

**V.S.B ENGINEERING COLLEGE, KARUR**  
**DEPARTMENT OF INFORMATION TECHNOLOGY**  
**ASSIGNMENT QUESTIONS**  
**ACADEMIC YEAR: 2018-2019(EVEN SEMESTER)**

**Technical English**

Sl. No.	Assignment questions
1	Your cousin wants to join a computer course during the summer vacation and she has requested you to guide in this regard. write a letter of advice/guidance to her regarding the same.
2	Write a letter to a friend congratulating on her success in the final examination.
3	Write a letter to your friend, thanking him on presenting you a gift on your birthday.
4	Write a letter to your friend inviting him to your house.
5	Uncle to niece from abroad describing about the places he has visited
6	Write a letter to your friend describing a visit to the museum.
7	Write a letter to your friend congratulating him for winning a scholarship. You are vivek and you live in 45, valmiki nagar, cheenai.
8	Write a personal letter to your cousin offering good suggestions to spend his/her ensuing summer vacation usefully so as to enable him/her to be well prepared for higher collegiate.education.
9	Write a personal letter to your cousin, who would like to join a computer course in the ensuing summer vacation, advising her to take up right course and the right institute
10	Write a personal letter to your cousin, who would like to join a computer course in the summer vacation, advising her to take up right course and the right institute
11	Write a letter to your friend expressing the joy you experienced while reading a science fiction. Mention all its important features.
12	Your friend is leaving for UK for higher studies on a British Council Scholarship write a letter congratulating him and advising him to make the best use of the opportunity
13	Your uncle has offered to sponsor you for a three-week activity holiday with some training you have to choose between mountaineering and trekking write a letter to your uncle thanking him for sponsoring you and explain your reasons for choosing either mountaineering or trekking.
14	Your father has brought a personal computer, but he is not sure how useful it would be for him at home. Write a letter to him telling him how best and useful it can be in his daily life.
15	Write a letter to your cousin advising him/her to take up a computer software course during the vacation in December . In your letter, explain the benefits of enrolling for such a course. Your letter should not exceed 200 words
16	Imagine that you have got an internet facility at home . write a letter to your friend explaining the advantages of having an internet facility at home. Your letter should not exceed 200 words
17	Write a letter to the editor of a local newspaper in your town about water scarcity in your

	locality and suggest ways to solve it.
18	Assume that the residents of your town experience frequent power failures the children preparing for the examination suffer a lot write a letter to the editor of a news paper explaining the problems of school going children.
19	Write a letter to the editor of a leading English newspaper about the sufferings of office goers and school children who use the public transport.
20	Assume yourself to be the chairman of a social welfare association you are appalled by the television programmes, where various channels show programmes replete with violence write a letter to the editor of a news paper, expressing your concern over the impact of these programmes on young, impressionable children.
21	Write a letter to the editor of a leading English newspaper about the nuisance created by loudspeakers in your locality.
22	Write a letter to the editor of a newspaper in your region about the ragging menace in educational institutions and suggest ways to prevent them
23	Write a letter to the editor of a newspaper highlighting any four faced by commuters in city buses .suggest suitable solution for each one of the problem highlighted.
24	You happen to live in an area where political meeting are held frequently. Write a letter to the editor of a newspaper highlighting the problems experienced on account of noise pollution and suggest the steps that must be taken to solve the problem.
25	Write a letter of complaint to the editor of a popular newspaper about the increasing petrol price suggesting suitable remedial measures for the same.
26	Write a letter of the editor of a popular newspaper (highlighting) the traffic problems in a cosmopolitan city like Chennai, and also offering suitable solution to solve them.
27	Write a letter to the editor of a leading English newspaper about the sufferings of office goers and school children who use the public transports
28	Write a letter of the editor of a newspaper highlighting the importance of 'rain water harvesting' also suggest ways to use water economically.
29	Write a letter of the editor of a popular newspaper suggesting how transport services in metropolitan cities could do a better service to the people concerned
30	Write a letter of the editor of a newspaper highlighting any four serious problems related to traffic in a metropolitan city like Chennai.
31	Write a letter of the editor of a newspaper explaining the need for providing bright street lamps in your street where there is no adequate lighting for most part of the street.
32	Write a dialogue between a shopkeeper and a customer who wishes to get his defective watch exchanged.
33	Write a dialogue between a teacher and a student regarding the student's future plans.
34	Write a dialogue between a customer and bank manager regarding opening a new account.
35	Sarathy visits the doctor, complaining of a head ache and fever. Build conversation between the doctor and Sarathy.
36	Write a dialogue describing the features of Tanjore Big Temple. Build a conversation between two friends.
37	Write a dialogue conversation between a student and workshop superintendent (W.S.) about practical.
38	Write a dialogue conversation between an F.Y and S.Y student about the library.
39	Write a dialogue conversation between teacher and student in language laboratory.
40	Write a dialogue conversation between Saurabh Joshi (candidate) and CEO (interviewer)

	during an interview.
41	Imagine that you are an Assistant Executive Engineer in TWAD Board. There is a proposal to build a new drainage system in the main locality in the town. The way the drainage system is to be built, its length and direction, how collected waste fluid is to be dealt with and the approximate cost of the project are the main points you have to discuss with the Executive Engineer. Covering all these aspects write a dialogue between the A Assistant Executive Engineer and the Executive Engineer.
42	Imagine that you are the commissioner of the municipality of a town. You have received a number of complaints over the unhygienic condition and disorderly maintenance of the main vegetable market. You call in the municipal Civil Engineer and the Sanitary Inspector and hold a conversation with them on what can be done to improve the condition of the market. End the conversation with a suggestion that the market be visited and the conditions there be directly seen.
43	Suppose that you are the student representative of the III year Mechanical Engineering class. You meet your professor to discuss an industrial visit. You have in mind certain places to visit and specific purposes for such a visit. Write a dialogue between you and the principal.
44	Imagine that you are the superintendent in th Electrical Engineering Laboratory in an engineering college. A new laboratory assistant has been appointed. He has come to meet you. You have to explain to him hw to handle instruments and equipments in the lab. The lab assistant has some doubts. He seeks information and helpful tips from you. A conversation follows. Write the dialogue that might have taken place between the superintendent and the lab assistant.
45	Imagine that you are the chairman of the college students union. The college union day celebration will be held on the 7 <sup>th</sup> of next month. It has been decided to invite Mahalakshmi, the computer engineer and creative writer as the chief guest to deliver speech. Imagine that you are with Mahalakshmi, at the present moment. You have conversation with her. Write down the dialogues that took place between you and Mahalakshmi.
46	Write a dialogue for one of the following situations: Share with Akash, your thoughts and pollution in the water bodies and ways to keep them clean. Write out this dialogue. The first exchange is given for you to start the dialogue.
47	Write a dialogue for one of the following situations: Your younger brother likes only junk food. So you decide to have a chat and make him understand the ill effects. Write out this dialogue. The first exchange is given for you to start the dialogue.
48	Write an E- mail to the principal of your college requesting him to arrange a charitable show to help the blind and deaf.
49	Write an E-mail to a friend or a relative congratulating him on getting a job.
50	Write an E-mail to a the manager, ford company seeking permission to visit the factory.
51	Write an e-mail to your professor requesting him to allow you to work in a project work in Chennai.
52	Write an e-mail to the green peace organization regarding the environment concern in your locality.
53	Write an e-mail to your friend suggesting him to apply to your company.
54	Write an e-mail to the manager, State Bank of India requesting him to send the details of your educational loan.
55	Write an e-mail to the principal of your college requesting him to give permission to arrange

	a charitable show to help the blind and deaf people through college student committee.
56	Write an e-mail to a friend or a relative congratulating him on getting a job.
57	Write an e-mail to the programme officer, National Service Scheme, requesting him to arrange a ten-day eye care camp in your village.
58	Write an e-mail to the manager of a software company seeking permission to visit the company.
59	Write an e-mail to the manager, Government Transport Corporation pointing out that there are insufficient buses on your route in the morning.
60	Assume yourself as student representative of III year B.Tech. (EEE). Write an email to the chairman of your college requesting him to grant merit scholarship to the students of EEE.

### Engineering Mathematics-I:

Sl.No	Assignment Questions
1.	Sketch the graph and find the domain and range of the function $f(x) = 2x - 1$ .
2.	A function $f$ is defined by $f(x) = \begin{cases} 1 - x & \text{if } x \leq -1 \\ x^2 & \text{if } x > -1 \end{cases}$ Evaluate $f(-2)$ , $f(-1)$ and $f(0)$ and sketch the graph.
3.	Find $\lim_{t \rightarrow 0} \left( \frac{1}{t\sqrt{1+t}} - \frac{1}{t} \right)$ .
4.	The sign function, denoted by $\text{sgn}$ , is defined by $\text{sgn } x = \begin{cases} -1 & \text{if } x < 0 \\ 0 & \text{if } x = 0 \\ 1 & \text{if } x > 0 \end{cases}$ (a) Sketch the graph of this function (b) Find the each of the following limits or explain why it does not exist (i) $\lim_{x \rightarrow 0^+} \text{sgn } x$ (ii) $\lim_{x \rightarrow 0^-} \text{sgn } x$ (iii) $\lim_{x \rightarrow 0} \text{sgn } x$ (iv) $\lim_{x \rightarrow 0}  \text{sgn } x $ .
5.	If $\lim_{x \rightarrow 0} \frac{f(x)}{x^2} = 5$ , find the following limits (a) $\lim_{x \rightarrow 0} f(x)$ (b) $\lim_{x \rightarrow 0} \frac{f(x)}{x}$
6.	Show by means of an example that $\lim_{x \rightarrow a} [f(x) + g(x)]$ may exist even though neither $\lim_{x \rightarrow a} f(x)$ nor $\lim_{x \rightarrow a} g(x)$ exists.
7.	Show by means of an example that $\lim_{x \rightarrow a} [f(x)g(x)]$ may exist even though neither $\lim_{x \rightarrow a} f(x)$ nor $\lim_{x \rightarrow a} g(x)$ exists.
8.	Is there a number $a$ such that $\lim_{x \rightarrow -2} \frac{3x^2 + ax + a + 3}{x^2 + x - 2}$ exists? If so, find the value of $a$ and the value of the limit.
9.	Use the squeeze theorem, find the value of $\lim_{x \rightarrow 0} \sqrt{x^3 + x^2} \sin \left( \frac{\pi}{x} \right)$ .
10.	Find the numbers that at which $f$ is discontinuous, At which of these numbers if $f$ continuous from the

	right from the left or neither? When $f(x) = \begin{cases} x + 2, & x < 0 \\ e^x, & 0 \leq x \leq 1 \\ 2 - x, & x > 1 \end{cases}$
11.	Where the function $f(x) = \frac{\log x + \tan^{-1} x}{x^2 - 1}$ continuous?
12.	The gravitational force exerted by the planet. Earth on a unit mass at a distance $r$ from the center of the planet is $F(r) = \begin{cases} \frac{GMr}{R^3} & \text{if } r < R, \text{ i.e., } R > r \\ \frac{Gm}{r^2} & \text{if } r \geq R, \text{ i.e., } R \leq r \end{cases}$
13.	Prove that $f$ is continuous at $a$ if and only if $\lim_{h \rightarrow 0} f(a + h) = f(a)$ .
14.	Prove that cosine is a continuous function.
15.	Explain the function is continuous at every number in its domain. State the domain $M(x) = \sqrt{1 + \frac{1}{x}}$
16.	Suppose that a ball is dropped from the upper observation deck of the CN tower, 450 m above the ground. (a) What is the velocity of the ball after 5 seconds? (b) How fast is the ball travelling when it hits the ground.
17.	If a rock is thrown upward on the planet Mars with a velocity of 10m/s, its height after $t$ seconds is given by $H = 10t - 1.86t^2$ (a) Find the velocity of the rock after one second. (b) Find the velocity of the rock after when $t = a$ . (c) When will the rock hit the surface? (d) With what velocity will the rock hit the surface?
18.	The displacement of a particle moving in a straight line is given by the equation of motion $s = \frac{1}{t^2}$ , where $t$ is measured in seconds. Find the velocity of the particle at times $t = a, t = 1, t = 2$ and $t = 3$ .
19.	A particle moves along a straight line with equation of motion $s = f(t)$ , where $s$ is measured in meters and $t$ in seconds. Find the velocity and the speed when $t = 5$ .
20.	The displacement of a particle moving in a straight line is given by $s = t^2 - 8t + 18$ , Where $t$ is measured in seconds. (a) Find the average velocity over each time interval. (b) Find the instantaneous velocity when $t = 4$
21.	Let $f(x) = \begin{cases} x^2 & \text{if } x \leq 2 \\ mx + b & \text{if } x > 2 \end{cases}$ Find the values of $m$ and $b$ that make $f$ differentiable everywhere.
22.	Find an equation of the tangent line and normal line to the given curve at the specified point $f(x) = 2xe^x, (0,0)$
23.	Find the derivative $y = \cos\left(\frac{1 - e^{2x}}{1 + e^{2x}}\right)$ .
24.	Find all points on the graph of the function $f(x) = 2\sin x + \sin^2 x$ at which the tangent line is horizontal.
25.	Find the 1000 <sup>th</sup> derivative of $f(x) = xe^{-x}$ .
26.	If $e^{\frac{x}{y}} = x - y$ , the find $\frac{dy}{dx}$ .

27.	If $x^3 + y^3 = 16$ find the value of $\frac{d^2y}{dx^2}$ at (2,2)
28.	If $y = (\cot x)^{\sin x} + (\tan x)^{\cos x}$ , then find $\frac{dy}{dx}$ .
29.	Find a cubic function $f(x) = ax^3 + bx^2 + cx + d$ that has a local maximum value of 3 at $x = -2$ and a local minimum value of 0 at $x = 1$ .
30.	Where the function $f(x) = \frac{\log x + \tan^{-1}x}{x^2 - 1}$ continuous?
31.	The gravitational force exerted by the planet. Earth on a unit mass at a distance $r$ from the center of the planet is $F(r) = \begin{cases} \frac{GMr}{R^3} & \text{if } r < R, \text{ i.e., } R > r \\ \frac{Gm}{r^2} & \text{if } r \geq R, \text{ i.e., } R \leq r \end{cases}$
32.	Prove that $f$ is continuous at $a$ if and only if $\lim_{h \rightarrow 0} f(a + h) = f(a)$ .
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38.	A particle moves along a straight line with equation of motion $s = f(t)$ , where $s$ is measured in meters and $t$ in seconds. Find the velocity and the speed when $t = 5$ .
39.	The displacement of a particle moving in a straight line is given by $s = t^2 - 8t + 18$ , Where $t$ is measured in seconds. (a) Find the average velocity over each time interval. (b) Find the instantaneous velocity when $t = 4$
40.	Let $f(x) = \begin{cases} x^2 & \text{if } x \leq 2 \\ mx + b & \text{if } x > 2 \end{cases}$ Find the values of $m$ and $b$ that make $f$ differentiable everywhere.
41.	Find an equation of the tangent line and normal line to the given curve at the specified point $f(x) = 2xe^x, (0,0)$
42.	Find the derivative $y = \cos\left(\frac{1-e^{2x}}{1+e^{2x}}\right)$ .
43.	Find all points on the graph of the function $f(x) = 2\sin x + \sin^2 x$ at which the tangent line is horizontal.

44.	Find the 1000 <sup>th</sup> derivative of $f(x) = xe^{-x}$ .
45.	Show that $\frac{\partial^2 g}{\partial x^2} + \frac{\partial^2 g}{\partial y^2} = 4(x^2 + y^2) \left[ \frac{\partial^2 \varphi}{\partial u^2} + \frac{\partial^2 \varphi}{\partial v^2} \right]$ if $g(x, y) = \varphi(u, v)$ where $u = x^2 - y^2$ and $v = 2xy$ .
46.	If $u = \log \frac{x^4 + y^4}{x + y}$ , then show that $x \frac{\partial u}{\partial x} + y \frac{\partial u}{\partial y} = 3$
47.	Verify Euler's theorem for $u = e^{\frac{x}{y}} \sin \frac{x}{y} + e^{\frac{y}{x}} \cos \frac{y}{x}$
48.	Examine the Jacobian $\frac{\partial(x, y, z)}{\partial(r, \theta, \varphi)}$ of the transformation $x = r \sin \theta \cos \varphi, y = r \sin \theta \sin \varphi, z = r \cos \theta$ .
49.	Given the transformation $u = e^x \cos y$ and $v = e^x \sin y$ and that $\varphi$ is a function of $u$ and $v$ and also of $x$ and $y$ , prove that $\frac{\partial^2 \varphi}{\partial x^2} + \frac{\partial^2 \varphi}{\partial y^2} = (u^2 + v^2) \left( \frac{\partial^2 \varphi}{\partial u^2} + \frac{\partial^2 \varphi}{\partial v^2} \right)$
50.	If $u = f(x, y)$ where $x = e^r \cos \theta, y = e^r \sin \theta$ , show that $x \frac{\partial u}{\partial \theta} + y \frac{\partial u}{\partial r} = e^{2r} \frac{\partial u}{\partial y}$ .
51.	Discuss the maxima and minima of the function $f(x, y) = x^3 + y^3 - 3axy$

### Physics for Information science

Sl. No.	Assignment Questions
1	Give some Elasticity based materials
2	Explain in detail the tensile test of materials
3	Torsion pendulum in real life applications
4	Give uses of cantilever in industry
5	Live examples of I shaped girders.
6	Give applications of ferrous alloy
7	Applications of simple harmonic motion.
8	Classify oscillatory motions
9	Applications of Plane progressive waves
10	Give applications of semiconductors in industries
11	Explain the construction and working of Ruby laser

12	Explain the construction and working of Ruby laser
13	Explain the construction and working of He - Ne laser
14	Explain the construction and working of Co <sub>2</sub> laser
15	Give practical applications of total internal reflection.
16	Summarize the applications of laser in medical and military
17	Describe diamond structure.
18	What are the applications of homojunction and heterojunction in real life
19	Discuss in detail the types of Hologram
20	Give the types of water heater.
21	Bimetallic strips applications engineering industry.
22	Describe the Sliver and Carbon Structures? What type of bond is present in carbon?
23	Discuss different types of Allotropy of carbons.
24	Discuss black body radiation
25	Give relevant examples of black body radiation.
26	Discuss phosphoresce materials in optics
27	What are the applications of Multi meter
28	Density of states in metals – give its importance.
29	What are the factors affecting acoustical auditorium.?
30	What is meant by crystallography?
31	Give slow evaporation method in crystals
32	Summarize any two crystal growth techniques.
33	Give applications of Schrödinger wave equation.
34	Distiguish particle in one dimensional box from three dimensional box.
35	New Engineering materials

36	Discuss metallic glasses.
37	What is meant by ceramic materials ,give examples.
38	Discuss screw and edge dislocation.
39	Carbon nano tubes – give short notes.
40	What is meant by graphite sheets.
41	Discuss electron microscope.
42	Classify the endoscopes in medical field.
43	Distinguish plastic materials.and elastic materials
44	Describe GMR and it uses
45	Explain the constuction , working, applications, advantages and disadvantages of Scanning electron microscope
46	Explain the constuction , working, applications, advantages and disadvantages of Transmission electron microscope
47	Expression for Partical in a 3 diamentional Box
48	Moving Coil Galvanometer - Explain its constuction and working
49	What are the Uses of laser technology
50	Describe the properties of laser beam
51	Expression for Carrier concentrations of Intrinsic semiconductor
52	Expression for Carrier concentrations of n type semiconductor
53	Properties of matter and its classifications
54	Fundamentals of crystals
55	Give different types of crystal growth techniques
56	Give types of ceramic materials

Programming in C:

<b>Sl. No.</b>	<b>Assignment questions</b>
1	C Program to Multiply two Floating Point Numbers
2	C Program to Find ASCII Value of a Character
3	C Program to Compute Quotient and Remainder
4	C Program to Find the Size of int, float, double and char
5	C Program to Demonstrate the Working of Keyword long
6	C Program to Swap Two Numbers
7	C Program to Check Whether a Number is Even or Odd
8	C Program to Check Whether a Character is Vowel or Consonant
9	C Program to Find the Largest Number Among Three Numbers
10	C Program to Find all Roots of a Quadratic Equation
11	C Program to Check Leap Year
12	C Program to Check Whether a Number is Positive or Negative
13	C Program to Check Whether a Character is an Alphabet or not
14	C Program to Calculate the Sum of Natural Numbers
15	C Program to Find Factorial of a Number
16	C Program to Generate Multiplication Table
17	C Program to Display Fibonacci Sequence
18	C Program to Find GCD of two Numbers
19	C Program to Find LCM of two Numbers
20	C Program to Display Characters from A to Z Using Loop
21	C Program to Count Number of Digits in an Integer
22	C Program to Reverse a Number

23	C Program to Calculate the Power of a Number
24	C Program to Check Whether a Number is Palindrome or Not
25	C Program to Check Whether a Number is Prime or Not
26	C Program to Display Prime Numbers Between Two Intervals
27	C Program to Check Armstrong Number
28	C Program to Display Armstrong Number Between Two Intervals
29	C Program to Display Factors of a Number
30	C Programming Code To Create Pyramid and Structure
31	C Program to Make a Simple Calculator Using switch...case
32	C Program to Display Prime Numbers Between Intervals Using Function
33	C Program to Check Prime or Armstrong Number Using User-defined Function
34	C Program to Check Whether a Number can be Expressed as Sum of Two Prime Numbers
35	C Program to Find the Sum of Natural Numbers using Recursion
36	C Program to Find Factorial of a Number Using Recursion
37	C Program to Find G.C.D Using Recursion
38	C Program to Convert Binary Number to Decimal and vice-versa
39	C Program to Convert Octal Number to Decimal and vice-versa
40	C Program to Convert Binary Number to Octal and vice-versa
41	C program to Reverse a Sentence Using Recursion
42	C program to calculate the power using recursion
43	C Program to Calculate Average Using Arrays
44	C Program to Find Largest Element of an Array
45	C Program to Calculate Standard Deviation
46	C Program to Add Two Matrix Using Multi-dimensional Arrays
47	C Program to Multiply to Matrix Using Multi-dimensional Arrays

48	C Program to Find Transpose of a Matrix
49	C Program to Multiply two Matrices by Passing Matrix to a Function
50	C Program to Access Elements of an Array Using Pointer
51	C Program Swap Numbers in Cyclic Order Using Call by Reference
52	C Program to Find Largest Number Using Dynamic Memory Allocation
53	C Program to Find the Frequency of Characters in a String
54	C Program to Count the Number of Vowels, Consonants and so on
55	C Program to Remove all Characters in a String Except Alphabet
56	C Program to Find the Length of a String
57	C Program to Concatenate Two Strings
58	C Program to Copy String Without Using strcpy()
59	C Program to Sort Elements in Lexicographical Order (Dictionary Order)
60	C Program to Store Information of a Student Using Structure

### Information Technology Essentials:

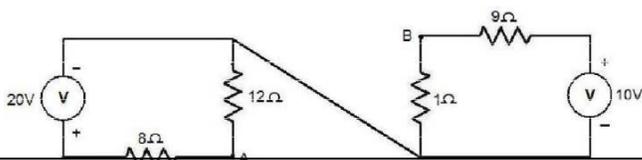
Sl. No.	Assignment Questions
1.	Design a Interactive website for library management system
2.	
3.	
4.	
5.	Design a Interactive website for passport automation system
6.	
7.	
8.	
9.	Design a Interactive website for Book bank system
10.	
11.	
12.	

13.	Design a Interactive website for exam registration system
14.	
15.	
16.	
17.	Design a Interactive website for stock maintenance system
18.	
19.	
20.	
21.	Design a Interactive website for online course reservation system
22.	
23.	
24.	
25.	Design a Interactive website for E-Ticketing system
26.	
27.	
28.	
29.	Design a Interactive website for Employee management system
30.	
31.	
32.	
33.	Design a Interactive website for Credit card processing
34.	
35.	
36.	
37.	Design a Interactive website for e-book management system
38.	
39.	
40.	
41.	Design a Interactive website for Foreign trading system
42.	
43.	
44.	
45.	Design a Interactive website for Student Information System
46.	
47.	
48.	
49.	Design a Interactive website for Online medical billing system

50.	Design a Interactive website for Retail management system
51.	
52.	
53.	
54.	
55.	
56.	Design a Interactive website for Blood bank management system
57.	
58.	
59.	

**BEEE:**

S.No.	Assignment Question
1.	<p>1. Find the nodal voltages in the circuit of figure.</p>
2.	<p>1. Find the equivalent resistance between B and C.</p>
3.	Explain in detail about the Millman's Theorem.
4.	Derive expressions for star connected arms in terms of delta connected arms and delta connected arms in terms of star connected arms.

5.	<p>Determine Thevenin's equivalent across the terminals AB for the circuit shown in figure below.</p> 
6.	Explain the fundamental tie-set matrix
7.	Discuss the concept of network synthesis.
8.	Elucidate the cooling methods used in transformer in various industries
9.	Discuss how to reduce various losses in transformer.
10.	Make clear the working of non linear machines with neat diagram.
11.	Explain the construction and principle of working of a universal motor and mention its applications.
12.	Explain the principle of operation and constructional details of linear synchronous motor
13.	Explain the details about DC servo motor and mention its applications
14.	Discuss the working of universal motor
15.	Explain the working of Switched reluctance motor.
16.	Convert 2 winding transformer into 3 winding transformer.
17.	Enlighten about B-H curve and discuss the practical use of B-H curve
18.	Why break test on D.C motor is not preferable and mention the advantage and disadvantage of break test.
19.	Explain in detail about the 3 phase transformer.
20.	Discuss what happen when we apply D.C supply to Transformer.
21.	Discuss if it is possible to use motor as a generator.
22.	Explain in detail the calibration of energy meter
23.	Explain the working of step-up and step-down transformer
24.	What are the methods to eliminate a ground loop.
25.	Explain about LED diodes.
26.	Discuss the working of LVDT.
27.	Energy conservation act 2001 and its features
28.	Indian energy scenario
29.	Energy needs for growing economy
30.	Digitalization of electric locomotives
31.	Types of battery used for traction system
32.	Solar generation in Tamilnadu- A Statistical approach
33.	Gas tungsten and arc welding industry used for automotive industries
34.	Electric traction around the world
35.	Power Quality and its effects on conservation
36.	Generation of electrical power by Geo thermal
37.	Explain the CMOS Fabrication with diagram
38.	Explain the Integration of Inductors
39.	Explain the Voltage Follower application of OP-AMP
40.	Discuss the Full Wave Rectifier with neat diagram
41.	Discuss the Half Wave Rectifier with neat diagram
42.	Explain the Sine wave Generator with equation and neat diagram

43.	Discuss the Zero Crossing detectors.
44.	Explain the operation of crystal oscillator with neat circuit diagram and write the expression of its frequency of oscillations.
45.	Draw the circuit diagram and explain the principle of operation of Colpitts oscillator.
46.	Discuss the V/F Converter with equation and diagram
47.	Draw a differential amplifier and its ac equivalent circuit. Derive for $A_d$ and $A_c$ .
48.	Derive the expression for the voltage gain of CS amplifier.
49.	Explain the LC Oscillator with equation and diagram.
50.	Arc furnace used in steel and rolling mill
51.	Generation of electrical power by tidal.
52.	Challenges of Wind power Generation
53.	Draw and explain the operation of a Hartley oscillator
54.	With a neat diagram, explain the construction and working of RC phase shift oscillator.
55.	Explain the Double tuned circuits.
56.	Explain the details about DC servo motor and mention its applications
57.	Discuss the working of universal motor
58.	Explain the working of Switched reluctance motor.
59.	Generation of electrical power by tidal.
60.	Challenges of Wind power Generation