I B.Tech I Semester Regular Examinations, January-2020

Sub Code: 19BCC1TH01   **COMMUNICATIVE ENGLISH - I**

Time: 3 hours   (Common to CE, EEE, ME, ECE, CSE & IT)   Max. Marks: 60

Note: Answer All **FIVE** Questions.

All Questions Carry Equal Marks   (5 X 12 = 60M)

Q.No		Questions	Marks
		Unit - I	

1	a	I. Why was Morita called the "Gadget Guru" of our generation?
		II. Write a brief paragraph on the person/quality you dislike.
		III. Re-arrange the words to form meaningful questions.
		   A. proposal are interested you in the?
		   B. you new people often how do meet?
		   C. a personality was many sided Nehru ?
			6+3+3=
			[12M]

		OR	
	b	I. Describe Sony's relationship with music and media. II. Write a small paragraph on your favourite sports player. III. Write your own sentences using the following words A. novel B. bandwidth C. showcase	6+3+3= [12M]
		Unit - II	

2	a	I. Why is Ambani's story a true "rags to riches" tale?
		II. Construct a coherent paragraph by arranging the jumbled sentences A, B, C, D, E and F to form a logical sequence.
		   A. In other words, we must develop and use our ability to reason, because the destruction or the preservation of the places in which we live depends on us.
		   B. Growing up means not only getting larger, but also using our sense and our brain is to become more aware of things around us.
		   C. Not only does he have a memory but he is able to think and reason.
		   D. In this, man differs from all other animals.
		   E. Before we spray our roadside plants or turn sewage in to our rivers, we should pause to think what the results of our action are likely to do.
		   F. This is to say, he is able to plan what he is going to do in the light of his experience before he does it.
		III. Fill in the blanks with the correct article (a/an/the). Put a (0/zero) if an article is not needed in a blank.
		I have two brothers. One, George, is still in ......, and ...... other, Mike has already graduated. Mike is ...... kind of guy that is very serious. I remember ...... last time when I saw him furious. He was then wearing ...... sweater which matched his ...... red hair.
			6+3+3=
			[12M]

		OR	
	b	I. Detail the saga of Reliance Industries under the able leadership of Ambani. II. Write a paragraph about an add on course you are planning to take, detailing its prominence in the job market.	6+6= [12M]

3	a	**Unit - III**
		I. What was the reaction of Braille's parents when he lost his vision?
		II. Fill in the gaps with suitable verb forms.
		   A. John ......(watch) TV every night.
		   B. Smita usually ...... (do) her homework during nights.
		   C. The doctor told him to stop ...... (smoke)
		   D. Could you ...... (help) me please?
		   E. They ...... (come) here next week to visit my office.
		   F. Would you mind ...... (open) the window, please?
			6+6=
			[12M]

		OR	
	b	I. Describe the earlier system of reading for the blind before Braille. II. Fill in the gap with the most suitable words from the list given. (decided, reached, became, lived, is, received) Once upon a time there (1) …… a man called Damocles. A friend of his eventually (2) …… the ruler of a small city. Damocles thought, 'How lucky my friend (3) ……. He (4) …… to visit his friend to enjoy his hospitality. When he (5) …… the palace, the king himself (6) …… him with respect and affection.	6+6= [12M]

		Unit - IV	
4	a	I. Where did Mallika Srinivasan derive motivation and inspiration from? II. Create a pie chart on what activities you spend your time on during semester break. III. Write the suitable antonyms for the following. A. amicable B. hostile C. dull	6+3+3= [12M]
		OR	

	b	I. What were the major setbacks faced by Malika Srinivasan during her time
		    at TAFL?
		III. Complete the following sentences with appropriate adjectives from the list
		        given below
		        (happy, intelligent, vibrant, lazy, amiable)
		    A. If you are ……., you will easily catch up with the cutting edge technologies.
		    B. I'm ……… with what I have.
		    C. The session was so …… that all the students stayed glued to their chairs.
		III. Complete the following sentences by using appropriate
		    Positive/Comparative/Superlative form of the words in brackets.
		    A. Take the_____ (short) of the two routes given in the map.
		    B. My_____ (old) brother is a software employee
		    C. He is the_____(interesting) person I have ever met.
			6+3+3=
			[12M]

		Unit - V	

5	a	I. Enumerate the contribution of Yunus to the world for winning the Nobel Peace Prize?
		II. Each sentence has one extra word that is not required, find the word and
		    write correct sentence.
		    A. This helped collaborate together and work as a team.
		    B. Smita retuned back her borrowings.
		    C. I finished off the job ahead of the dead line.
		    D. Would you please repeat again y our proposal?
		    E. The new innovations were atartling
		    F. Do you have any cash money?
			6+6=
			[12M]

		OR	

	b	I. Write an essay in about 300 words on 'social media and its impact on youth'.
		II. Each sentence has one extra word that is not required, find the word and
		    write correct sentence.
		    A. People discuss about Politics all the time.
		    B. My daughter is more taller than my wife.
		    C. Raj maintains a very unique style in dressing.
		    D. Let us completely finish the work.
		    E. The students repeated back the answers.
		    F. We met our friends together in a get together.
			6+6=
			[12M]

I B.Tech I Semester Regular Examinations, January-2020

Sub Code: 19BCC1TH03   **LINEAR ALGEBRA AND CALCULUS**

Time: 3 hours   (Common to CE, EEE, ME, ECE, CSE, IT)   Max. Marks: 60

Note: Answer All **FIVE** Questions.

All Questions Carry Equal Marks   (5 X 12 = 60M)

Q.No.		Questions	Marks
		Unit-I	
1	a	i) Reduce the following matrix into its normal form and hence find its rank $$\begin{bmatrix} 2 & 3 & -1 & -1 \\ 1 & -1 & -2 & -4 \\ 3 & 1 & 3 & -2 \\ 6 & 3 & 0 & -7 \end{bmatrix}.$$	[6M]
		ii) Investigate for consistency of the following system of equations and if possible find the solutions: $x+2y+z=3,\ 2x+3y+2z=5,\ 3x-5y+5z=2$.	[6M]
		OR	
	b	i) Use Gauss-Seidal iteration method to solve the equations $10x+y+z=12,\ 2x+10y+z=13,\ 2x+2y+10z=14$.	[6M]
		ii) For what values of λ and μ so that the system of equations $x+y+z=6,\ x+2y+3z=10,\ x+2y+\lambda z=\mu$ will have (i) no solution (ii) a unique solution and (iii) an infinite number of solutions.	[6M]
		Unit-II	
2	a	Verify Cayley-Hamilton theorem for the matrix $A=\begin{bmatrix} 2 & -1 & 1 \\ -1 & 2 & -1 \\ 1 & -1 & 2 \end{bmatrix}$ and find its inverse and A^4.	[12M]
		OR	
	b	i) Find the eigen values and eigen vectors of the matrix $A=\begin{bmatrix} 6 & -2 & 2 \\ -2 & 3 & -1 \\ 2 & -1 & 3 \end{bmatrix}.$	[8M]
		ii) By applying the properties of eigen values, find the sum and product of the eigen values of $A=\begin{bmatrix} 10 & 0 & 0 \\ 2 & 4 & 0 \\ 1000 & -1 & 3 \end{bmatrix}$ and also find the eigen values of A^{-1} and A^T.	[4M]

		Unit-III	
3	a	i) Verify Lagrange's mean value theorem for the function $f(x) = e^x$ in the interval $[0, 1]$.	[6M]
		ii) By applying Cauchy's mean value theorem, find c for the function $f(x) = \sqrt{x}$, $g(x) = \dfrac{1}{\sqrt{x}}$ in $[a, b]$.	[6M]
		OR	
	b	i) Verify Rolle's theorem for the function $f(x) = (x-a)^m (x-b)^n$ where m, n are positive integers in $[a, b]$.	[6M]
		ii) Discuss maximum and minimum values of $3x^4 - 2x^3 - 6x^2 + 6x + 1$ in the interval $(0, 2)$.	[6M]
		Unit-IV	
4	a	i) Expand $e^x \log(1+y)$ in powers of x and y using Taylor's theorem.	[6M]
		ii) If $u = f(x-y, y-z, z-x)$, prove that $\dfrac{\partial u}{\partial x} + \dfrac{\partial u}{\partial y} + \dfrac{\partial u}{\partial z} = 0$.	[6M]
		OR	
	b	i) If $y_1 = \dfrac{x_2 x_3}{x_1}$, $y_2 = \dfrac{x_3 x_1}{x_2}$, $y_3 = \dfrac{x_1 x_2}{x_3}$ and then show that $\dfrac{\partial(y_1, y_2, y_3)}{\partial(x_1, x_2, x_3)} = 4$.	[6M]
		ii) Given $x + y + z = a$, examine the maximum value of $x^m y^n z^p$ using Lagrange's method of undetermined multipliers.	[6M]
		Unit-V	
5	a	i) By changing the order of integration, compute the double integral $\int_0^1 \int_{x^2}^{2-x} xy \, dx \, dy$.	[6M]
		ii) Evaluate $\int_0^1 \int_0^{1-x} \int_0^{1-x-y} dz \, dx \, dy$.	[6M]
		OR	
	b	i) Find the volume of a sphere of radius a.	[6M]
		ii) Find the lengths of the arc of the parabola $x^2 = 4ay$ measured from the vertex to one extremity of the latus-rectum.	[6M]

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I B.Tech I Semester Regular Examinations, January-2020

Sub Code: 19BCC1TH02   **ENGINEERING PHYSICS**

Time: 3 hours   (Common to CE, ME, ECE)   Max. Marks: 60

Note: Answer All **FIVE** Questions.

All Questions Carry Equal Marks   (5 X 12 = 60M)

Q.No			Questions	Marks
1	a	i)	Explain diagrammatically how Newton's rings are formed in the reflected light	[6M]
		ii)	Discuss Fresnel and Fraunhofer diffractions	[6M]
			OR	
	b	i)	Describe the construction of a Nicol Prism and Explain its action as a polarizer and analyzer	[6M]
		ii)	Write a short note on half wave plate.	[6M]
2	a		Describe the construction and working of Ruby laser and also mention the merits and demerits	[12M]
			OR	
	b	i)	Describe the construction of fiber and give the dimensions of various parts	[6M]
		ii)	Explain the principle behind the functioning of optical fiber.	[6M]
3	a	i)	Explain seven crystal systems with neat diagrams	[6M]
		ii)	Show that in FCC the atoms are more tightly packed than SC crystal	[6M]
			OR	
	b	i)	Explain Bragg's law of X-ray diffraction	[6M]
		ii)	sketch the crystal planes (1 1 1), (1 2 0), (3 0 0) and (0 1 0)	[6M]
4	a	i)	Explain Gauss theorem	[6M]
		ii)	Discuss the fundamental laws of electromagnetism	[6M]
			OR	
	b	i)	Explain the origin of magnetic moment and find the orbital and spin magnetic moments.	[6M]
		ii)	Differentiate hard and soft magnetic materials	[6M]
5	a	i)	Derive the expression for de-Broglie wavelength.	[6M]
		ii)	Explain the physical significance of wave function	[6M]
			OR	
	b	i)	Explain the differences between intrinsic and extrinsic semiconductors	[6M]
		ii)	Calculate the Hall coefficient for a given semiconductor using Hall effect.	[6M]

NARASARAOPETA ENGINEERING COLLEGE
NEC (AUTONOMOUS)

I B.Tech I Semester Regular Examinations, January-2020
ENGINEERING CHEMISTRY

Time: 3 hours   (Common to EEE, CSE, IT)   Max. Marks: 60

Note: Answer All **FIVE** Questions.
All Questions Carry Equal Marks (5 X 12 = 60M)

Q.No		Questions	Marks
1	a	i) Name the problems associated by using Normal water in Industries.Disuss in detail about any one	[6M]
		ii)Explain with the help of a neat sketch the purification of water by Ion Exchange method.Mention a few limitations of it	[6M]
		OR	
	b	i) Define Alkalinity of water.Mention the types of it and concerned formulae	[6M]
		ii) Give the significance of C.O.D,B.O.D,D.O by defining them	[6M]
2	a	How do you differentiate Thermo setting polymers from Thermoplastics?	[12M]
		OR	
	b	i) A fuel sample is found to have Carbon 74%,Hydrogen 6%,Nitrogen 1%,Oxygen2.2%,Moisture content 2.2% and Ash8%.Calculate G.C.V and N.C.V	[4M]
		ii) Mention any four fractions that were obtained during refining of petroleum and their boiling point ranges	[4M]
		iii)Give the definitions of Octane number and Cetane number.	[4M]
3	a	i) Discuss in detail about Sol Gel method of preparing Nanomaterials	[6M]
		ii) Raw rubber is as useless as that of pure gold.Justify your answer and give a solution to solve it	[6M]
		OR	
	b	i) What are composites?.Give their important applicaions	[6M]
		ii) Explain the role of Liquid crystals in Electronics	[6M]
4	a	i) How do you convert a Fuel in to directly Electricity?	[6M]
		ii) E-vehicles saves environmental quality.Write a comment on it.	[6M]
		OR	
	b	i) Give any three differences between Galvanisation and Tinning	[6M]
		ii) Name the constituents in Paints and write in brief about Pigment Volume Concentration	[6M]
5	a	i) Write about any one mechanism of Lubrication	[6M]
		ii) Give the importance of Flash point,Fire pointand Carbon Residue	[6M]
		OR	
	b	i) Write the Chemistry behind Setting and Hardening	[6M]
		ii) How do you classify Refractories?Give suitable examples.	[6M]

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I B.Tech I Semester Regular Examinations, January-2020

Sub Code: 19BCC1TH05   **PROBLEM SOLVING WITH PYTHON**

Time: 3 hours   (Common to CE & ECE)   Max. Marks: 60

Note: Answer All **FIVE** Questions.
All Questions Carry Equal Marks   (5 X 12 = 60M)

Q.No.		Questions	Marks
1		**Unit-I**	
	a	i) Discuss the variants of microcomputers that are widely used today.	[6M]
		ii) Describe the classification of computer software.	[6M]
		OR	
	b	i) Explain the basic architecture of a processor with a neat sketch.	[6M]
		ii) Write the basic applications of computers.	[6M]
2		**Unit-II**	
	a	i) Explain how to avoid unstructured loops in raptor.	[6M]
		ii) Draw a raptor flow chart to generate Fibonacci series.	[6M]
		OR	
	b	i) Explain how to create a sub chart using raptor.	[6M]
		ii) Draw a raptor flow chart to display the multiplication table of a given number.	[6M]
3		**Unit-III**	
	a	i) What are the different loop control statements available in python? Explain with suitable examples.	[6M]
		ii) Discuss the features of Turtle Graphics.	[6M]
		OR	
	b	i) Create two sets of integers, and compute their intersection and union by using & and | operator expressions.	[6M]
		ii) What are the different function prototypes? Explain with suitable examples.	[6M]
4		**Unit-IV**	
	a	i) Discuss any five operations that can be performed on Lists.	[6M]
		ii) Write a python program to read the contents of a text file and write into another.	[6M]
		OR	
	b	i) Demonstrate the traversing methods of dictionaries.	[6M]
		ii) Explain various String pattern matching functions in Python.	[6M]
5		**Unit-V**	
	a	i) Explain about different object oriented features supported by Python.	[6M]
		ii) Write a Python program that overloads '+' operator to add two objects of a class.	[6M]
		OR	
	b	i) Define Constructor. How to declare a constructor method in Python? Explain.	[6M]
		ii) Explain the concept of Exception Handling in Python.	[6M]

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I B.Tech I Semester Regular Examinations, January-2020

Sub Code: 19BEC1TH09   **ENGINEERING GRAPHICS**

Time: 3 hours   (ECE)   Max. Marks: 60

Note: Answer All **FIVE** Questions.

All Questions Carry Equal Marks   (5 X 12 = 60M)

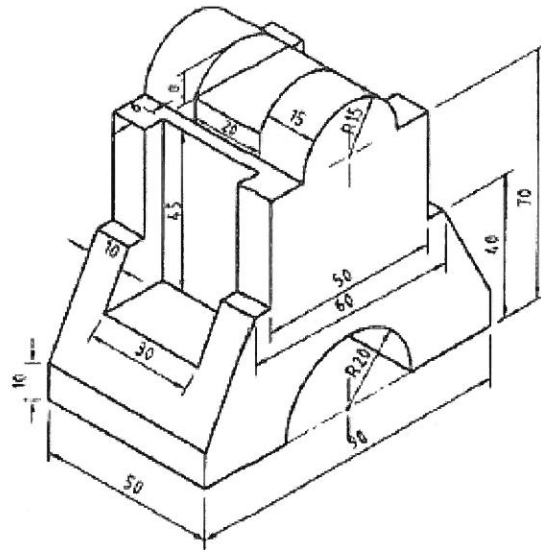| Q.No		Questions	Marks
		Unit-I	
1	a	The focus of a conic is 50 mm from the directrix. Draw the locus of a point 'P' moving in such a way that its distance from the directrix is equal to its distance from the focus. Name the curve. Draw a tangent to the curve at a point 60 mm from the directrix.	12M
		OR	
	b	The major axis of an ellipse is 150mm long and the minor axis is 100mm long. Find the foci and draw the ellipse by using 'arcs of circles' method. Draw a tangent to the ellipse at a point on it 25mm above the major axis	12M
		Unit-II	
2	a	A line PQ has its end P, 10 mm above the HP and 20 mm in front of the VP, the end Q is 35 mm in front of the VP. The front view of the line measures 75 mm. The distance between the end projectors is 50 mm. Draw the projections of the line and find its true length and its true inclinations with the VP and HP	12M
		OR	
	b	A line CD, inclined at 25° to the both HP and VP, measures 80 mm long. The end C is in the first quadrant and 25 mm and 15 mm from the above HP and the in front of VP respectively. The distances from both the reference planes. Draw the projections, find true length and true inclinations with the VP .	12M
		Unit-III	
3	a	A pentagon of side 30 mm rests on the ground on one of its corners with the sides containing the corner being equally inclined to the ground. The side opposite to the corner on which it rests is inclined at 30° to the VP and is parallel to the HP. The surface of the pentagon makes 50° with the ground. Draw the top and front views of the pentagon.	12M
		OR	
	b	A square lamina PQRS of side 40 mm rests on the ground on its corner P in such a way that the diagonal PR is inclined at 45° to the HP and apparently surface of the inclined at 30° to the VP. Draw its projections.	12M
		Unit-IV	
4	a	A right circular cone of base diameter 60 mm and height 80 mm is so placed that diameter KJ of the base is inclined at 50^0 with HP and the other diameter LM of the base is parallel to both HP and VP. Draw the top and front views of the cone. The diameters KJ and LM are perpendicular to each other.	12M
		OR	
	b	A pentagonal prism having base with a 30 mm side and a 75 mm long axis, has one of its rectangular faces on H.P. and the axis is inclined at 60 degrees to the V.P. Draw its projections.	12M

		Unit-V	
5	a	A cylinder of base diameter 50mm and height 60mm rests on its base on HP. It is cut by a plane perpendicular to VP and inclined to HP. The cutting plane meets the axis at a distance of 15mm from the top surface. Draw the isometric projection of the truncated cylinder.	12M
		OR	
	b	 Draw sketches of the front, top and left-side views of the object shown in Fig.	12M

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I B.Tech I Semester Regular Examinations, January-2020

Sub Code: 19BCC1TH10 **C PROGRAMMING**

Time: 3 hours (Common to EEE, ME, CSE, IT) Max. Marks: 60

Note: Answer All **FIVE** Questions. All Questions Carry Equal Marks (5 X 12 = 60M)

Q.No			Questions	Marks
			Unit-I	
1	a		i) Explain the Structure of C program in detail with an example.	[12M]
			OR	
	b		i) Define algorithm. Explain the key features of algorithm with an example.	[6M]
			ii) Define Flowchart. Draw and explain the flow chart for finding the maximum among three numbers.	[6M]
			Unit-II	
2	a		Define iteration. Explain different types of iterative statements in C language with an example.	[12M]
			OR	
	b		i)What is the difference between call by value and call by reference. Explain each with an example.	[6M]
			ii)Define recursion. Write a C program to find the factorial of the given number using recursion.	[6M]
			Unit-III	
3	a		i) Define array. Explain the various operations performed on arrays with an example.	[6M]
			ii) Write a C program to add two 'm × n' matrices. Cover all necessary conditions.	[6M]
			OR	
	b		i) Discuss the various string functions that can be performed on strings.	[12M]
			Unit-IV	
4	a		i) Define pointer. How to declare and access a pointer. Explain with an example.	[6M]
			ii) Explain the functions in dynamic memory allocation with an example.	[6M]
			OR	
	b		i) Define and differentiate structures and union with an example program.	[12M]
			Unit-V	
5	a		i) What are different types of files? Explain.	[5M]
			ii) Write a program to copy the contents of one file to other file and display the content on screen.	[7M]
			OR	
	b		i) Explain various operations performed on files with an example to each.	[12M]

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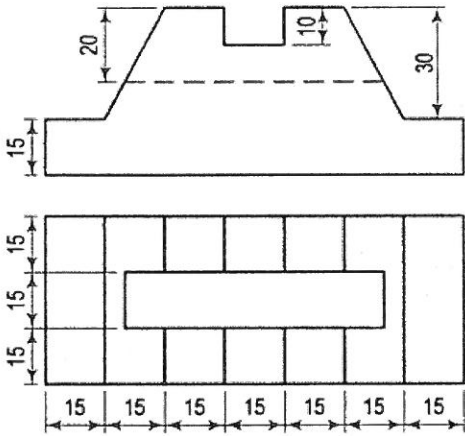
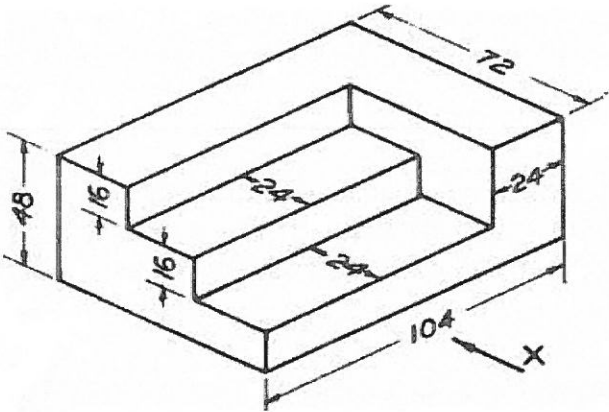**Sub Code: 19BCC1TH04** **ENGINEERING DRAWING** **Max. Marks: 60**

Time: 3 hours **(Common to CE & ME)**

Note: Answer All FIVE Questions. All Questions Carry Equal Marks   (5 X 12 = 60M)

Q. No		Questions	Marks
		Unit-I	
1	a	The major axis of an ellipse is 150 mm long and the minor axis is 100 mm long. Draw half the ellipse by concentric-circles method and the other half by oblong method. Also show a tangent and normal to the ellipse at a point on it 25 mm above the major axis.	[12M]
		OR	
	b	On a building plan, a line 20 cm long represents a distance of 10 m. Draw a diagonal scale for the plan to read up to 12 m, showing meters, decimeters and centimeters. Show on your scale the lengths 6.48 m and 11.14 m.	[12M]
		Unit-II	
2	a	Two points A and B are in the HP. The point A is 30 mm infront of the VP, while B is behind the VP. The distance between their projectors is 75 mm and the line joining their top views makes an angle of 45° with xy. Find the distance of the point B, from the VP.	[6M]
		A 90 mm long line is parallel to and 25 mm infront of the VP. It's one end is in the HP while the other is 50 mm above the HP. Draw its projections and find its inclination with the HP.	[6M]
		OR	
	b	A line AB is 85 mm long has its end A 25 mm away from both the reference planes and is in the first quadrant. The line is inclined at 50^0 to HP and 30^0 to VP. Draw its projections and mark the traces of the line.	[12M]
		Unit-III	
3	a	Draw the projections of a circle of 75 mm diameter having the end A of the diameter AB in the horizontal plane, the end B in the vertical plane, and the surface inclined at 30^0 to HP and at 60^0 to the VP.	[12M]
		OR	
	b	A rhombus has its diagonals 100 mm and 60 mm long. Draw the projections of the rhombus when it is so placed that its top view appears to be a square of diagonals 60 mm long, and the vertical plane through the longer diagonal makes 30°	[12M]
		Unit-IV	
4	a	Draw the projections of a pentagonal prism, base 25 mm side and axis 50 mm long, resting on its rectangular faces on the ground, with the axis inclined at 45^0 to the VP.	[12M]
		OR	

	b	A cylinder of base diameter 50 mm and axis length 60 mm is resting on HP on its base, cut by a plane inclined at 55^0 to HP and perpendicular to VP. The cutting plane is passing through a point on the axis at a distance 30 mm from the top end. Draw the development of the lateral surface of the remaining portion of the cylinder	[12M]

Unit-V

5	a	Draw isometric view for the given orthographic projections. 	[12M]
		OR	
	b	Draw the (i) Front view (ii) Top view and (iii) Side view for the following figure. 	[12M]

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NARASARAOPETA ENGINEERING COLLEGE
(AUTONOMOUS)

I B.Tech I Semester Regular Examinations, Jan-2020

Sub Code: 19BCI1TH06   ELECTRONIC DEVICES AND LOGIC DESIGN

Time: 3 hours   (Common to CSE & IT)   Max. Marks: 60

Note: Answer All **FIVE** Questions.
All Questions Carry Equal Marks   (5 X 12 = 60M)

Q.No.		Questions	Marks
		Unit-I	
1	a	i) Explain Zener Diode characteristics with neat diagrams	[6M]
		ii) Explain diode as a switch.	[6M]
		OR	
	b	i) Explain half wave rectifier with filter.	[6M]
		ii) Explain the construction and operation of LED.	[6M]
		Unit-II	
2	a	Explain input and output characteristics of Common emitter and common Base configuration of BJT.	[12M]
		OR	
	b	i) Explain enhancement mode of MOSFET	[6M]
		ii) Compare JFET and MOSFET	[6M]
		Unit-III	
3	a	i) Covert $(145)_6$ into decimal, binary and octal number system number.	[6M]
		ii) Given two binary numbers X=1010001 and Y=1000011 perform the subtraction (i) X-Y and (b) Y-X by using 1's complements.	[6M]
		OR	
	b	i) Simplify below Boolean function using Karnaugh Maps. $F(w,x,y,z) = \sum(1,3, 6, 9, 11, 12, 14) + d(0,2,8)$	[6M]
		ii) Given two binary numbers X=1010101 and Y=1001011 perform the subtraction (i) X-Y and (b) Y-X by using 2's complements.	[6M]
		Unit-IV	
4	a	i) Design half and full subtractor.	[6M]
		ii) Explain truth table and excitation table of JK flip-flop.	[6M]
		OR	
	b	i) Explain and design 1 To 4 demultiplexer.	[6M]
		ii) Explain truth table and excitation table of RS flip-flop.	[6M]
		Unit-V	
5	a	i) Explain synchronous counter with example.	[6M]
		ii) Explain operation of bidirectional shift register.	[6M]
		OR	
	b	i) Explain working of ripple counter with example.	[6M]
		ii) Explain operation of Universal shift register.	[6M]

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I B.Tech I Semester Regular Examinations, Jan-2020

BASICS IN MECHANICAL AND CIVIL ENGINEERING (EEE)

Time: 3 hours   Note: Answer All **FIVE** Questions.   Max. Marks: 60

Sub Code: 19BEE1TH08   All Questions Carry Equal Marks   (5 X 12 = 60M)

Q. No		Questions	Marks
		Unit-I	
1	a	i) Discuss in brief the principles of surveying	[6M]
		ii) Explain the importance of sub disciplines of civil engineering	[6M]
		OR	
	b	i) Describe the 'height of instrument' and 'rise and fall' methods of computing the levels.	[6M]
		ii) Explain about determination of areas by using different methods	[6M]
		Unit-II	
2	a	Discuss about Basic ingredients, manufacturing process, grades of cement	[12M]
		OR	
	b	i) Classification of stones	[6M]
		ii) Classification of Bricks	[6M]
		Unit-III	
3	a	i) Discuses about Arc and Resistance welding	[6M]
		ii) Explain about Metal forming	[6M]
		OR	
	b	i) Explain about Gas welding	[6M]
		ii) Discuses about Brazing and Soldering	[6M]
		Unit-IV	
4	a	i) Explain about Different types of power transmission by belt drives	[12M]
		OR	
	b	Classify different types of gears with neat sketches and their applications in real world.	[12M]
		Unit-V	
5	a	i) Discus about non-renewable energy and consequences	[6M]
		ii) Explain about solar energy with a schematic diagram	[6M]
		OR	
	b	i) Explain Working principle of petrol engine	[6M]
		ii) The following readings were taken during the test of a single cylinder four stroke oil engine: Cylinder diameter = 250 mm, Stroke length = 400 mm, Gross m.e.p. = 7 bar. Pumping m.e.p. = 0.5 bar, Engine speed = 250 r.p.m, Net load on the brake = 1080 N, Effective diameter of the brake = 1.5 m; Fuel used per hour = 10 kg. Calorific value of fuel = 44300 kJ/kg Calculate: (i) Indicated power (ii) Brake power (iii) Mechanical efficiency	[6M]