and height 65 mm, has its axis inclined at 45° to the H.P. and has an edge of its base, on the H.P. and inclined at 30° to the V.P. Draw its projections. 14M

6. Draw the isometric projection of a pentagonal pyramid of base side 30mm and axis 50mm. the pyramid is kept on its base on the (a) H.P. (b) V.P. 14M

7. Draw the isometric view of the block, two views of which are shown in figure below. (All dimensions are in mm). 14M



8. Draw Front view, Top view and Side view of the isometric view given in figure below according to first angle projection method.(All dimensions are in mm) 14M



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Code : 1G513c

R13/R11

ANNAMACHARYA INSTITUTE OF TECHNOLOGY & SCIENCES :: RAJAMPET
(AUTONOMOUS)
B.Tech. I Year Regular Examinations, June 2014
Engineering Drawing
(Common to CSE & IT)

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

Answer any FIVE of the following
All questions carry equal marks (14 Marks each)

* * * * *

1. The vertex of a hyperbola is 65mm from its focus. Draw the curve if the eccentricity is 3/2. Draw a normal and a tangent at a point on the curve, 75 mm from the directrix. 14M

2. Construct a hypocycloid when the diameters of the rolling circle and directing circle are 40 mm and 180 mm respectively. Draw also a normal and tangent at a point 120 mm from the centre of the directing circle. 14M

3. A line PQ, 64 mm long has one of its extremities 20 mm in front of VP and the other 50 mm above HP. The line is inclined at 40° to HP and 25° to VP. Draw its top and front views. 14M

4. A pentagonal plane with a 35 mm side is resting on H.P one of its edges makes an inclination 45° with V.P and its surface is inclined at 30° to the H.P. Draw the projections. 14M

5. A square prism of 42 mm side of base and 64 mm long rests on one of its long edges on HP, so that a rectangular face makes 30 ° with HP and is perpendicular to VP. It is cut by a section plane parallel to HP and 6mm above the axis. Draw the front view and sectional top view? 14M

6. Draw an isometric projection of a frustum of the pentagonal pyramid with a 40 mm base side, 20 mm top side, and 35 mm height resting on its base in the H.P. 14M

7. Draw the isometric view of the object whose orthographic projections are shown in figure1. All dimensions are in mm 14M

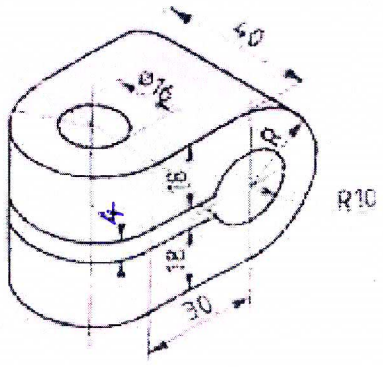

Figure1

8. Draw the orthographic projections for the given isometric view shown in figure 2. All dimensions are in mm. 14M

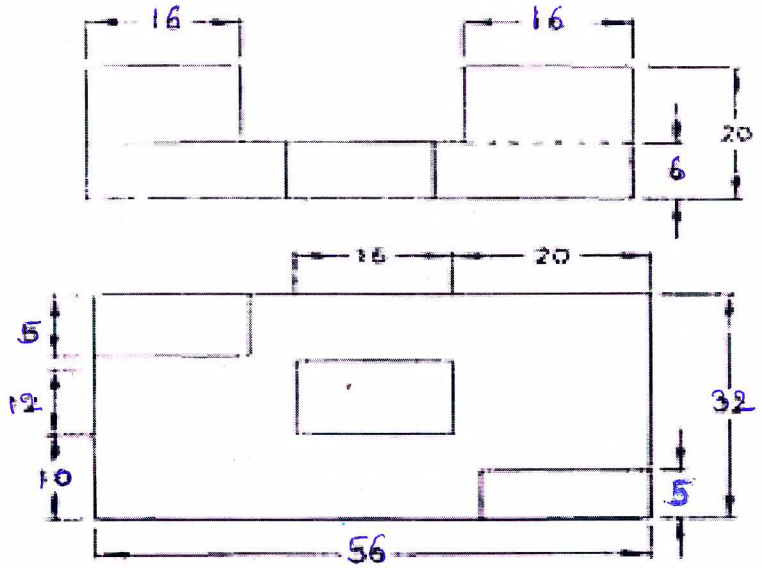

Figure2

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Code : 1G513b

R13/R11

ANNAMACHARYA INSTITUTE OF TECHNOLOGY & SCIENCES :: RAJAMPET

(AUTONOMOUS)

B.Tech. I Year Regular Examinations, June 2014

Engineering Drawing

(Electronics & Communication Engineering)

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

Answer any FIVE of the following

All questions carry equal marks (14 Marks each)

* * * * *

1. Inscribe an ellipse in a parallelogram having sides 150mm and 100 mm long and an included angle of 120°. 14M

2. A circle of 35 mm diameter rolls along a straight line without slipping. Draw a curve traced out by a point P on the circumference for one complete revolution of the circle. Name the curve and draw tangent to the curve at a distance 25 mm from the straight line. 14M

3. A line AB is 75 mm long. A is 50 mm in front of VP and 15 mm above HP. B is 15 mm in front of VP and is above HP. Top View of AB is 50mm long. Draw and measure the front view. Find the true inclinations. 14M

4. An isosceles triangle ABC with a 60 mm base AB and altitude 8 mm , has its base in the V.P. and inclined at 30 to the H.P. The corner A is 15 mm above the H.P. and the corner C is in the H.P. Draw the projections of the plane. 14M

5. A pentagonal pyramid, having a base with a 30 mm side and a 70 mm long axis has one of the corners on the ground with its axis inclined at 45 to the H.P. A vertical Plane containing the axis and that corner is inclined at 30 to the V.P. Draw its Projections. 14M

6. A pentagonal pyramid of height 60 mm and side 28 mm is resting on HP, keeping its Axis vertical and one edge of the base parallel to VP. Draw isometric projection of the solid? 14M

7. Draw the isometric view of the object whose orthographic projections are shown in figure1. All dimensions are in mm. 14M

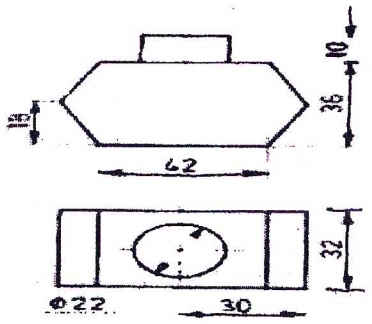


Figure1

8. Draw the orthographic projections for the given isometric view shown in figure2. All dimensions are in mm. 14M

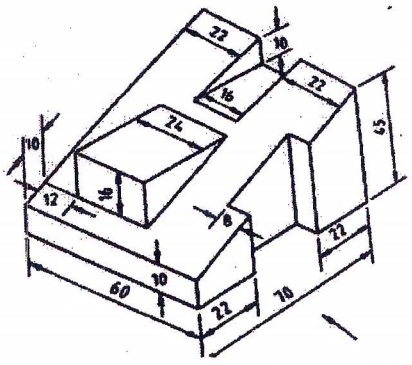


Figure2

Code : 1G512a

R13/R11

ANNAMACHARYA INSTITUTE OF TECHNOLOGY & SCIENCES :: RAJAMPET
(AUTONOMOUS)

B.Tech. I Year Regular Examinations, June 2014

Engineering Graphics

(Civil Engineering)

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

Answer any FIVE of the following
All questions carry equal marks (14 Marks each)

* * * * *

1. A circle of 50 mm diameter rolls on a straight line without slipping. Trace the locus of a point P on the circumference of the circle rolling for one revolution. Name the curve. Draw a normal and tangent to the cure at any point on the curve. 14M

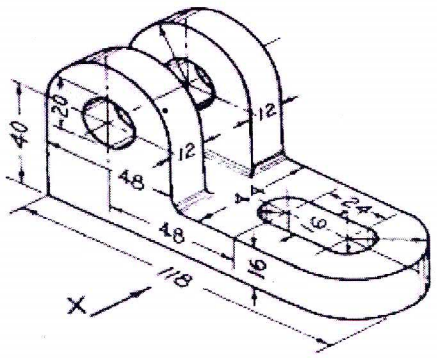
2. A line AB is inclined at 40^0 to HP. Its one end A is 25 mm above HP and 30 mm in front of VP. The top view of the line is 70 mm and is inclined at 30^0 to XY. Draw the projections of the line and determine its true length and its inclination with VP. Also locate its traces. 14M

3. A square lamina ABCD of side 40 mm is resting on HP on one of its corner and its surface is inclined at 30^0 to HP and the diagonal passing through the corner is inclined at 40^0 to VP. Draw the projection of the lamina. 14M

4. A cone of base 45 mm diameter and axis 60 mm long lies with one of its generators on HP and axis parallel to VP. Draw its projections. 14M

5. A pentagonal pyramid of side of base 30 mm and axis 60 mm long is resting on its base on HP with an edge of the base parallel to VP. Draw the development of the lateral surface of the pyramid. 14M

6. Draw the Orthographic view of the figure given below:



14M

7. A vertical cylinder of 60 mm diameter is penetrated by a horizontal cylinder of 45 mm diameter. The axes of two cylinders are ingtersecting at right angles. Draw the projcetions of the two cylinders showing curves of intersection. 14M

8. A rectangle plane with 50 mm and 35 mm sides is lying in ground plane (GP) with the longer side parallel to and 16 mm behind the Picture plane (PP). The station point is 55 mm in front of PP, 60 mm above GP and lies in the central plane (CP) passing through the centre of the object. Draw its perspective view 14M

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