VALLIAMMAI ENGINEERING COLLEGE

SRM Nagar, Kattankulathur -603203.

DEPARTMENT OF GENERAL ENGINEERING

QUESTION BANK

II SEMESTER

BE8251 – Basic Electrical and Electronics Engineering

Regulation – 2017

Academic Year 2017 – 18

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SUBJECT : BE8251 /Basic Electrical & Electronics Engineering

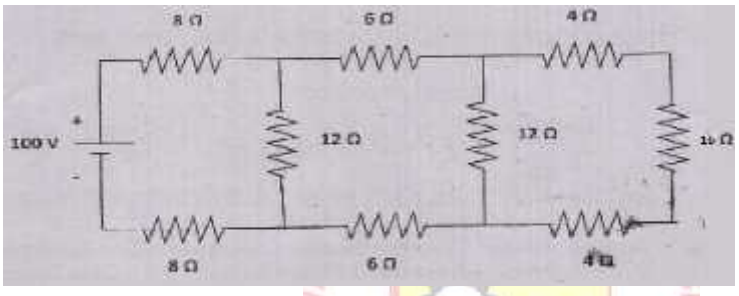
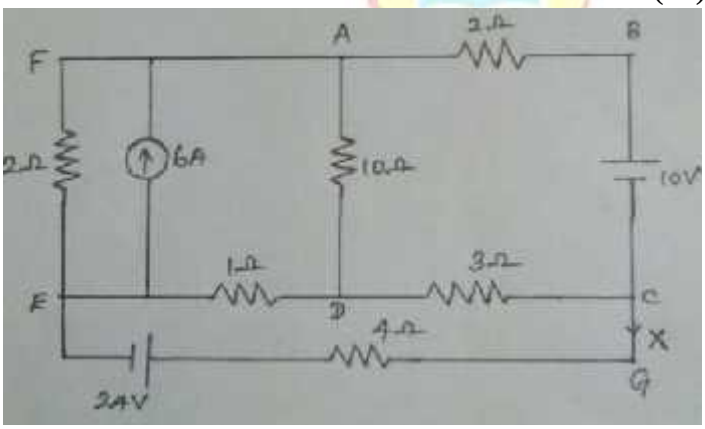
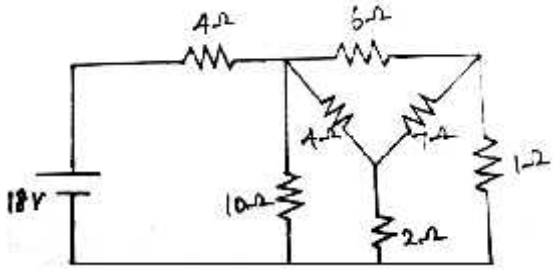
SEM / YEAR: II / 2017-2018 (EVEN)

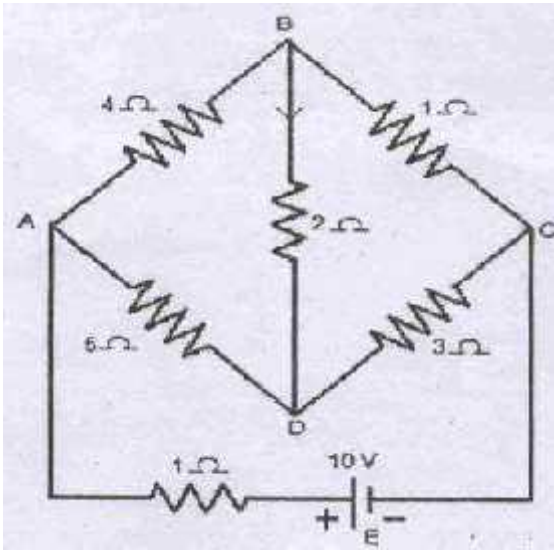
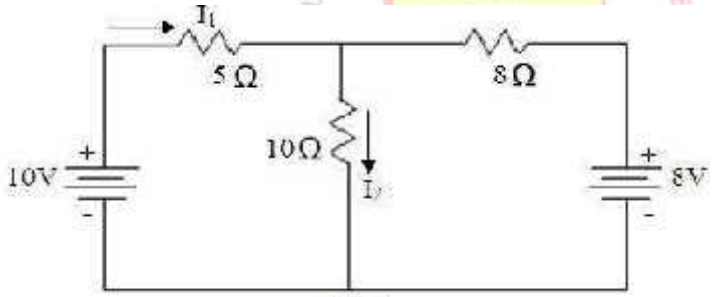
UNIT I - ELECTRICAL CIRCUITS & MEASUREMENTS

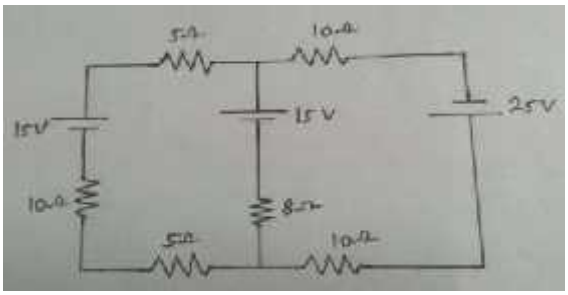
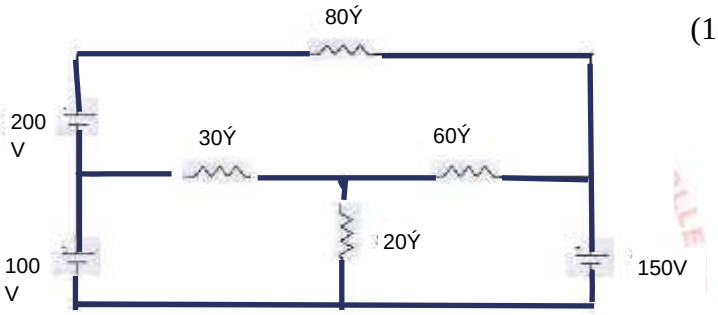
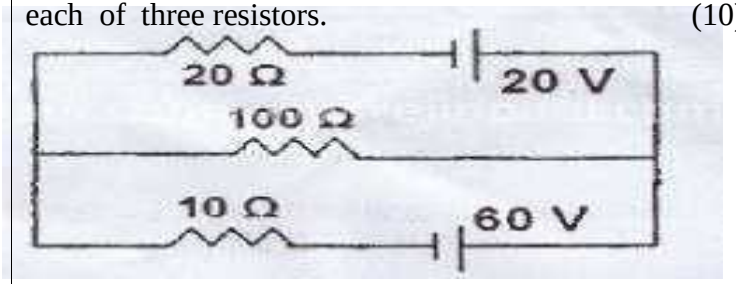
Fundamental laws of electric circuits– Steady State Solution of DC Circuits – Introduction to AC Circuits –Sinusoidal steady state analysis– Power and Power factor – Single Phase and Three Phase Balanced Circuits. Classification of instruments – Operating Principles of indicating Instruments.

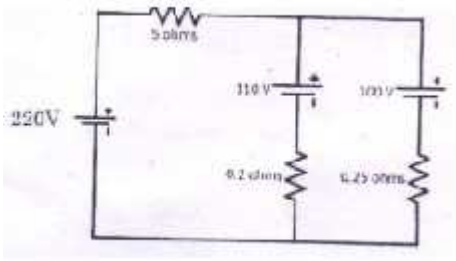
PART – A

Q.No	Questions	BT Level	Competence
1.	Illustrate Ohm's law.	BTL 3	Apply
2.	Illustrate Kirchoff's laws.	BTL 3	Apply
3.	Define the following terms Active & Passive elements with suitable example for each.	BTL 1	Remember
4.	Distinguish Loop and Mesh analysis.	BTL 2	Understand
5.	Two resistances of 4Ω and 6Ω are connected in parallel across 10V battery. Calculate the current through 6Ω resistance.	BTL 3	Apply
6.	When a resistor is placed across the 415V supply, the current is 36A. What is the value of resistor that must be placed in parallel to increase the load to 40A?	BTL 1	Remember
7.	Define (i) Average value (ii) Effective (or) RMS value of an AC voltage signal.	BTL 1	Remember
8.	Express the following terms (i) Amplitude (ii) Phase angle with suitable expression.	BTL 2	Understand
9.	Define the terms (i) Form Factor (ii) Peak Factor.	BTL 1	Remember
10.	Explain current division rule and voltage division rule.	BTL 4	Analyze
11.	Explain the terms power and energy. And also write the expression for electrical power and energy.	BTL 4	Analyze
12.	Define (i) Apparent Power (ii) power factor.	BTL 1	Remember
13.	Explain the following terms Real (or) True (or) Average Power, Reactive Power and Apparent (or) Total Power.	BTL 4	Analyze
14.	Summarize the advantages of 3 phase circuits over single phase circuits.	BTL 5	Evaluate

15.	Compose the circuit diagram and explain the balanced load in 3-phase circuit.	BTL 6	Create
16.	Explain the term resonance in a RLC series circuit.	BTL 5	Evaluate
17.	Formulate the formula for deflecting and controlling torque for PMMC and PMMI instrument.	BTL 6	Create
18.	Discuss the different types of damping force act on the ammeter and voltmeter.	BTL 2	Understand
19.	List out the advantages of electro-mechanical measuring instruments.	BTL 1	Remember
20.	Discuss the three torques required for the proper operation of indicating instrument.	BTL 2	Understand
	PART – B		
1.	Calculate (i) equivalent resistance across the terminal of the supply (ii) total current supplied by the source (iii) power delivered to 16Ω resistor in the circuit shown below: (16) 	BTL 4	Analyze
2.	Determine the current 'X', power in the 4Ω resistance of the circuit shown below: (16) 	BTL 4	Analyze
3.	Describe kirchhoff's laws. For the circuit shown in the figure determine the current through 6Ω resistor. (16) 	BTL 4	Analyze

4.	In the circuit shown, Calculate the current through 2 ohm resistor and the total current delivered by the battery. Use Kirchhoff's laws. (16) 	BTL 3	Apply
5.	(a) Fig.1 shows a two D.C source network, the branch current I_1 and I_2 are marked in it. By using kirchhoff's law,calculate and examine the current I_1. (8)  Fig.1 (b) A series circuit has R=10Ω, L=50mH and C=100μF and is supplied and is applied with 200V, 50 Hz. Find and examine the value of: (1) Impedance (2) Current (3) Power (4) Power factor (5) Phase angle (6) Voltage drop across the each element. (8)	BTL 1 BTL 1	Remember

6.	(i) Explain Kirchhoff's Current and Voltage Law. (2) (ii) A sinusoidal current wave is given by i=50 sin(100πt). Solve and calculate the root mean square value. (4) (iii)Calculate the current in the 8Ω resistor in the following circuit using Kirchhoff's laws. (10) 	BTL 4 BTL 3	Analyze Apply
7.	Using Mesh analysis, Estimate the current through the various branches in the circuit of the following figure. (16) 	BTL 2	Understand
8.	(i) For the circuit shown, calculate the current through each of three resistors. (10)  (ii) A coil of resistance 5.94Ω and inductance of 0.35 H is connected in series with a capacitance of 35 μ F across a 200V, 50Hz supply. Find and examine the value of impedance (Z),current and the phase difference between voltage and current (Φ) (6)	BTL 1 BTL 1	Remember
9.	(i) Describe the working of single phase energy meter with necessary diagram. (8) (ii) Examine and formulate (a) The form factor (b) The peak factor for full wave rectified sine wave. (8)	BTL 1 BTL 1	Remember

10.	a) Two impedances (8+j10) ohm and (7+9j) ohm are connected in parallel. Find magnitude and phase angle of total impedance. Another impedance (5-j2) ohm is connected in series with above combination. Find overall impedance. (8) b) A 3ϕ, 200 kW, 50 Hz delta connected induction motor is supplied from a 3ϕ, 400 V, 50 Hz supply system. The efficiency and power factor of 3ϕ induction motor are 91% and 0.86 respectively. Calculate i) Current in each motor phase (4) ii) Line Current. (4)	BTL 2 BTL 2	Understand
11.	(i) With a neat diagram describe the construction and principle of operation of a moving iron (i) Attraction type instrument (ii) Repulsion type instrument. (10) (ii) Three inductive coils, each with a resistance of 15Ω and an inductance of 0.03H are connected in star to a three phase 400V, 50Hz supply. Express the value of phase current, line current and power absorbed. (6)	BTL 2 BTL 2	Understand
12.	With neat sketch describe the construction and principle of operation of (i) Permanent Magnet Moving Coil (PMMC) type of instrument. Obtain the expression for its deflecting torque. List the merits and demerits of PMMC Instrument. (16)	BTL 6	Create
13.	(a) (i) For the given circuit, calculate the magnitude and direction of current in each battery and total current taken from the 220V supply mains. (12)  (ii) A coil takes the current of 6A when connected to a 24V DC supply. To obtain the same current with a 50Hz AC supply the voltage required is 30V. Calculate (a) The inductance of the coil (2) (b) The power factor of the coil (2)	BTL 1	Remember
14.	With neat sketch and explain the constrution and working principle of Dynamometer type watt meter . Mention its merits and demerits. (12+4)	BTL 5	Evaluate

UNIT II - ELECTRICAL MECHANICS

Construction, Principle of Operation, Basic Equations and Applications of DC Generators, DC Motors, Single Phase Transformer, Single phase induction Motor.

PART – A

Q.No	Questions	BT Level	Competence
1.	List any two applications of Following DC Motors (i) DC Series Motor (ii) DC Shunt Motor.	BTL 1	Remember
2.	Define critical speed and critical resistance of a DC generator.	BTL 1	Remember
3.	Distinguish the difference between DC Motor and DC Generator.	BTL 2	Understand
4.	Explain the principle of DC Motor.	BTL 4	Analyze
5.	Define the term back EMF or Counter EMF and state its significance.	BTL 1	Remember
6.	List the different main constructional elements of DC Machine.	BTL 1	Remember
7.	Define the following terms in DC Machine (i) Commutator (ii) Brushes	BTL 1	Remember
8.	In DC Generator, 8 poles, lap wound armature rotated at 350rpm to generate 260V, the useful flux/pole is 0.05Wb. If the armature has 120 slots. Calculate the number of conductors per slot.	BTL 3	Apply
9.	Explain why DC series motor should not be started without load.	BTL 2	Understand
10.	List any two applications of Following DC Motors (i) DC Cumulative Compound Motor (ii) DC Differential	BTL 1	Remember
11.	Discuss the terms with appropriate formula for Faraday's law of Electromagnetic Induction and Lenz Law.	BTL 2	Understand
12.	Mention few applications of DC Generators.	BTL 2	Understand
13.	With suitable formula explain the following terms (i)Turn ratio of transformer. (ii) Voltage regulation ofTransformer.	BTL 4	Analyze
14.	Explain why single phase induction motor is not self starting?	BTL 4	Analyze
15.	Discuss the terms (i) Efficiency (ii) All day efficiency of single phase transformer.	BTL 6	Create
16	Draw the circuit diagram of single phase transformer.	BTL 3	Apply
17.	What is meant by transformer? Formulate the expression for step up and step down transformer according to transformation ratio.	BTL 6	Create
18.	Compare the following transformers (i) Core type	BTL 5	Evaluate

19.	Formulate the EMF equation for Transformer.	BTL 3	Apply
20.	In a single phase transformer, N_p= 350 turns, N_s= 1050 turns, E_p= 400V. Calculate the value of secondary voltage(E_s).	BTL 5	Evaluate
	PART – B		
1.	With a neat sketch, explain the construction, working of DC Motor and also explain the different parts. (16)	BTL 4	Analyze
2.	(i) With a neat diagram explain the construction and working of D.C. Generator. (12) (ii) Derive the EMF equation. (4)	BTL 1	Remember
3.	(i) Obtain the mathematical expression for generated EMF or EMF Equation of Generator and explain each term. (8) (ii) Calculate the generated EMF by 4-pole wave wound generator having 65 slots with 12 conductors per slot when driven at 1200 rpm the flux per pole is 0.02Weber. (8)	BTL 4 BTL 3	Analyze Apply
4.	Obtain the mathematical equation for voltage or current equation and also explain for (i) DC Series Generator (ii) DC Shunt Generator (iii) DC Compound Generator with suitable diagram for each. (16)	BTL 5	Evaluate
5.	What is meant by DC Motor? Describe the terms such as (i) Faraday's Law of Electro Magnetic Induction. (ii) Fleming's Left Hand rule.(iii) Back or Counter emf. (iv) Voltage Equation of DC Shunt Motor. (v) Armature Torque of DC Motor. (16)	BTL 4	Analyze
6.	(i) Describe various types of self excited Dc generators with their circuit layout. (8) (ii) Explain the characteristics of DC shunt motor. (8)	BTL 1	Remember
7.	(i) A 200V Dc shunt motor takes a total current of 100A and runs at 750 rpm. The resistance of the armature winding and of shunt field winding is0.1 Ω and 40Ω respectively. Find the torque developed by the armature. (8) (ii) Explain the basic nature of the emf induced in the armature of a DC machine. (4) (iii)How can the alternating current waveform in the armature be converted into a DC waveform? (4)	BTL 3 BTL 2 BTL 2	Apply Understand Understand
8.	A 25kW, 250V, dc shunt generator has armature and field resistances of 0.06 ohm and 100 ohm respectively. Determine the total armature power developed when working (i) as a generator delivering 25 kW output and (ii) as a motor taking 25kW. (16)	BTL 3	Apply
9.	What is meant by Transformer? Draw the circuit diagram for Single Phase Transformer and also explain the Principle, Construction, Working of it. (16)	BTL 4	Analyze

10.	(i) Derive the EMF Equation of Transformer. (8) (ii) A single phase 2000/250 V, 50Hz transformer has the core area of 36 cm^2 and maximum flux density of 6Wb/m^2. Calculate the number of turns on primary and secondary winding. (8)	BTL 6	Create
11.	Describe the following terms in single phase transformer (i) Efficiency (ii) All day efficiency (iii) Losses in transformer (iv) Regulation of Transformer. (16)	BTL 1	Remember
12.	(i) Distinguish the following types of transformer (i) Step up and Step down Transformer (ii) Core type or Shell type Transformer. (8) (ii) In core type transformer, the no load voltage is 5000/250 V, supply frequency 50Hz .Calculate the number of turns in each winding and the flux is about 0.06 Weber. (8)	BTL 2 BTL 3	Understand Apply
13.	(i) Why do you say the single phase Induction motor is self starting? (8) (ii) Describe the following types of Single phase Induction Motor (i) Split phase Induction Motor (ii) Capacitor start type Induction Motor (iii) Shaded pole type Induction Motor. (8)	BTL 2 BTL 2	Understand Understand
14.	Explain the tests on single phase transformer and develop an equivalent circuit from the above tests. (16)	BTL 1	Remember

UNIT III - SEMICONDUCTOR DEVICES AND APPLICATIONS

Characteristics of PN Junction Diode – Zener Effect – Zener Diode and its Characteristics – Half wave and Full wave Rectifiers – Voltage Regulation. Bipolar Junction Transistor – CB, CE, CC Configurations and Characteristics – Elementary Treatment of Small Signal Amplifier.

PART – A

Q.No	Questions	BT Level	Competence
1.	What is meant by Semiconductors? Also explain (i) n-type Semiconductor (ii) p-type semiconductor.	BTL 4	Analyze
2.	Distinguish the following semiconductors (i) Intrinsic or pure Semi Conductor (ii) Extrinsic or impure Semi conductor.	BTL 2	Understand
3.	Compare PN junction diode and Zener diode with symbolic representation.	BTL 4	Analyze
4.	Draw the V-I characteristics of PN-Junction diode.	BTL 3	Apply
5.	Draw the structure with symbolic representation of NPN and PNP Transistor.	BTL 3	Apply
6.	Define Knee voltage or Junction barrier voltage for PN Junction.	BTL 2	Understand
7.	Draw the circuit for (i) Forward Bias (ii) Reverse Bias of the PN Junction diode.	BTL 3	Apply
8.	Explain the following terms (i) Avalanche breakdown (ii) Zener break down of the PN junction diode.	BTL 4	Analyze
9.	Define the following terms (i) Rectifier and its types (ii) Voltage Regulation.	BTL 1	Remember

10.	What is Zener effect?	BTL 1	Remember
11.	What is doping? Also express the terms (i) Donor (ii) Acceptor.	BTL 1	Remember
12.	What is Zener diode? List its applications.	BTL 1	Remember
13.	What do you mean by biasing?	BTL 6	Create
14.	Which configuration is known as emitter follower and why it is named so?	BTL 6	Create
15.	What is meant by Diffusion and Depletion layer?	BTL 5	Evaluate
16.	Define the terms (i) Saturation region (ii) Cut off region (iii) Break down region of a transistor in CE Configuration.	BTL 2	Understand
17.	Define Forbidden energy gap of semi conductor.	BTL 2	Understand
18.	Define Transformer Utilization Factor.	BTL 1	Remember
19.	Define α and β.	BTL 5	Evaluate
20.	Define the term Peak Inverse Voltage.	BTL 1	Remember
	PART – B		
1.	Describe the following VI Characteristics of a PN Junction diode. (i) Forward Bias Characteristics (ii) Reverse Bias Characteristics. Also write its applications. (16)	BTL 1	Remember
2.	Describe the working principle of Zener diode. And explain the terms (i) Zener Break down (ii) Avalanche Break down. (16)	BTL 1	Remember
3.	(i) Explain the working of PN junction diode and mention its applications. (8) (ii) Draw the circuit diagram for full wave rectifier and explain its working. (8)	BTL 4	Analyze
4.	With a neat diagram explain the principle of operation, working of Full wave rectifier. And also obtain the expression for (i) RMS value of Current (ii) RMS value of Voltage (iii) Peak Inverse Voltage (PIV) (iv) Transformer Utilization Factor (TUF) (v) Efficiency (vi) Ripple factor. (16)	BTL 4	Analyze
5.	(i) Explain the working of CB Configuration of NPN transistor. Also obtain the input output characteristics. (8) (ii) Explain the working of CE Configuration of NPN Transistor. Also obtain the (a) input-Characteristics (b) Output characteristics. (8)	BTL 4 BTL 4	Analyze Analyze

6.	Explain the performance of the transistor in three different types of configurations. (16)	BTL 3	Apply
7.	(i) With a neat diagram describe how a voltage regulator circuits ates the output voltage under the following conditions: (a) Load resistance increases. (b) Input voltage decreases. (8) (ii) Explain the working of CC configuration of NPN transistor. And also obtain the input characteristics and Output characteristics. (8)	BTL 2 BTL 2	Understand Understand
8.	Explain the term Bridge rectifier with suitable circuit diagram and formulate its efficiency, ripple factor, TUF and PIV. (16)	BTL 3	Apply
9.	(i) Explain the elementary treatment of small signal amplifier with proper design circuit. (8) (ii) With a neat diagram describe the construction and working principle of PN Junction diode. (8)	BTL 2 BTL 2	Understand Understand
10.	(i) Explain with neat diagram the construction and operation of a PNP transistor. (8) (ii) In a CE transistor, I_B changes from 100µ A to 150µ A which causes a change in I_c from 5mA to 7.5mA. If V_{CE} is held constant at 10V, find $ß_{dc}(h_{fe})$. (8)	BTL 5 BTL 5	Evaluate Evaluate
11.	(i) Explain V-I characteristics of Zener diode and applications with necessary diagram. (8) (ii) Explain the operation of Full wave rectifier with necessary diagrams. (8)	BTL 2 BTL 2	Understand Understand
12.	For the CE transistor configuration , draw the circuit and explain the input and output characteristics. (16)	BTL 6	Create
13.	Explain the working principle of half wave and full wave rectifier with neat waveform. (16)	BTL 1	Remember
14.	Explain the various characteristics of BJT in common emitter configuration with neat diagram. (16)	BTL 1	Remember

UNIT IV DIGITAL ELECTRONICS

Binary Number System – Boolean Algebra theorems– Digital circuits - Introduction to sequential Circuits– Flip-Flops – Registers and Counters – A/D and D/A Conversion –digital processing architecture.

PART – A

Q.No	Questions	BT Level	Competence
1.	Define Flip flop. What are the different types of flip flop?	BTL 1	Remember
2.	Which gates are called as Universal gates? What are its advantages?	BTL 1	Remember
3.	Name two types of D/ A & A/D converter.	BTL 1	Remember
4.	What is a decade counter?	BTL 1	Remember
5.	What are the basic properties of Boolean algebra?	BTL 1	Remember

6.	State and prove Distributive law.	BTL 1	Remember
7.	Demonstrate the given binary numbers in its equivalent decimal numbers with steps. (i) 10.01 (ii) 101.11	BTL 2	Understand
8.	Illustrate the excitation table of J-K flip flop.	BTL 2	Understand
9.	Give the truth table of XOR gate.	BTL 2	Understand
10.	Show the logic diagram and truth table for a half adder.	BTL 2	Understand
11.	Solve for the following binary difference: 1011010-0101110	BTL 3	Apply
12.	Identify the decimal equivalent of binary fraction 0.101	BTL 3	Apply
13.	Construct D Flip-flop from JK flip-flop.	BTL 3	Apply
14.	Distinguish between combinational logic and sequential logic.	BTL 4	Analyze
15.	Compare asynchronous and synchronous counters.	BTL 4	Analyze
16.	Construct AND and OR gates using NAND gates.	BTL 4	Analyze
17.	Prove that A + A'B = A+B	BTL 5	Evaluate
18.	Convert $(777)_8$ to decimal.	BTL 5	Evaluate
19.	State De Morgan's theorems.	BTL 6	Create
20.	Design ' D' Latch using NAND gates.	BTL 6	Create
	PART – B		
1.	(i) Prove the Boolean identity AB+AB'+A'B=A+B. (4) (ii) Explain the working of JK and D flip flops. (12)	BTL 1	Remember
2.	Write short notes on the following flip flops: a) RS- Flip flop. (8) b) Toggle flips flop. (8)	BTL 1	Remember
3.	Find the solution of following number conversion: (i) $(96.0625)_{10}$ =(?) $_2$ (4) (ii) $(34.67)_{10}$ =(?) $_8$ (4) (iii) $(1101110.110)_2$ =(?) $_{16}$ (4) (iv)$(257)_{10}$ =(?)$_2$ (4)	BTL 1	Remember
4.	(i) How can you implement XOR gate using NAND gates. (6) (ii) Show the operation of 4-bit synchronous UP counter with its timing diagram and its design. (10)	BTL 1	Remember
5.	Demonstrate the different states of SR flip flop for various input with logic diagram. Show its characteristics table (16)	BTL 2	Understand
6.	Demonstrate various Boolean laws with its truth table (16)	BTL 2	Understand

7.	(i) Draw the logic diagram of clocked Master – slave JK flip flop and explain its working. (8) (ii) Show how a full adder can be implemented using NAND gate. (8)	BTL 2	Understand
8.	Explain about digital processing architecture. (16)	BTL 3	Apply
9.	Develop the following flip flops and explain its operations (i) D flip flop using NAND gates. (ii) JK flip flop using NAND gates. (8+8)	BTL 3	Apply
10.	Classify the types of D/A and A/D converters .Also explain the working principle of any one type in each converter. (4+12)	BTL 4	Analyze
11.	With a neat diagram explain the working of 4bit binary ripple counter. (16)	BTL 4	Analyze
12.	Compare the performance features of different types of ADC and DAC. (16)	BTL 4	Analyze
13.	(i) Explain the operation of successive approximation type ADC with a neat sketch. (8) (ii) Draw the circuit of Binary weighted resistor Digital to analog Converter and Explain its operation. (8)	BTL 5	Evaluate
14.	Design a 3 bit asynchronous UP counter. (16)	BTL 6	Create

UNIT V FUNDAMENTALS OF COMMUNICATION ENGINEERING

Introduction – Elements of Communication Systems– Modulation and Demodulation: Principles of Amplitude and Frequency Modulations. Digital Communication - Communication Systems: Radio, Antenna, TV, Fax, ISDN, Microwave, Satellite and Optical Fibre (Block Diagram Approach only).

PART-A

Q.No	Questions	BT Level	Competence
1.	Differentiate analog and digital Signal.	BTL 4	Analyze
2.	Digital signals said to be noise immune. Justify.	BTL 5	Evaluate
3.	Define modulation. What are the different types of modulation?	BTL 1	Remember
4.	Define the Modulation Index for Amplitude modulation	BTL 1	Remember
5.	Mention the limitations of amplitude modulation.	BTL 2	Understand
6.	Express the formula of carrier power of an AM wave.	BTL 2	Understand
7.	Generalize why AM systems are preferred in broadcasting over FM Systems.	BTL 6	Create

8.	As related to amplitude modulation, Illustrate what is under modulation, 100% modulation and over modulation.	BTL 3	Apply
9.	List any four important advantages of FM over AM.	BTL 1	Remember
10.	What is radio communication?	BTL 1	Remember
11.	Classify radio receivers.	BTL 3	Apply
12.	What are the two types of TV?	BTL 4	Analyze
13.	What is facsimile?	BTL 2	Understand
14.	Generalize the applications of Microwave communications	BTL 6	Create
15.	List the various types of microwave antennas	BTL 1	Remember
16.	Explain the basic function of a ISDN.	BTL 4	Analyze
17.	Summarize the functions of a satellite transponder.	BTL 5	Evaluate
18.	Illustrate the advantages of Optical fiber communication.	BTL 3	Apply
19.	Define Total internal reflection.	BTL 2	Understand
20.	Write about the function of Antenna.	BTL 1	Remember
	PART – B		
1.	(i) With a neat diagram, explain the operation of amplitude Modulation. Derive its power relations. (10) (ii) A 10MHz sinusoidal carrier wave of amplitude 10mV is modulated by a 5KHz sinusoidal audio signal wave of amplitude 6mV. Design and find the frequency components of the resultant modulated wave and their amplitudes. (6)	BTL 6	Create
2.	Explain the principles of Amplitude & Frequency Modulation and also its need. (16)	BTL 3	Apply
3.	Discuss any one method for suppressing the unwanted sideband. Support your answer with the required diagrams. (16)	BTL 4	Analyze
4.	(i) Illustrate the block diagram of balanced modulator and explain its operation. (8) (ii) Explain frequency modulation. Obtain the mathematical representation of frequency modulated wave. (8)	BTL 3	Apply
5.	(i) Draw the block diagram arrangement of an AM transmitter and explain its operation. (8) (ii) Explain the operation of FM transmitter. (8)	BTL 4	Analyze
6.	With the help of neat diagram explain about TV transmitter and receiver. (16)	BTL 2	Understand

7.	Show and discuss the block diagram of radio broadcasting and reception system and explain the function of each block. (16)	BTL 4	Analyze
8.	With the help of block digrams describe the working of a typical TV transmitter and receiver. (16)	BTL 1	Remember
9.	(i) With neat block diagram explain the principle of operation of FAX. (8) (ii) Draw a Typical Television video signal. Explain how this is converted to an image on a TV screen. (8)	BTL 2	Understand
10.	Write short notes on the following modes of communication: (i) Microwave (8) (ii)FAX (8)	BTL 1	Remember
11.	Explain the configuration of satellite communication with neat diagram. Give its merits and Demerits. (16)	BTL5	Evaluate
12.	Draw the block diagram and explain the fiber optic communication. Mention its applications. (16)	BTL 1	Remember
13.	With the help of block diagrams describe the working of Antenna. (16)	BTL 2	Understand
14.	What do you mean by ISDN? Explain its working with neat diagram. (16)	BTL 1	Remember