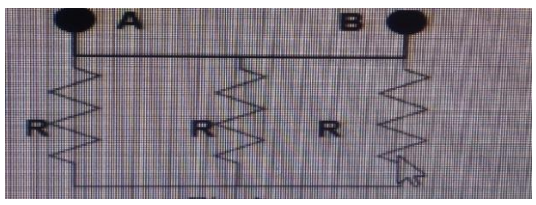
L.J Institute of Engineering and Technology, Ahmedabad.

Fundamental of Electronics and Electrical Engineering (FEE)

Question Bank (SEM-II-2023 CE/IT/CSD/AIML/AIDS/RAI/CS&IT/CSE/CST/CEA Engineering)

Note : This question bank is only for reference purpose. LJU Test question paper may not be completely set from this question bank.

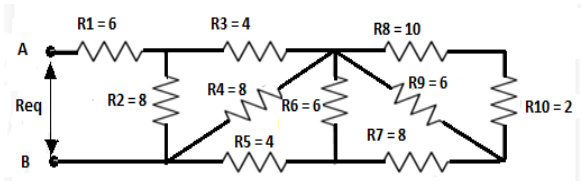
Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
1	1	Which of the following relations is incorrect? Where P= power, V= Voltage, I= current, R=resistance, G=conductance.	C	0.5	$P=(V^2)*G$	V= √P*R	$G=P/(I^2)$	I=√(P/R)
2	1	Ohm's law is not applicable to	C	0.5	ac circuit	dc circuit	semi-conductor	linear circuits
3	1	Which of the following is a vector quantity?	C	1	electric charge	electrical potential	electric field intensity	none of the above
4	1	A kilowatt hour is unit of_____ .	A	0.5	Energy	Power	electric charge	electric current
5	1	Conductivity is analogous to _____.	C	1	Flux	reluctance	permeance	current
6	1	What is equivalent resistance between points A and B in given figure? R is in Ω. 	D	1	3R	(1/3)R	3/R	zero
7	1	Two incandescent light bulbs of 40 W and 60 W rating are connected in series across the supply main. Which of the bulbs will glow brighter?	B	1	60 w	40 w	Both	None
8	1	The unit of current is_____	B	1	Volt/sec	coulomb/sec	amp/sec	none of these
9	1	Unit of potential difference is	D	1	voltamp	watt	ampere	Volt
10	1	An ideal voltage source should have_____.	A	0.5	zero internal resistance	infinite source resistance	large value of e.m.f.	low value of e.m.f.
11	1	A network which does not have either voltage source or current source is called_____.	A	1	Passive network	Active network	Resistive network	none of above
12	1	Classify the controlled source and draw schematics for each.		4				
13	1	Write short note on Current source and Voltage source.		4				
14	1	_____is not an electrical element.	A	1	Tester	Resistor	Inductor	Capacitor
15	1	Pure DC voltage has _____ frequency.	D	1	50 Hz	50 KHz	5 Hz	0 Hz
17	1	The charge on each electron is _____ coulomb.	B	1	1.9 × 10-19	1.6 × 10-19	1.9 × 10-16	1.6× 10-16
18	1	The electrical force or pressure that causes the electrons to move in a particular direction is called as the _____	B	0.5	Magneto motive force	Electromotive force	Electrostatic force	Electromagnetic force
19	1	Multimeter can be used to measure	D	0.5	current	voltage	resistance	all of the above
20	1	Measuring range of voltmeter can be extended by using	B	0.5	high shunt resistance	high series resistance	low shunt resistance	low series resistance
21	1	Ammeter always connected is _____ in a circuit.	B	1	Parallel	series	both (a) & (b)	none of the above
22	1	The resistivity of the conductor depends on _____.	B	1	length of the conductor	type of material	area of the conductor	all of these
23	1	Explain the factors affecting the resistance of a conducting material.		3				
24	1	If the length of conductor is doubled and its cross sectional area is reduced to 50% then its resistance will be_____	C	0.5	Same	doubled	increased by 4 times	reduced to 1/4th
25	1	The resistance of a thin conductor is _____ as compared to that of a thick conductor	C	1	Same	lower	higher	
26	1	The unit of resistivity is	B	1	Ohm / m	Ohm-m	mho/m	mho-m
27	1	The unit of conductivity is	A	0.5	Siemens / m	Siemens-m	mho	mho-m
28	1	Which among the following is true about ohm's law?	C	1	$I \propto V$	I = V/R	V = IR	$V \propto I$
29	1	if absolute potential of A point a is 10 volt and that of point B is -5 volt, VBA will be	B	1	15 volt	(-15) volt	5 volt	(-5) volt
30	1	Discuss ohm's law & its limitations.		3				
31	1	A 100 A current is shared by three resistances connected in parallel. The resistor wires are of the same material and have their length in the ratio 2:3:4 and their cross sectional area in the ratio 1:2:3.Determine the current in each resistor.		4				
32	1	Assuring the resistivity of copper to be 1.7x10-6 ohm.cm . Find the resitance of copper wire of cross section 1 mm2 and length 10 meters. Also state the value of the resistance of copper wire if the cross sectional area s made four times keeping the same volume (1x1000 mm3).		7				
33	1	Two wires of conducting material (different conducting materials) are connected in parallel. They share current in the ratio 5:6. If the wire of material 1 has 1.7 times length & double the cross section area than that of material 2, find the ratio of their specific resistances.		4				
34	1	A 100 V, 100 W lamp is connected in series with aA 100 V, 60 W lamp across 200 V supply. Determine current drawn and power consumed by each lamp.		5				

L.J Institute of Engineering and Technology, Ahmedabad.

Fundamental of Electronics and Electrical Engineering (FEE)

Question Bank (SEM-II-2023 CE/IT/CSD/AIML/AIDS/RAI/CS&IT/CSE/CST/CEA Engineering)

Note : This question bank is only for reference purpose. LJU Test question paper may not be completely set from this question bank.

Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
35	1	Determine equivalent resistance between A & B. (Note:- All Resistors are in Ohm) . 		3				
36	1	Which of the following statements are true with regard to resistance?	A	1	a. Resistance is directly proportional to a length of the wire	b. Resistance is directly proportional to an area of cross-section of the wire	c. Resistance is inversely proportional to the length of the wire	d. Resistance is inversely proportional to the resistivity of the wire
37	1	A 470 Ω resistor, a 220 Ω resistor, and a 100 Ω resistor are all in parallel. The total resistance is approximately	B	1	30	60	70	790
38	1	An aluminum wire 7.5 m long is connected in parallel with a copper wire 6 m long.When a current of 5 A is passed through the combination, it is found that the current in the aluminium wire is 3 A.The diameter of the aluminium wire is 1 mm. Determine the diameter of the copper wire. Resistivity of copper is 0.017μΩm and that of aluminium is 0.028μΩm.		2				
39	1	A 100V, 60W bulb is connected in series with a 100V, 100W bulb and the combination is connected across the 200V mains. Find the values of resistance that should be connected across the first bulb, so that each bulb may get proper current at the proper voltage.		6				
40	1	Differentiate resisitive series and parallel circuit		3				
41	1	Analyze Series and parallel circuit having resistors only as elements and state the results.		4				
42	1	Two resistors are connected in series across battery of voltage V. Find voltage across each resistor in terms of total voltage V.		3				
43	1	Two resistors are connected in parallel across battery of voltage V. Find current through each resistor in terms of total current I.		4				
44	1	Time constant of an R-C ckt. May be defined as	B	1	Time during which capacitor voltage rises to 0.632 of its initial value	Time during which charging current falls to 0.37 of its initial max. value	Time during which capacitor voltage falls to 0.632 of its final steady value	Time during which charging current rises to 0.37 of its initial max. value
45	1	What is the current in the circuit at t = 0 if at t=0, DC voltage 20 V is applied in a series R-C circuit having resistor of 10 ohm and capacitor of 0.1F ?	C	1	0A	1A	2A	3A
46	1	When will be capacitors fully charged?	B	1	When voltage is zero	When the supply voltage is equal to the capacitor voltage.	When voltage is infinity.	When capacitor voltage is equal to half the supply voltage
47	1	Derive the equations of capacitor voltage and circuit current in a series R-C circuit connected to a DC supply through a switch. Assume that switch is initially open and it is closed at time t=0 second.		7				
48	1	Explain charging phenomena of a capacitor with necessary derivation.		6				
49	1	Derive the expression for charging current in a R-C circuit. Hence, define the time constant of RC circuit.		7				
50	1	Derive the equation: Vc=V[1-e-t/RC] for charging of a capacitor.		6				
51	1	Derive equation for charging of capacitor in RC circuit. Also define time constant of circuit.		7				
52	1	Derive expression for voltage across capacitor (VC) during Discharging of capacitor.		7				
53	1	Show that voltage across capacitor increases exponentially during charging process, with necessary derivations		5				
54	1	Elaborate the concept for voltage across capacitor during charging through resistor at any instant $Vc=V[1-e^{-t/RC}]$. Assume that RC series Circuit is connected across a DC supply of voltage V.		5				

L.J Institute of Engineering and Technology, Ahmedabad.

Fundamental of Electronics and Electrical Engineering (FEE)

Question Bank (SEM-II-2023 CE/IT/CSD/AIML/AIDS/RAI/CS&IT/CSE/CST/CEA Engineering)

Note : This question bank is only for reference purpose. LJU Test question paper may not be completely set from this question bank.

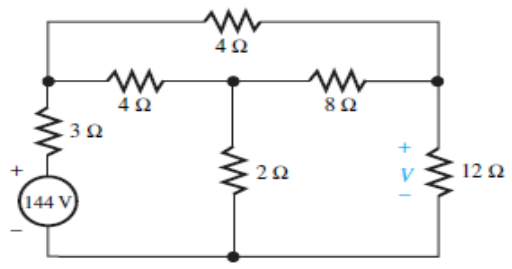
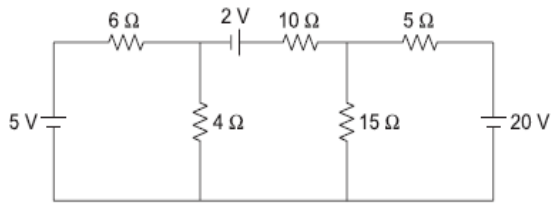
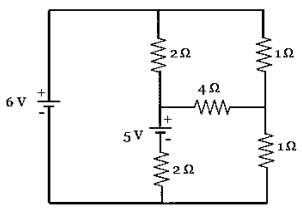
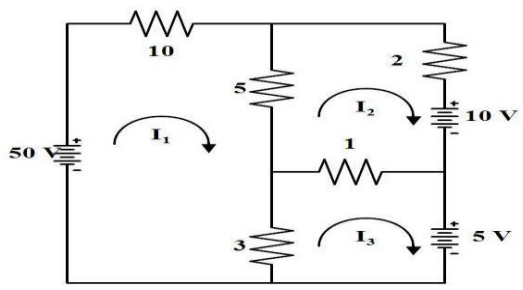
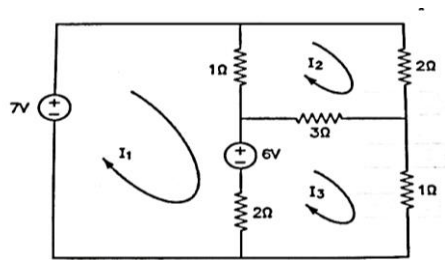
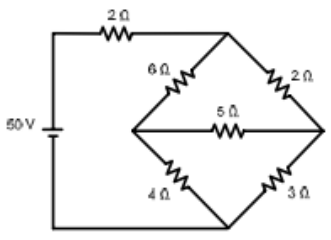
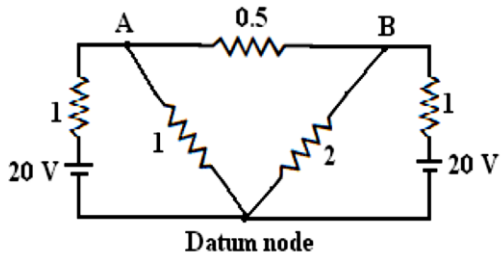
Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
55	1	Consider a circuit consisting of series connected R and C .Derive expression of Capacitors voltage when this combination is connected across battery of V volt.		5				
56	1	Derive the equations for voltage across capacitor (Vc) and circuit current (i) during charging of capacitor in a R-C Circuit having DC supply V & show their behaviors with respect to time during charging of capacitor.		5				
57	1	Derive equation of time domain first order circuit, voltage across capacitor becomes 63.2 % of the supply voltage.		4				
58	1	Derive the equation that represents the variation of capacitor voltage with time when battery is connected.		5				
59	1	Consider a circuit consisting of R and C connected in series. This series combination is connected across D.C. battery of voltage V. Derive the expression capacitor voltage and show that capacitor voltage varies exponentially with time with the help of neat sketch.		5				
60	1	A capacitor of 0.1 µF is charged from a 100 V battery through a series resistance of 1000 Ω. Find[1] Time constant[2] Charge received during this time[3] Initial rate of charging[4] the rate of charging when the charge is 63.2 % of final charge		4				
61	1	A 8 µF capacitor is connected with 0.5 MΩ resistor across a 200 V d.c supply. Calculate (i)thetime constant,(ii)the initial charging current,(iii)time taken for the p.d across the capacitor to grow to 160 V and(iv)the current and voltage across the capacitor in 4second after it is connected to the supply.		6				
62	1	A 10 µF capacitor in series with an 1 MΩ resistor is connected across a 100 V supply. Determine (a)The time constant of the circuit. (b)The initial value of charging current. (c)Initial rate of rise of voltage across the capacitor. (d)The capacitor voltage after a time equal to the time constant. (e)The circuit current at this time. (f)Voltage across the capacitor 3 sec after switch on. (g)The time taken for the capacitor voltage to reach 50V		7				
63	1	Capacitor of 50 µF in series with 100 Ohm resistor with suddenly connected across 100 volts DC supply. Find (1) Time constant of the circuit (2) Initial Current (3) Current Equation as a function of time (4) Voltage across resistor after 6 msec.		7				
64	1	A resistor of 2 Mohm is connected in series with a capacitor of 0.01 µF across d.c. voltage source of 50 V. Calculate: (a) capacitor voltage after 0.02 sec, 0.04 sec, 0.06 sec and 1 hour. (b) charging current after 0.02 sec, 0.04 sec, 0.06 sec and 0.1 sec.		7				
65	1	A 2 µF capacitor is connected by closing a switch to a supply of 100 volts through 1 MΩ series resistance. Calculate (i) time constant (ii) initial charging current (iii) the initial rate of rise of voltage across capacitor (iv) voltage across the capacitor 6 seconds after the switch has been closed.		7				
66	1	A 10 µFcapacitor is connected in series with a 1M ohm resistor. This combination is connected across a 100V D.C. supply determine (i) time constant of the circuit (ii) the initial value of the charging current (iii) the initial rate of rise of voltage across thecapacitor (iv) time taken for the capacitor voltage to reach 60 V.		7				
67	2	Mesh analysis is based on	A	0.5	KVL	KCL	Both	Law of conversion of energy
68	2	The nodal method of circuit analysis is based on _____.	A	0.5	KCL and Ohm’s law	KVL and Ohm’s law	KCL and KVL	KCL, KVL and Ohm’s law

L.J Institute of Engineering and Technology, Ahmedabad.

Fundamental of Electronics and Electrical Engineering (FEE)

Question Bank (SEM-II-2023 CE/IT/CSD/AIML/AIDS/RAI/CS&IT/CSE/CST/CEA Engineering)

Note : This question bank is only for reference purpose. LJU Test question paper may not be completely set from this question bank.

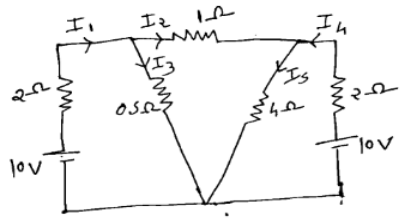
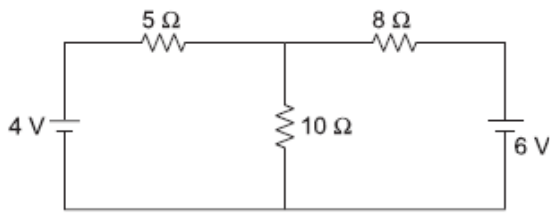
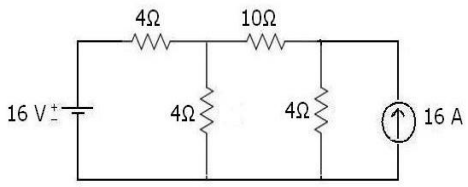
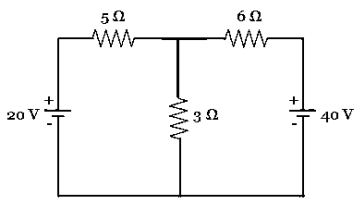
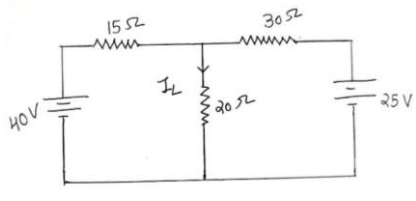
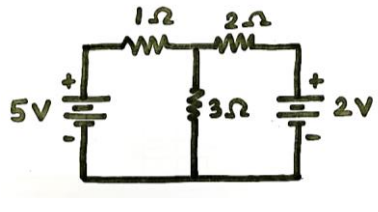
Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
69	2	Use node voltage method to determine the voltage across the 12 ohm resistor of the circuit given in Figure, Verify by Mesh Analysis. 		6				
70	2	Find the value of current flowing through the 10 Ω resistor by using Mesh analysis. 		4				
71	2	For the circuit shown below, determine the mesh currents using mesh analysis. 		3				
72	2	Determine mesh currents I1, I2 and I3 for given figure All the resistances are in Ω. 		7				
73	2	Determine mesh currents I1, I2 and I3 for given figure. Also find current through 3 Ω Resistor. 		4.0				
74	2	Find the current supplied by the battery using Kirchhoff's law in given figure. 		7				
75	2	Calculate the value of branch currents for the network shown below, using nodal analysis. Values of resistors are in ohm. 		3				

L.J Institute of Engineering and Technology, Ahmedabad.

Fundamental of Electronics and Electrical Engineering (FEE)

Question Bank (SEM-II-2023 CE/IT/CSD/AIML/AIDS/RAI/CS&IT/CSE/CST/CEA Engineering)

Note : This question bank is only for reference purpose. LJU Test question paper may not be completely set from this question bank.

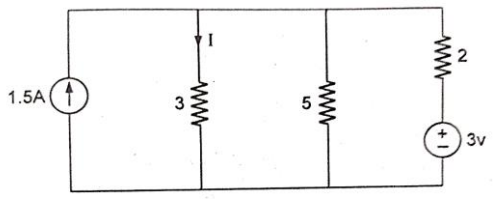
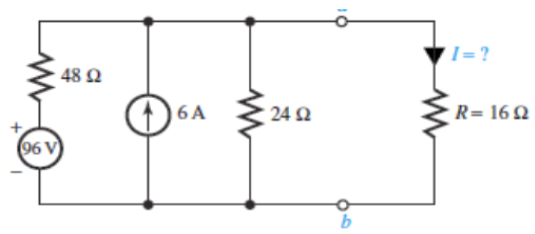
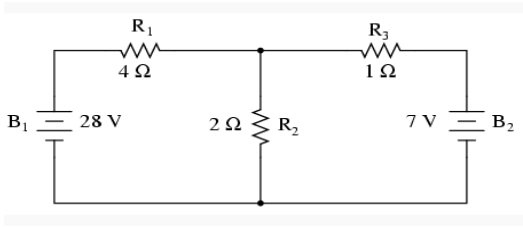
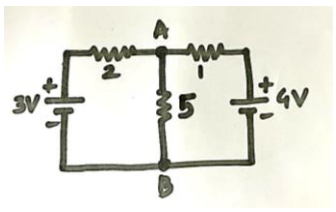
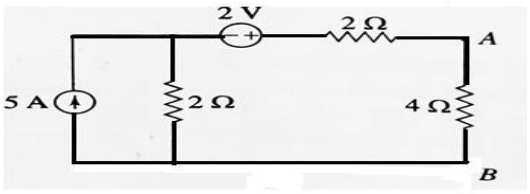
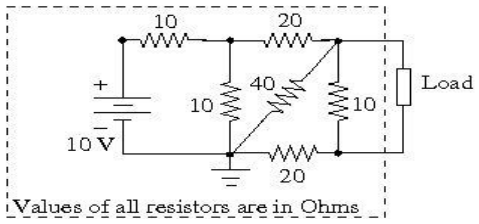
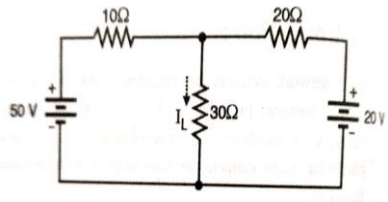
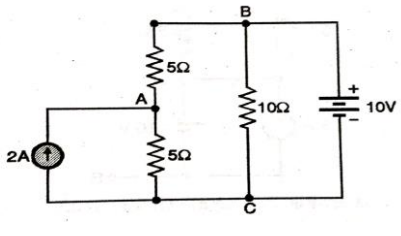
Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
76	2	Using nodal analysis find values of I1, I2, I3, I4 & I5 		4				
77	2	By using which theorem we can replace the whole circuit network in single voltage and resistor network?	D	0.5	Superposition	Maximum power Transfer	Norton's Theorem	Thevenin's Theorem
78	2	A system is linear if _____ is true.	C	1	KVL	KCL	Superposition theorem	Ohm's law
79	2	The superposition theorem is applicable to	C	0.5	linear, non-linear and time variant responses	linear and non-linear resistors only	linear responses only	none of the above
80	2	Which of the following is not applicable to the nonlinear network?	C	1	Thevenin	Norton	Superposition	KCL
81	2	Take suitable example and explain the steps to apply Norton's theorem for a resistive circuit with a constant DC voltage source.		7				
82	2	Take suitable example and explain the steps to apply Thevenin's theorem for a resistive circuit with a constant DC voltage source.		7				
83	2	What is Superposition Theorem? Prove the same for a network.		7				
84	2	Find the value of current flowing through the 5 Ω resistor using superposition theorem 		4				
85	2	Find the current through 10 Ω resistor using superposition theorem 		4				
86	2	Find the current through 3 Ω resistor using superposition theorem. 		4				
87	2	Find Current I_L through 20ohm resistor using Superposition theorem 		4				
88	2	Determine the current flowing through 3 Ω in the following circuit using superposition theorem. 		4				

L.J Institute of Engineering and Technology, Ahmedabad.

Fundamental of Electronics and Electrical Engineering (FEE)

Question Bank (SEM-II-2023 CE/IT/CSD/AIML/AIDS/RAI/CS&IT/CSE/CST/CEA Engineering)

Note : This question bank is only for reference purpose. LJU Test question paper may not be completely set from this question bank.

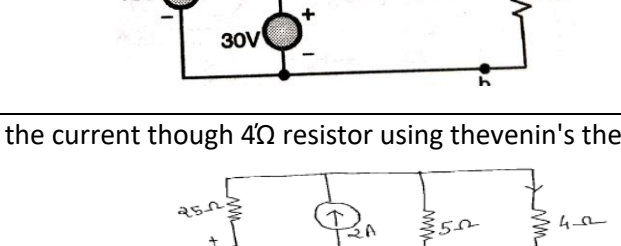
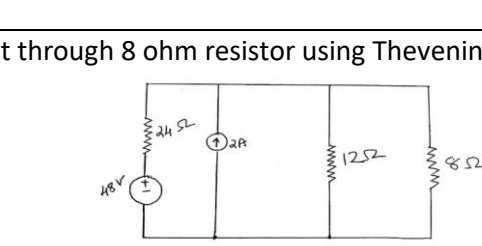
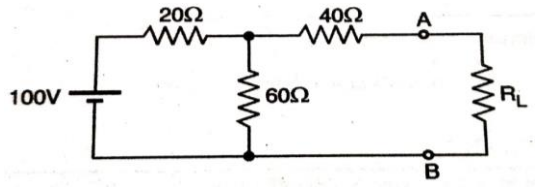
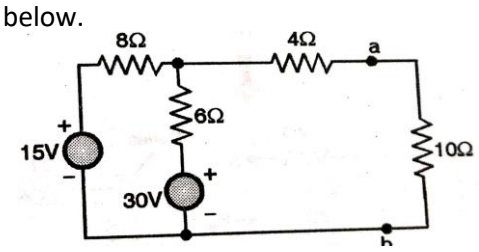
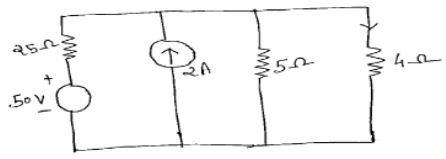
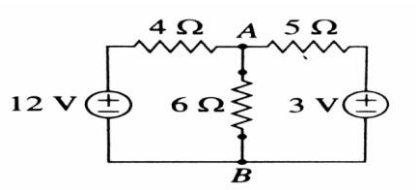
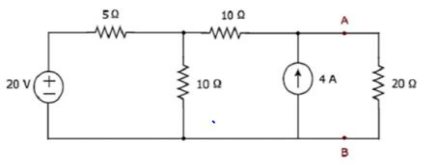
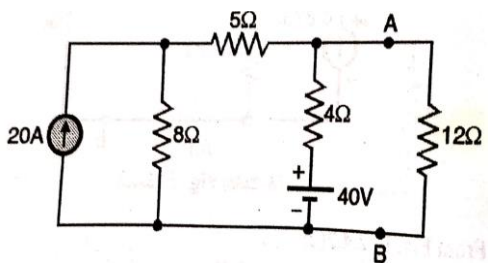
Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
89	2	Determine the value of I using superposition therorem in the network shown below. 		4.0				
90	2	Consider the circuit shown in Figure. Reduce the portion of the circuit to the left of terminals a–b to (a) a Thevenin equivalent and (b) a Norton equivalent. Find the current through R = 16 Ω. 		7				
91	2	Find the current through 2 Ω resistor using Thevenin's theorem 		4				
92	2	What will be the current flowing through 5 Ω in the following circuit if thevenin's theorem is used? 		4				
93	2	Determine the current in the 4 Ω resistor of the circuit shown in fig using Norton's theorem. 		3				
94	2	Obtain the value of Norton's equivalent current and Norton's equivalent resistance for the network shown in the following figure. 		7				
95	2	Find IL for the circuit shown in below figure using superposition theorem. 		4				
96	2	Using superposition theorem determines currents in all resistances of the network as shown in figure. 		7				

L.J Institute of Engineering and Technology, Ahmedabad.

Fundamental of Electronics and Electrical Engineering (FEE)

Question Bank (SEM-II-2023 CE/IT/CSD/AIML/AIDS/RAI/CS&IT/CSE/CST/CEA Engineering)

Note : This question bank is only for reference purpose. LJU Test question paper may not be completely set from this question bank.

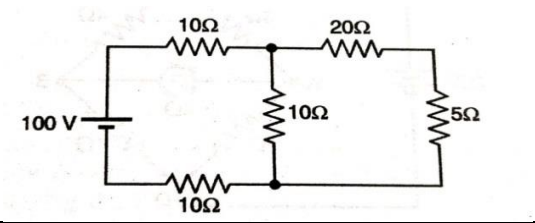
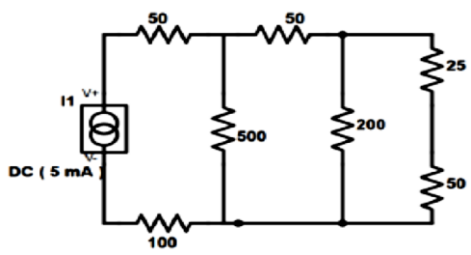
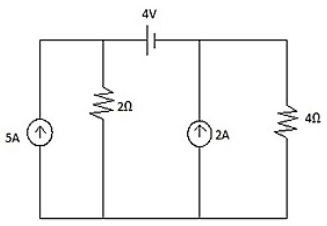
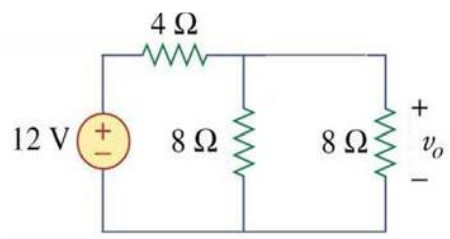
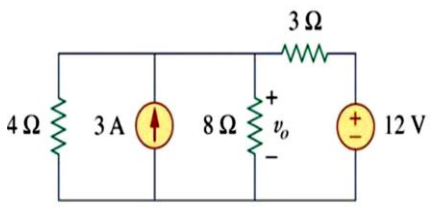
Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
97	2	Using super position theorem, find the current through 4 ohm resistance for the circuit given below. 		7				
98	2	Find the current though branch AB using thevenin's theorem. 		5				
99	2	Draw the norton's equivalent circuit for below figure. 		4				
100	2	Determine current in 10 ohm resistance using Norton's theorem in the network below. 		5				
101	2	Find the current though 4Ω resistor using thevenin's theorem 		4				
102	2	Find current through 8 ohm resistor using Thevenin's Theorem.		4				
103	2	According to Thevenin's theorem, any electrical network can be replaced by a network with——	B	1	a current source in parallel to the	a voltage source in series with	a voltage source in parallel to the	a current source in series with
104	2	Use Thevenin's theorem to find current through the 6 Ω resistor in the circuit shown in fig. 		3				
105	2	Find the current flowing through 20 Ω resistor by first finding a Thevenin's equivalent circuit to the left of terminals A and B. 		4				
106	2	Draw the Norton's equivalent across AB and find current flowing through 12 ohm resistor. 		4				

L.J Institute of Engineering and Technology, Ahmedabad.

Fundamental of Electronics and Electrical Engineering (FEE)

Question Bank (SEM-II-2023 CE/IT/CSD/AIML/AIDS/RAI/CS&IT/CSE/CST/CEA Engineering)

Note : This question bank is only for reference purpose. LJU Test question paper may not be completely set from this question bank.

Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
107	2	Determine the value of current through the 5 ohm resistor using Norton's theorem in the circuit 		5				
108	2	Discuss the principle of source transformation to obtain equivalent voltage source from a current source.		3				
109	2	Calculate the current I through 25 Ω resistance in the circuit shown below if Input I1 of 5 mA is applied using a current source. 		4				
110	2	Find the current flowing through 4Ω resistor shown in network below. 	C	1	1.33A	2.35A	1.66A	2.66A
111	2	In the circuit below, use a source transformation to determine Vo. 		4				
112	2	In the circuit below, use a source transformation and the parallel current source rule to determine Vo. 		4				
113	3	Elaborate phenomena of generation of Alternating voltages and currents and derive expression for it with suitable diagrams		6				
114	3	An alternating current varying sinusoidally with a frequency of 50 Hz has r.m.s. value of 10A. Write down the equation for instantaneous value and find this value (i) 0.0025 second and (ii) 0.0125 second after passing through a positive maximum value.		6				
115	3	An alternating current of frequency 50 Hz has a peak value of 150 A. Calculate: (a) Its value 0.0015 seconds after passing through a positive maximum value. (b) Its value 0.002 seconds after the instant the current is zero and decreasing thereafter.		3.0				
116	3	An alternating emf is given by e =200 sin(100πt). The instantaneous value of emf at t=1/200 sec is_____	C	1	150V	175 V	200 V	0 V
117	3	What should theta be in order to get maximum emf?	B	0.5	0	90	180	45
118	3	When a coil is rotated in a magnetic field, the emf induced in it?	C	1	Is maximum	Is minimum	Continuously varies	Remains constant
119	3	In the context of A.C. waveform, Define (i) Frequency (ii) Peak Factor (iii) phase & phase difference (iv) Form factor (v) Power factor (vi) Instantaneous value (vii) Amplitude (viii) Time period (ix) Angular velocity (x) cycle		7				
120	3	What is RMS value? Explain analytical method to obtain the RMS value.		7				

L.J Institute of Engineering and Technology, Ahmedabad.

Fundamental of Electronics and Electrical Engineering (FEE)

Question Bank (SEM-II-2023 CE/IT/CSD/AIML/AIDS/RAI/CS&IT/CSE/CST/CEA Engineering)

Note : This question bank is only for reference purpose. LJU Test question paper may not be completely set from this question bank.

Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
121	3	For a sinusoidal waveform, prove that root of mean of squares of instantaneous values of currents is $0.707I_m$.		2				
122	3	Sinusoidal voltage and current are given by the equations: v = 50 sin (ωt + π/4) and i = 14.14 sin (ωt - π/3) respectively. Which of the followings is/are true statements? 1) Current leads voltage by 15° 2) Voltage leads current by 15° 3) Voltage leads current by 105° 4) R.M.S value of current is 10 A. (A) Only statement-1 is true (B) Only statement-2 is true (C) Only Statement-3 is true (D) Only Statement-4 is true (E) Statements-1 & 2 are true (F) Statements-2 & 3 are true (G) Statement-3 & 4 are true	D	0.5	Only statement-1 is true	Statements-1 & 2 are true	Statements-2 & 3 are true	Statement-3 & 4 are true
123	3	An alternating voltage is v = 100 sin 100t. Find (i) Time period andfrequency (ii) Angular velocity (iii) Form factor (iv) Peak factor		4				
124	3	A certain waveform has a form factor of 1.2 and a peak factor of 1.5.If the maximum value is 100,find the r.m.s value and average value.		3				
125	3	Convert i = 10 + j 17.32 into polar form.	B	1	30∠ 60˚	20∠ 60˚	60∠ 30˚	50∠ 30˚
126	3	Three currents are represented by i1=25coswt, i2 = 20 sin (wt-π/2), i3 = 15 sin (wt-π/6). Find the value of resultant current and phase angle. Write the equation of resultant current.		7				
127	3	Three currents are represented by i1= 10sinwt, i2= 20sin(wt-π/6) ,i3= 30sin(wt+π/4) . Find magnitude and phase angle of resultant current of their addition.		3				
128	3	Three currents are represented by, i1 = 10 sinwt , i2 = 20 sin(wt+60˚), i3 = 7.5 sin (wt-30˚). Find resultant current. If the supply frequency is 50 Hz, Calculate resultant current when t=0.		4				
129	3	The following expressions represent the instantaneous values of e.m.f. in three coils connected in series: e1= 50 sin ωt, e2= 40 sin(ωt+60°), e3= 60 sin (ωt-30°) Find an expression for the resultant e.m.f.		3				
130	3	Two currents are given by expressions :i1 = 40 sin(314t + 30°) and i2= 20 sin(314t - 60°). Find expression for (i1 – i2).		5				
131	3	Four currents are meeting at a point in a circuit. Find the resultant current. i1 = 5 sin ωt, i2 = 10 sin (ωt-30°), i3 = 5 cos (ωt-30°), i4= -10 sin (ωt+45°).		7				
132	3	Two currents are represented by i1=7sinwt, i2 = 10 sin (wt+π/3). Find the value of resultant current and phase angle. Write the equation of resultant current.		2				
133	3	Which of the following frequencies has the longest time period?	D	0.5	10 kHz	1 kHz	10 Hz	1 Hz
134	3	A wave completes one cycle in 10 µs. Its frequency will be_____.	C	0.5	10 µHz	50 Hz	100 kHz	10 kHz
135	3	The frequency of DC supply is	C	1	50 Hz	1 Hz	0 Hz	None of these
136	3	The period of sine wave is 1/50 seconds, its frequency is	B	0.5	25 Hz	50 Hz	100 Hz	16 1/3 Hz
137	3	An alternating quantity is defined as the one which changes its _____ as well as _____ with respect to time.	A	1	Value, direction	Phase, Polarity	Value, Phase	value,value
138	3	One eighth cycle of 50 Hz alternating voltage corresponds to _____	B	1	2.5 sec	2.5 msec	5 sec	5 msec
139	3	If one cycle of ac waveform occurs every milli-second, the frequency will be	D	0.5	1/1000 Hz	50 Hz	100 Hz	1000 Hz
140	3	A current is said to be alternating when it changes in _____.	C	1	magnitude only	direction only	both magnitude and direction	neither magnitude nor direction
141	3	The peak value of sine wave is 100V. its average value is	A	0.5	63.7 V	70.7 V	141.4 V	100 V
142	3	The peak value of sine wave is 200V. its average value is	C	1	53.7	70.7	127.4	141.4
143	3	An alternating voltage given by e = 50 sin 314t has a maximum value of _____ V and frequency of _____ Hz.	C	0.5	25,314	50,314	50,50	100, 314
144	3	The instantaneous current equation is i=120 sin 120 πt. What will be the time taken to reach 96 A for the first time?	A	0.5	0.002450	0.800	0.356	1
145	3	What will be frequency value in a sinusoidal alternating current i=100sin377t	A	1	60 Hz	20 kHz	50 kHz	35 kHz
146	3	An alternating voltage is v = 100 sin 377 t. Find (i) RMS Value (ii)Average value(iii)Frequency		3				

L.J Institute of Engineering and Technology, Ahmedabad.

Fundamental of Electronics and Electrical Engineering (FEE)

Question Bank (SEM-II-2023 CE/IT/CSD/AIML/AIDS/RAI/CS&IT/CSE/CST/CEA Engineering)

Note : This question bank is only for reference purpose. LJU Test question paper may not be completely set from this question bank.

Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
147	3	An alternating voltage is v = 50 sin 50t. Find (i) Time period (iii) Form factor (iv) Peak factor.		2				
148	3	An alternating Current is i = 100 sin(100t+60º). Find (1) Time period and frequency (2) Angular velocity (3) Form factor (4) Crest factor		5				
149	3	The value of form factor is	B	0.5	11.1	1.11	1.414	14.14
150	3	The value of crest factor is	C	0.5	11.1	1.11	1.414	14.14
151	3	The crest value of sine wave is 50V. its average value is_____.	A	1	31.85	30.85	20.65	33.85
152	3	The maximum value of an ac quantity is called as its _____	A	0.5	Amplitude	Peak to Peak Value	RMS Value	Average Value
153	3	Rms value is also called as _____ of ac current.	B	1	Light producing component	heat producing component	Useful component	Useless component
154	3	Peak value of sinusoidal waveform is equal to _____ .	D	0.5	0.637 ×Vaverage	0.637 Vrms	0.707 Vrms	1.414 Vrms
155	3	Average value of a.c. voltage = _____× Vm.	C	0.5	1.414	0.707	0.637	1.5
156	3	An alternating current given by i=14.14 sin (ωt + π/6) has a rms value of _____ A and phase of _____ degrees.	D	0.5	10, 180◦	14.14, 180◦	10, 60◦	10, 30◦
157	3	Show that square root of mean of square of Sinusoidal quantity is equal to the 0.707*maximum value.		2				
158	3	Obtain the expression for Average value of sinusoidal alternating quantity.		2				
159	3	Derive an expression for RMS value of sinusoidal alternating current.		3				
160	3	Derive an expression for RMS value of alternating current by analytical method.		3				
161	3	If a sinusoidal wave has frequency of 50 Hz with 30 A r.m.s. current which of the following equation represents this wave?	D	1	42.42 sin 25 t	60 sin 25 t	30 sin 50 t	42.42 sin 314 t
162	3	The r.m.s. value of alternating current is given by steady (D.C.) current which when flowing through a given circuit for a given time produces/transfers	B	1	The more heat than produced by A.C. when flowing through the same circuit	The same heat as produced by A.C. when flowing through the same circuit	The less heat than produced by A.C. flowing through the same circuit	The more charge transferred than transferred by A.C. when flowing through the same circuit
163	3	Form Factor is the ratio of	C	1	Average value/r.m.s. value	Average value/peak value	r.m.s. value/average value	r.m.s. value/peak value
164	3	Two sinusoidal currents are given by the equations: i1 = 10 sin (ωt + π/3) and i2 = 15 sin (ωt - π/4). The phase difference between them is_____	A	1.0	105°	15°	75°	60°
165	3	An alternating current i is given by i = 141.4 sin 314t. Find (i) The r.m.s. value (ii) Frequency (iii) Time Period (iv) The instantaneous value when t=3ms		4				
166	3	An alternating current i is given by i = 141.4 sin 314t. Find (i) The r.m.s. value (ii) Frequency (iii) Average value of I		3.0				
167	4	Prove that pure resistive circuit has unity power factor. Draw the wave forms of voltage, current and instantaneous power.		7				
168	4	The peak values of voltage and current in an a.c. circuit are 200 V and 10 A respectively. Both the quantities are sinusoidal with 50 Hz frequency. The instantaneous values of voltage and current at time t = 0 second are 141.4 V and 5 A respectively (both increasing and positive). Obtain the equations of voltage and current in this circuit at time 't' second.		3				
169	4	Derive the equation that represents average value for half wave rectified current.		2				
170	4	Prove that current in purely inductive circuit lags its voltage by 90° and average power consumption in pure inductor is zero.		7				
171	4	Explain the phenomena of A.C. through pure capacitor with circuit and vector diagram. Also prove that average power consumption is zero.		7				
172	4	Prove that current in purely capacitive circuit leads its voltage by 90°.		3				

L.J Institute of Engineering and Technology, Ahmedabad.

Fundamental of Electronics and Electrical Engineering (FEE)

Question Bank (SEM-II-2023 CE/IT/CSD/AIML/AIDS/RAI/CS&IT/CSE/CST/CEA Engineering)

Note : This question bank is only for reference purpose. LJU Test question paper may not be completely set from this question bank.

Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
173	4	Prove that current in purely capacitive circuit leads its voltage by 90° and average power consumption in pure capacitor is zero.		7				
174	4	Define power factor. What is the power factor of a pure inductor? Give the difference between active and reactive power.		4				
175	4	Discuss the effect of varition of frequency on resistance, inductive reactance and capacitive reactance.		3				
176	4	Deduce an expression for the average power in a single-phase series R L. circuit.		3				
177	4	Deduce an expression for the average power in a single phase series R.L. circuit and there from explain the term power factor.		4				
178	4	Derive the expression for current through a series connected R- L circuit when supplied by a.c sinusoidal voltage. Draw the vector diagram. Also derive the expression of average power consumption in this circuit over 1 cycle.		7				
179	4	Discriminate in-phase phasor, lagging phasor and leading phasor with necessary diagram and expression in AC circuit.		3				
180	4	Distinguish between (i) apparent power (ii) active power and (iii) reactive power.		3				
181	4	What is resonance in AC circuit? Elaborate resonance in case of series R-L-C circuit with the help of phasor diagram and sketch the resonance curve.		7				
182	4	Discuss resonance condition in series R-L-C circuit. Also derive equation of resonant frequency. What is significance of Q-factor		7				
183	4	Draw the phasor diagram in R-L circuit. Draw impedance triangle and power triangle.		7				
184	4	Prove the following statement & draw graphical & phasor representation: “In purely capacitive circuit, Current leads voltage by 90˚.		2				
185	4	Discuss series R-L-C circuit with the phasor diagram for XL>XC; XL<XC & XL=XC.		7				
186	4	In a pure Inductor, the current_____	A	0.5	Lags the voltage by 90°	Leads the voltage by 90°	in phase with the voltage by 90°	Lags the voltage by 45°
187	4	Prove that Voltage in purely capacitive circuit lags its current by 90° and average power consumption in pure capacitor is zero.		5				
188	4	A non-resistive inductance of 0.15 H is connected across an ac supply of 250 V, 60 Hz. Determine:-(i) Inductive reactance (ii) RMS current (iii) Active power and (iv) Voltage and current equations.		2				
189	4	An inductive circuit draws 10 A & 1 KW from 200 V,50 Hz ac supply. Find [1] Z & XL [2] power factor [3] apparent power [4] reactive power		4				
190	4	An inductive circuit draws 10 A & 1.732 KVAR from 200 V, 50 Hz ac supply. Find (1) Z & XL (2) power factor (3) Apparent power (4) Active power		5				
191	4	An inductive coil draws 15 A current and consumes 1000 W power from a 220 V, 50 Hz ac supply. Determine i) Impedance in Cartesian and Polar form ii) Power Factor and iii) Reactive and Apparent Power.		3				
192	4	A single phase R-L series circuit is connected with 200 V, 50 Hz ac supply. The value of resistor and inductive reactance is 10 Ω and 5 Ω respectively. Find Impedance, current and power factor of circuit.		3				
193	4	Elaborate the concept for average power in an R-L Series circuit. Also draw the waveform for v, i and p		3				
194	4	A single phase R-L-C circuit having resistance of 8Ω, inductance of 80mH and capacitance of 100µF is connected across single phase ac 150 V , 50Hz supply. Calculate the current, power factor and voltage drop across inductance and capacitance.		7				
195	4	A Series R-L-C circuit consisting of a resistance of 20 Ω, inductance 0.2 H and capacitance of 160 µF is connected across a 230 V, 50 Hz source. Calculate (i) the impedance (ii) the current (iii) the magnitude and nature of the power factor (iv) the frequency of supply to be adjusted to make power factor unity.		4				

L.J Institute of Engineering and Technology, Ahmedabad.

Fundamental of Electronics and Electrical Engineering (FEE)

Question Bank (SEM-II-2023 CE/IT/CSD/AIML/AIDS/RAI/CS&IT/CSE/CST/CEA Engineering)

Note : This question bank is only for reference purpose. LJU Test question paper may not be completely set from this question bank.

Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
196	4	A circuit consists of a pure inductor, a pure resistor and a capacitor connected in series. When the circuit is supplied with 100 V, 50 Hz supply, the voltage across inductor and resistor are 240 V and 90 V respectively. If the circuit takes 10 A leading current, calculate (i) value of inductance, resistance and capacitance (ii) power factor of the circuit (iii) voltage across capacitor.		7				
197	4	A circuit contains a resistance of 4 Ω , inductance of 0.5 H and a variable capacitance C connected in series across 100 V, 50 Hz supply. Calculate i). The value of capacitance to produce resonance ii). Voltage and current across C at resonance iii). Q factor of the circuit.		7				
198	4	A circuit contains a resistance of 4 Ω , inductance of 1 H and a variable capacitance C connected in series across 100 V, 50 Hz supply. Calculate i). The value of capacitance to produce resonance ii). Voltage and current across C at resonance iii). Q factor of the circuit.		3				
199	4	A 1200 Ω resistor, 0.7 H coil and 0.001 µF capacitor are connected in series across a 120 V a.c. source. Determine (1) Resonant frequency (2) Current at resonance (3) Q- factor of the circuit at resonance.		3.0				
200	4	R-L-C series circuit with a resistance of 10 Ω, inductance of 0.2 H and capacitance of 40 µF is supplied with a 100 V supply at variable frequency. Find the following with respect to series resonant circuit. (1) The frequency at which resonant takes place (2) the current (3) power (4) power factor (5) voltage across R, L and C at that time (6) quality factor (7) half-power frequencies.		7				
201	4	A resistance of 20 Ω, an inductance of 0.2 H and a capacitance of 100 µF are connected in series across 220 V,50 Hz supply. Find [1] Impedance[2] Voltage across R,L & C[3] Power factor & angle of lag[4] Active & apparent power.		4				
202	4	A Series RLC circuit consists of resistance of 500 Ω, inductance of 50mHand a capacitance Of 20pF. Find (1) the resonant frequency (2) The Q factor of the circuit of resonance (3) The half power frequency.		4				
203	4	An ac supply voltage of 230 volts, 50 Hz is given to the circuit containing 10Ω and 20Ω in series. Find equivalent resistance, total current, and voltage drop across each resistance, active power, reactive power, power factor.		7				
204	4	The voltage and current in a circuit are given by V = 150 / 30° volt and I = 2 / -15° Ampere. If circuit works on a 50 Hz supply, determine, (i) Impedance, (ii) Resistance, (iii) Reactance, (iv) Power factor, (v) Power loss		7				
205	4	A resistance of 10Ω, an inductance of 0.2H and a capacitance of 100µF are connected in series across 220V, 50Hz mains. Determine the following (1) Impedance (2) current (3) voltage across R, L and C (4) Power Factor		6				
206	4	A series RLC circuit having resistance of 8 ohm, inductance of 80 mH and capacitance of 100 µFis connected across 150 V, 50 Hz supply. Calculate,(a) the current, (b) the power factor, and (c) the voltages drops in the coil and capacitance.		7				
207	4	A series RLC circuit having resistance of 8 Ω, inductance of 80 mH and capacitance of 100 F is connected across 150 V, 50 Hz supply. Calculate the current, the power factor and the voltage drops in the coil and the capacitance.		7				
208	4	If a pure capacitance is connected to an a.c. source, the current ____ the source voltage by _____	C	1	Lags,90°	lags, 45°	leads,90°	leads, 45°
209	4	In an AC circuit power is dissipated in _____.	A	1	resistance only	inductance only	capacitance only	none of these
210	4	The power factor of which of the following will be unity.	C	1	Purely Capacitive Circuit	Purely inductive Circuits	Purely Resistive Circuit	both (a) and (b)
211	4	If the coil has an inductance of 0.2H, its inductive reactance at 50 Hz frequency	C	0.5	62.8 siemens	628 ohms	62.8 ohms	0.2 ohms
212	4	The power consume by pure inductance connected to an a.c source is	A	1	Zero	Very Low	Very high	Infinite

L.J Institute of Engineering and Technology, Ahmedabad.

Fundamental of Electronics and Electrical Engineering (FEE)

Question Bank (SEM-II-2023 CE/IT/CSD/AIML/AIDS/RAI/CS&IT/CSE/CST/CEA Engineering)

Note : This question bank is only for reference purpose. LJU Test question paper may not be completely set from this question bank.

Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
213	4	Power factor of purely resisitvie circuit is_____	D	1	Zero	Very Low	Very high	Unity
214	4	Power consumption over a cycle in purely Capacitive circuit ____.	C	1	depends on Capacitance	depends on supply voltage	Zero	Infinite
215	4	If the current and voltage are out of phase by 90º, the power is	C	1	Maximum	Minimum	Zero	1.1*V*I
216	4	When VC > VL , R-L-C circuit acts as _____ circuit.	C	1	Pure R	Pure L	Pure C	R-L Series
217	4	The approximate value of capicitive reactance of an ac circuit containing 35µF capacitance at a frequency of 60 Hz will be	C	1	50 Ω	60 Ω	75 Ω	100 Ω
218	4	In an ac source R=36 Ω, frequency = 50 Hz and L = 0.12 H, then phase difference between current and voltage is nearly	C	1	90°	60°	45°	75°
219	4	In which circuit average power is equal to the product of RMS value of voltage and current?	C	1	RL series ckt	RC series ckt	Purely resistive ckt	RLC series ckt
220	4	An inductive circuit draws 5 A & 2 KW from 230 V,50 Hz ac supply. Find [1] Z & X_L [2] power factor [3] apparent power		3				
221	4	The average power consume by pure resistance is	A	0.5	Vrms* Irms	Vm* Im	(Vrms* Irms)/2	0
222	4	In series R-L circuit, VL _____ VR by _____ degrees.	B	0.5	lags, 90	leads, 90	lags, 60	leads, 45
223	4	The resonance frequency for the series RLC circuit is _____ ,where, R=100 Ω, L = 80 mH, C = 3160 pF.	B	1	15 kHz	10 kHz	8 kHz	12 kHz
224	4	The power factor of R-C series a.c. circuit is _____	C	1	Unity	lagging	leading	zero
225	4	An R-L circuit has a resistance of 3 ohms and a reactance of 4 ohms. The impedance of the circuit is_____.	A	1	5 ohm	7 ohm	1 ohm	25 ohm
226	4	In a series RLC high Q circuit, the current peaks at a frequency _____.	B	1	greater than the resonant frequency	equal to the resonant frequency	less than the resonant frequency	none of the these
227	4	As resistance of a circuit is increase, the Q factor is	B	1	increase	decrease	remains the same	none of the above
228	4	In series RC circuit excited by a d.c voltage E, the initial current is	C	1	Zero	Infinite	E/R	E/Xc
229	4	Draw Impedance Triangle for R-L series and R-C series circuit.		1				
230	4	Derive the average power for the circuit where voltage leads the current by an angle 'φ'. Also draw the waveforms for instantaneous voltage, current and power.		3				
231	4	A single-phase R-L series circuit is connected with 200 V, 50 Hz ac supply. The value of resistor and inductive reactance is 10 Ω and 5 Ω respectively. Find Impedance, current and power factor of circuit.		2				
232	4	Which of the following statements are true for series RLC circuit at resonance? 1.Impedance minimum 2.It behaves as resistive circuit 3.It behaves as reactive circuit 4.Current will be maximum	C	1	Only 1 & 2	2,3 & 4	1,2 & 4	Only 1 &4
233	4	If a network has an impedance of Z = ∠-10° Ω , which of the following statements is correct?	B	1	current lags behind voltage by 10 °	current leads ahead voltage by 10 °	current is in phase with voltage	current is in phase opposition with voltage
234	4	The impedance of the circuit having resistance 50 Ω in series with a capacitance of 100 µF connected across 100 V, 50 Hz supply is _____Ω.	C	0.5	31.8	20	59.3	100
235	4	A capacitor of 35 µF is connected in series with a variable resistor. It is connected across 230 V, 50 Hz mains. Find the value of resistor for a condition when the voltage across capacitor is half the supply voltage, also calculate i) current drawn ii) power factor and iii) power of said conditions.		3				
236	4	A Capacitor of capacitance 79.5µF is connected in series with a non-inductive resistance of 30Ω across a 100V, 50Hz supply. Find (i) impedance (ii) current (iii) phase angle (iv) Equation for the instantaneous value of current		4				
237	4	A resistor and a capacitor are connected in series across 230 v ac supply current taken by circuit is 6 A for 50 Hz. Current reduced to 5 A when frequency of supply decreased to 40 Hz Determine Value of Capacitor		3				
238	4	A resistor & a capacitor are connected in series across 230 V ac supply. The current taken by the circuit is 6 A for 50 Hz frequency. The current is reduced to 5 A, when the frequency of supply is decreased to 40 Hz. Determine the value of resistor & the capacitor.		3				

L.J Institute of Engineering and Technology, Ahmedabad.

Fundamental of Electronics and Electrical Engineering (FEE)

Question Bank (SEM-II-2023 CE/IT/CSD/AIML/AIDS/RAI/CS&IT/CSE/CST/CEA Engineering)

Note : This question bank is only for reference purpose. LJU Test question paper may not be completely set from this question bank.

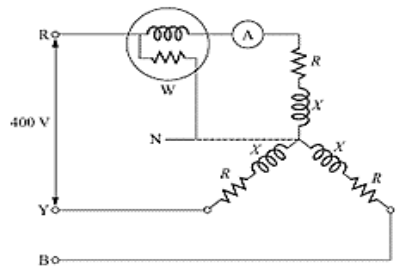
Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
239	4	A series circuit consists of a resistance of 100 Ω and a capacitance of 50 µF and is energized from a 200 V, 50 Hz mains. Determine (1) the impedance (2) the current in the circuit (3) Power factor		4.0				
240	4	Draw the phasor diagram of R-C series circuit.		1				
241	4	For a series resonance condition of AC circuit impedance is	B	1	maximum	minimum	zero	infinite
242	4	A resistance of 10 ohm an inductance of 0.2 H and a capacitor of 100 µF are connected in series across 220 v 50 Hz main Find Impedance, Current and power factor		3				
243	4	The power factor of R-C series Ac ckt. is	B	1	unity	leading	lagging	zero
244	4	Q-factor of a coil means	D	1	Higher voltage magnification	Higher selectivity of the tuning coil	either [a] or [b]	] both [a] and [b]
245	4	For a series resonance condition of a AC circuit current is	B	1	minimum	maximum	infinite	zero
246	4	In a series circuit on resonance, the following will occur	C	0.5	$X_C>X_L$	$I_R=IX_L$	$X_L=X_C$	$X_{L<}X_C$
247	4	A sinusoidal voltage V(t)= (200V) sinωt is applied to a series RLC circuit with L =10 mH, C =100 nF and R = 20 Ω. Find the following quantities: (i) the resonant frequency, (ii) the amplitude of the current at resonance, (iii) the quality factor of the circuit, and (iv) the amplitude of the voltage across the inductor at the resonant frequency.		4				
248	4	Under resonance, the impedance of the series resonant circuit is ----------	B	0.5	resistive & maximum	resistive & minimum	capacitive & minimum	capacitive & maximum
249	4	In a series R-L-C circuit at the resonant frequency the	A	1	Current is maximum	Current is minimum	Impedance is maximum	circuit is purely inductive
250	4	Under resonance, the power factor of the series resonant circuit is ----------	B	1	0	Unity	iInfinite	0.5
251	4	For series R-L-C circuit, at resonance which of the followings is/are true statements? 1) Impedance is maximum. 2) Current is maximum 3) Circuit works as purely resistive circuit.	A	1.0	Statements-2 & 3 are true	Statement-1 & 3 are true	Statements-1 &2 are true	Statements-1, 2 & 3 are true
252	4	a series RLC circuit has a resonance frequency of 1000 hz if inductance is made four times, the resonance frequency will be	B	1	1000 Hz	500 Hz	707 Hz	4000 Hz
253	4	An RLC series circuit is supplied by ac supply of 50 Hz, having R=10Ω, XL=10Ω and XC=100Ω. The power factor is _____.	C	1	1	0	leading	lagging
254	4	Derive the equation of voltage magnification in RLC series circuit at resonance		3				
255	5	The rated voltage of a three-phase power system is given as _____.	B	0.5	rms phase voltage	rms line to line voltage	peak phase voltage	peak line to line voltage
256	5	The three phase voltages are displaced by _____ radians from each other.	C	1	π/2	π/3	2π/3	π
257	5	There are three voltage sources. Voltage source 1 gives 200V peak voltage; Voltage source 2 gives 100V peak which lags behind Voltage source 1 by 120° ; and Voltage source 3 gives 100 V peak which leads Voltage source 1 by 120°. If these voltage sources and a 1 Ω resister are connected in series, what is the power dissipation in the resistor?	D	1	2000W	4000W	2650W	5000W
258	5	For a balanced delta load the_____ of all their line currents is zero.	C	1	product	difference	sum	division
259	5	Discuss advantages of 3-phase system over a single-phase system.		3				
260	5	Show that for star connection of three phase circuit, the line voltage is equal to 1.732 times the phase voltage whereas line current is equal to phase current. Also draw phasor diagram to support your answer.		3				

L.J Institute of Engineering and Technology, Ahmedabad.

Fundamental of Electronics and Electrical Engineering (FEE)

Question Bank (SEM-II-2023 CE/IT/CSD/AIML/AIDS/RAI/CS&IT/CSE/CST/CEA Engineering)

Note : This question bank is only for reference purpose. LJU Test question paper may not be completely set from this question bank.

Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
261	5	For the below star connected network of equal loads, if the Wattmeter reading is 5kW and ammeter reading is 25 Amperes, the power factor is ____. 	D	1	0	1	0.5	0.866
262	5	In Three Phase Star Connected Balanced A.C. system, angle between Line Voltage and Line Current is _____.	D	1	30˚	Φ˚	30˚- Φ˚	30˚+ Φ˚
263	5	For three phase star connected balance load, which of the following statements is/are true? 1.Line current is equal to Phase current. 2.Line voltage is √3 times phase voltage 3.Line voltage leads Phase voltage by 30° 4. Total power consumed = √3 VL IL cosØ	D	1.0	Only statement-1 is true	Statements-1 &2 are true	Statement-1,2,3 are true	Statement-1,2,3,4 are true
264	5	For a three-phase balanced star-connected system develop the relationship between the following with the help of phasor diagram: 1. Line voltage and phase voltage 2. Line current and phase current.		7				
265	5	Obtain the relationship between line and phase values of current in a three phase, balanced, delta connected system.		7				
266	5	Distinguish following for 3-phase AC circuit. [1] Line voltage [2] Phase voltage [3] Phase sequence		3				
267	5	A delta connected balanced 3-phase load is supplied from a 3-phase400 V supply. The line current is 20 A and the power taken by the load is 10,000 W. Find (i) impedance in each branch (ii) the line current, power factor and power consumed if the same load is connected in star.		4				
268	5	Three equal star connected inductor take 8 kW at a power factor 0.8 when connected across a 460V, 3-Ø, 3- wire supply. Find the circuit constant of the load per phase.		3				
269	5	A Δ-connected balanced 3-phase load is supplied from 400 V, 3-phase mains. The line current is 20 A & the power taken by load is 10 MW. Find[1] Impedance in each [2] Power factor of the load[3] Line current & power consumed, if same load is connected in star.(June-15New)[LJIET]		4				
270	5	A delta connected load having branch impedances of (15 +j20) Ω is connected to a 220V, 3 phase AC supply. Find a. Line currents. b. Per phase power consumed. c. What is the phasor sum of the line currents? Why does it have this value?		7				
271	5	Prove that in delta connected balanced three phase system line current is 1.73 times phase current. Also draw phasor diagram to support your answer.		3				
272	5	A delta connected load having branch impedances of (15 +j20) Ω is connected to a 220V, 3 phase AC supply. Find (1) Line currents (2) Per phase power consumed (3) What is the phasor sum of the line currents? Why does it have this value?		5				
273	5	A balanced delta connected load having branch impedances of (5 +j10) Ω is connected to a 400V, 3 phase AC supply. Find a. Line currents. b. Per phase power consumed.		2				
274	5	Three similar coils each of resistance 7 ohm and inductance of 0.03 H are connected in Delta to a 400 v, 3 phase, 50 Hz supply. calculate the line current and the total power consumed.		2				
275	5	For a mesh connection, show that line current is 1.732 times the phase current.		3				
276	5	For balanced three phase delta connected load show that line current is 1.732 times phase current.		3				

L.J Institute of Engineering and Technology, Ahmedabad.

Fundamental of Electronics and Electrical Engineering (FEE)

Question Bank (SEM-II-2023 CE/IT/CSD/AIML/AIDS/RAI/CS&IT/CSE/CST/CEA Engineering)

Note : This question bank is only for reference purpose. LJU Test question paper may not be completely set from this question bank.

Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
277	5	Consider Three phase, delta connected balanced system, prove that Line current is 1.732 times phase current and Show line current lags phase current by 30° with necessary derivation and Phasor diagram.		3.0				
278	5	In delta connection line current lags behind phase current by_____.	B	1	120 degree	30 degree	90 degree	60 degree
279	5	A delta connected load is connected to 3-phase,400 V supply. The load P.F is 0.8 lagging. If the line current is 34.64 Amp, then Zph =_____Ω	A	1.0	6.67	11.54	34.64	20
280	5	A balanced star connected load of (4+j3) Ω per phase is connected to a balance 3 phase 400V supply. Fine the line current, power factor, active power and reactive power.		6				
281	5	A 3-phase load consists of three similar inductive coils of resistances of 50 Ω and inductance0.3 H. The supply is 415 V 50 Hz. Calculate (i) the line current (ii) the power factor and the total power when the load is star connected.		7				
282	5	Three 100 _ non-inductive resistances are connected in (a) star (b) delta, across a 400 V, 50 Hz, 3-phase supply mains. Calculate the power taken from the supply system in each case.		5				
283	5	In three phase system ,the order in which voltages attain their maximum positive values is known as_____.	C	1	RMS voltage	Power factor	Phase sequence	Phase voltage
284	5	Three identical coil each having resistance of 10 Ω and reactance of 10 Ω are connected in (i) star and (ii) delta across 400V, 3 phase supply. Find in each case line current and the reading of each of the two watt meters connected to measure the power.		6				
285	5	Three similar coils each of resistance 28Ω and inductance 0.7H are connected in (i) star (ii) delta. If the supply voltage is 230V, 50Hz, calculate the line current and total power absorbed.		4				
286	5	Three similar coils each having a resistance of 20Ω and an inductance of 0.05H are connected in star to a 3ϕ, 50 Hz supply with 400 V. Calculate the line current, power factor and total power absorbed.		2				
287	5	A balanced 3-phase star connected load of 18kW takes a leading current of 60A when connected across a 3-phase 440V, 50 Hz supply. Find the values circuit constants of load		3				
288	5	A balanced star connected load of (3+j4) Ω per phase is connected to a balance 3 phase 440V supply. Fine the line current and power factor.		2				
289	5	One method of forming a three-phase system is to connect the three similar ends of the windings together at one point. This type of connection is called	D	1	Delta	Mesh	Close	Star
290	5	Elaborate the concept of phase & Line value of voltage in case of 3 phase star connection system with phasor diagram.		3				
291	5	Three identical coils, each of resistance 10ohm and inductance 42mH are connected (a) in star and (b) in delta to a 415V, 50 Hz, 3-phase supply. Determine the total power dissipated in each case.		4				
292	5	The power factor of each phase of a balanced 3ϕ star connected load with impedance of each phase (6+j8) Ω will be _____	A	1	0.6	0	0.25	0.9
293	5	Match the following: 1) Active power in 3ϕ star connected load a) Vph=VL/√3 2) Reactive power in 3ϕ star connected load b) √3VLILcosϕ 3) Apparent power in 3ϕ star connected load c) √3VLIL 4) Relation between line and phase voltage in 3ϕ star connected load d) √3VLILsinϕ	B	1	1-a; 2-b; 3-c; 4-d	1-b; 2-d; 3-c; 4-a	1-b; 2-a; 3-d; 4-c	1-d; 2-b; 3-c; 4-a
294	5	A three-phase star-connected balanced load of (4 + j3) Ω per phase is connected across a three-phase, 50 Hz, 400 V AC supply. Current drawn from the supply is _____ .	A	1	46.188 A	20.23 A	46.88 A	20.32 A
295	5	In the two-wattmeter method of measurement, if one of the wattmeters reads zero, then power factor will be _____.	D	0.5	zero	unity	0.866	0.5
296	5	If process of three-phase power measurement for balanced load by two wattmeter method shows equal readings of both wattmeters, what will be the power factor of load?	B	1	zero	unity	0.7	0.5
297	5	For unity power factor load of 3-phase ckt.,if we measure the power by 2-wattmeter method then readings of wattmeters are	B	1	one wattmeter shows zero reading	equal & +ve sign	equal & opposite sign	both shows zero reading

L.J Institute of Engineering and Technology, Ahmedabad.

Fundamental of Electronics and Electrical Engineering (FEE)

Question Bank (SEM-II-2023 CE/IT/CSD/AIML/AIDS/RAI/CS&IT/CSE/CST/CEA Engineering)

Note : This question bank is only for reference purpose. LJU Test question paper may not be completely set from this question bank.

Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
298	5	For zero power factor load of 3-phase ckt.,if we measure the power by 2-wattmeter method then readings of wattmeters are	C	1	one wattmeter shows zero reading	equal & +ve sign	equal & opposite sign	both shows zero reading
299	5	Describe advantages of Two Wattmeter Method.		3				
300	5	Discuss the power measurement in 3-Ø circuits by using two wattmeter. Also mention the factors which affect the wattmeter reading.		7				
301	5	Prove that the sum of readings of two watt meters connected to measure power in three phase circuit gives total power consumed by the circuit.		5				
302	5	A balanced three phase supply is given to a star connected load. Give proof of two wattmeter method for this system. State demerits of this method.		7				
303	5	How the power factor of a 3-phase balanced load can be determined using two wattmeter?		7				
304	5	Derive the equation cosϕ = cos(tan-1(√3(W1-W2)/(W1+W(2)) in case of two wattmeter method.		3				
305	5	A 3 phase star connected balanced load is supplied with 400 V ac supply. The two wattmeter readings are: 10 kW and -3.5kW. Find the load power factor and line current.		4				
306	5	Two watt meters are connected to measure 3-phase power for star connected load and read 5.185 kW and 10.37 kW. The line current 10 A. Calculate: (i) Line and phase voltage (ii) Resistance and reactance per phase.		7				
307	5	Two wattmeters are used for measuring three- phase power input to the motor. If readings of meters are 7 kW and 2 kW respectively, calculate input power and power factor of the motor.		4				
308	5	For a balanced delta connected load supplied at 3-phase, 400V ac supply, the two wattmeter readings are: 7.8kW and -2.55kW. Find out loadpower factor & line current.		4				
309	5	For a balanced delta connected load supplied at 3-phase , 240 V ac supply , the two wattmeter readings are : (3210) & (-1710) W. Find out total power factor & current.		4				
310	5	For a balanced delta connected load supplied at 3-phase, 230 V ac supply, the two wattmeter readings are: (2210) & (-1720) W. Find out (1) Total Power (2) Total power factor (3) Current.		5				
311	5	Two wattmeter's connected to measure three phase power for star connected loads read 10.37 Kw and 5.185 Kw. The line current is 10 Amp. Calculate (i) Line and phase voltage. (ii) Resistance and reactance per phase.		7				
312	5	Three identical coils each of (4.2 + j5.6) Ω are connected in star across a 415 V, 3 phase, 50 Hz AC supply. Find (1) Phase voltage (2) Phase current. (3) Readings of two wattmeter's W1 and W2 when they are connected to measure the total power.		5				
313	5	The input power to a 3 phase load is measured by two wattmeter method. The ratio of the readings of the two wattmeters connected for 3 phase balanced load is 1:4. The load is inductive. Find the load power factor.		7				
314	5	A 3-phase, 10 kVA load has a PF of 0.342. The power is measured by two wattmeters method. Find the reading of each wattmeter when the PF is lagging.		2.0				
315	5	Two wattmeters connected to a 3-phase load indicate the total power input to be 12kW. The power factor is 0.6. Determine the readings of each wattmeter		2				
316	5	Two wattmeter's connected to measure three phase power for star connected loads read 10.37 Kw and 5.185 Kw. The line current is 20 Amp. Calculate (i) Line and phase voltage. (ii) Resistance and reactance per phase.		4				
317	5	Two wattmeter's connected to measure three phase power for star connected loads read 12.37 Kw and 6.12 Kw. The line current is 12 Amp. Calculate Line and phase voltage.		2				
318	5	The input power to a 3- phase star connected balanced load was measured by the two wattmeter method. The reading of the two wattmeters are 3.15 kW and -1.55 kW respectively. The line voltage is 400 V. Find: (1) Total active power (2) The power factor (3) line current (4) Impedance in each branch.		4.0				
319	6	Discuss the Faraday's laws of electromagnetic induction?		4				

L.J Institute of Engineering and Technology, Ahmedabad.

Fundamental of Electronics and Electrical Engineering (FEE)

Question Bank (SEM-II-2023 CE/IT/CSD/AIML/AIDS/RAI/CS&IT/CSE/CST/CEA Engineering)

Note : This question bank is only for reference purpose. LJU Test question paper may not be completely set from this question bank.

Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
320	6	According to lenz's law, the direction of induced emf is opposite to the applied voltage i.e. E=-N dϕ/dt, where dϕ/dt = _____		1	Number of turns in primary winding	Number of turns in secondary winding	magnetic flux density	rate of change of magnetic flux
321	6	Which among the following is true about Faraday's law of Induction?	A	1	An emf is induced in a conductor when it cuts the magnetic flux	An emf is induced in a conductor when it moves parallel to the magnetic field	An emf is induced in a conductor when it moves perpendicular to the magnetic field	An emf is induced in a conductor when it is just entering a magnetic field
322	6	What is proportional to the magnitude of the induced emf in the circuit?	C	0.5	Rate of change of current in the circuit	Rate of change of resistance offered	Rate of change of magnetic flux	Rate of change of voltage
323	6	Illustrate construction of core type and shell type transformer with diagram.		3				
324	6	Discuss working principle of 1-phase transformer along with construction		7				
325	6	What is the constructional difference between core type and shell type transformer? What are the merits and demerits of each?		3				
326	6	What is the constructional difference between core type and shell type transformer?		3.00				
327	6	Which of the following statements is/are true for transformers? i) In one to one transformer primary voltage is equal to secondary voltage. ii) Natural cooling is more effective in shell type transformers. iii) For underground work, bank of three single phase transformers are preferable.	C	1	i) is true, ii) and iii) are false	i) and iii) are true	i) and iii) are true, ii) is false	All are ture
328	6	R.M.S value of induced E.M.F in primary winding with N1 turns is given by,	B	1	1.44 *f* N1 * øm	4.44 *f* N1 * øm	14.4 *f* N1 * øm	144 *f* N1 * øm
329	6	The primary and secondary of a transformer are _____ coupled but _____ connected	A	1	magnetically, not electrically	electrically, not magnetically	magnetically, also magnetically	electrically, also electrically
330	6	Elaborate working principle of transformer in detail and also derive E.M.F. equation of transformer.		7				
331	6	Discuss various connections of three phase transformer with diagram.		7				
332	6	Discuss the principle of operation and construction of 3-phase transformer.		7				
333	6	The apparent power drawn by an A.C. circuit is 10 kVA and active power is 8 kW. The reactive power in the circuit is	B	1	4kVAR	6kVAR	8kVAR	10kVAR
334	6	For a transformer, the induced EMF on primary is 199.8V with turns at 50Hz frequency. What is the maximum flux in the core?	B	1	18 Wb	18 mWb	1.8 Wb	1.8 mWb
335	6	Lamination of the transformer core is made of	B	0.5	Cast Iron	Silicon Steel	Aluminum	Cast Steel
336	6	Breather is provided in a transformer to	A	0.5	Absorb moisture of air during breathing	provide cold air in the transformer	filter the transformer oil	None of above
337	6	Which of the following losses varies with the load in the transformer?	B	1	Core loss	Copper loss	both (a) and (b)	None of above
338	6	A transformer transform	B	1	Cureent	Voltage & Current	frequency	voltage
339	6	Transformer core are laminated in order to	C	0.5	Reduce hysteresis loss	Reduce hysteresis & eddy current loss	Minimize eddy current loss	Copper loss
340	6	The transformer ratings are usually expressed in terms of	C	0.5	KW	KVAR	KVA	Volts
341	6	Which winding in a transformer has more number of turns?	C	1	Secondary winding	primary winding	High voltage winding	Low voltage winding
342	6	Oil is provided in an oil-filled transformer for	D	1	Lubrication	Insulation	cooling	both cooling and insulation
343	6	The path of magnetic flux in a transformer should have	B	0.5	Low resistance	Low reluctance	High resistance	High reluctance
344	6	Buchholz relay is used for the protection	D	0.5	Alternator	AC motor	DC motor	Transformer
345	6	The friction loss in a transformer is	C	0.5	0.2	0.5	0	more than 50%

L.J Institute of Engineering and Technology, Ahmedabad.

Fundamental of Electronics and Electrical Engineering (FEE)

Question Bank (SEM-II-2023 CE/IT/CSD/AIML/AIDS/RAI/CS&IT/CSE/CST/CEA Engineering)

Note : This question bank is only for reference purpose. LJU Test question paper may not be completely set from this question bank.

Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
346	6	A shell-type transformer has	B	0.5	High eddy current losses	Low magnetic leakage	Low hysteresis losses	all of above
347	6	Which type of winding is used in a 3-phase shell type transformer?	C	0.5	Rectangular Type	Cylindrical Type	Sandwich Type	Circular type
348	6	The transformer laminations are insulated from each other by	C	0.5	Mica strip	Paper	Thin coating of Varnish	Any of the above
349	6	The change in volume of transformer cooling oil due to variation of atmospheric temperature during day and night is taken care of by which part of transformer ?	A	0.5	Conservator tank	Buchholz relay	bushings	breathers
350	6	An ideal transformer is one which has	A	1	no losses and magnetic leakage	interleaved primary and secondary windings	a common core for its primary and secondary windings	core of stainless steel and winding of pure copper metal
351	6	In a transformer resistance between its primary and secondary winding is _____ Ohm.	B	1	100	0	50	230
352	6	Explain the construction of core-type transformer with the help of a diagram		2				
353	6	Derive the final EMF equation for a single-phase transformer		2				
354	6	Derive energy per unit electric charge that is imparted by an energy source equa		5				
355	6	Which of the following is not a part of transformer installation?	D	0.5	Breather	Conservator tank	Buchholz relay	Exciter
356	6	The two-secondary voltage of a center tap transformer are_____.	B	0.5	Equal and 90 phase shifted	Equal and 180 phase shifted	Equal and in phase	Equal and 270 phase shifted
357	6	If Single phase transformer having 350 primary winding turns is connected to 400V, 50 Hz A.C. Supply, what will be the induced e.m.f. in the secondary winding if secondary winding has 1050 turns?	B	1	1000	1200	750	800
358	7	The speed of rotating magnetic field Ns is given by _____	A	1	120f/p	120p/f	f/p	p/f
359	7	Discuss how the rotating magnetic field is produced in three phase induction motor.		4				
360	7	Prove that when three phase stator stationary windings are excited by balanced three phase a.c. supply then the resulting field produced is rotating magnetic field with constant magnitude. (Using Two Instants)		3				
361	7	Explain the term rotating magnetic field with proper diagrams in case of a three phase induction motor.		7				
362	7	How three phase induction motor works? Also discuss slip.		3				
363	7	Deduce expressions for the resultant flux with phasor diagrams for three different values of Θ and prove that when 3ϕ winding is supplied from 3ϕ supply, a rotating magnetic field is produced.		3				
364	7	In three-phase squirrel-cage induction motors	C	1	Rotor conductors are kept open	Rotor conductor ends are short-circuited through slip rings	Rotor conductors are short-circuited through end rings	Rotor conductors are connected to the insulation
365	7	Give a comparison between squirrel cage induction motor and wound rotor induction motor.		2				
366	7	When the rotor of three phase induction motor is blocked then the slip is	A	1	1	0	0.5	INFINITE
367	7	The rotor winding of a 3-phase wound rotor induction motor is generally	A	0.5	Star	Delta	Series	parallel
368	7	If the air gap between the rotor and stator of a 3-phase induction motor is increased, then leakage reactance is	A	1	Increased	Decreased	zero	any of above
369	7	The stator core of a 3- phase induction motor is laminated in order to reduce the	A	1	Eddy current loss	Hysteresis loss	Both eddy current and hysteresis I loss	Weight of the stator
370	7	In a 3 phase squirrel cage induction motor	A	1	Rotor conductors are short circuited through end rings	Rotor conductor ends are short circuited through slip rings	Rotor conductors are kept open	None of the above

L.J Institute of Engineering and Technology, Ahmedabad.

Fundamental of Electronics and Electrical Engineering (FEE)

Question Bank (SEM-II-2023 CE/IT/CSD/AIML/AIDS/RAI/CS&IT/CSE/CST/CEA Engineering)

Note : This question bank is only for reference purpose. LJU Test question paper may not be completely set from this question bank.

Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
371	7	The rotor of a 3-phase wound rotor induction motor is provided with	B	1	Single phase winding	Three phase winding	Heavy copper or aluminum bars placed in rotor slots	Heavy short circuited end rings
372	7	In a 3-phase slip ring induction motor, brushes are connected to	A	0.5	External star connected resistors	Dc supply	3- ac supply	Equalizing coils
373	7	Show that magnitude of resultant flux of rotating magnetic field in three phase induction motor remains same using necessary derivation.		3				
374	7	Show that magnetic field produced by three phase induction motor is rotating and has constant magnitude with necessary derivations.		3.0				
375	7	Show that a rotating magnetic field is produced in the air-gap, when a balanced three phase A.C. supply is given to the stator of a 3-phase induction motor. Justify your claim with necessary mathematical equations.		3.0				
376	7	Which of the following statements is true? (i)EMF is induced in the rotor (ii)Speed of rotor is always more than synchronous speed (iii)Stator conductors are shorted		1	Only (i)	Only (ii)	Both (i) and (ii)	Both (i) and (iii)
377	7	Differentiate between Squirrel cage and slip-ring type rotor.		3				
378	7	Obtain the equation of resultant flux for rotating magnetic field at angle 60º and 120º with phasor diagram.		3				
379	7	Describe the construction of rotor for a slip ring type three phase induction motor		2				
380	7	Describe the construction of rotor for a squirrel cage type three phase induction motor		7				
381	7	Differentiate slip-ring and squirrel cage induction motor		2				
382	7	Rotor resistance speed control method is applicable in	C	0.5	Squirrel cage induction motor	Capacitor Start Motor	Slip Ring induction motor	Shaded pole Motor
383	7	The frame of an induction motor is usually made of	B	1	Silicon steel	Cast iron	Aluminum	Bronze
384	7	Which of the following component is usually fabricated out of silicon steel?	A	0.5	Stator core	Bearings	Shaft	None of the above
385	7	Which of the following motor has high starting torque?	A	1	Slip ring Induction motor	Squirrel cage induction motor	Both A and B	None of the above
386	7	At standstill condition the value of slip is	C	1	Zero	Infinity	one	None of the above
387	7	Rotor resistance speed control method is applicable in	A	1	Slip Ring induction motor	Squirrel cage induction motor	Both A and B	None of the above
388	7	An induction motor is analogous to	B	1	Auto-transformer	Two windings transformer with secondary short circuited	Two windings transformer with secondary open circuited	Synchronous motor
389	7	Induction motors have the advantage of	D	1	Less Maintenace	Less cost	Simple in construction	All of the above
390	7	An induction motor works with	A	1	AC only	DC only	Ac and DC both	None of the above
391	7	The frame of an induction motor is made of	C	1	Aluminum	Silicon steel	Closed grained cast iron	Stainlees steel
392	7	Explain different parts of Electrotechnical energy alteration device with neat diagram.		5				
393	7	If Ns is the synchronous speed and s the slip. Then actual running speed of an induction motor will be	C	0.5	Ns	SNs	(1-S)Ns	(Ns -1)S
394	7	Capacitor start capacitor run induction motor has_____	D	1	Low speed	Low power factor	Low starting torque	High starting torque
395	7	Discuss working of single phase induction motor with diagram.		7				
396	7	Describe the double revolving field theory for a single-phase induction motor.		2				
397	7	Why 1-phase induction motor is not self-starting?		3				
398	7	Mention the types of single phase induction motor. Explain any one of them.		7				
399	7	Elaborate working of capacitor-start capacitor-run 1-phase induction motor.		5				
400	7	Describe the stator construction of a single phase induction motor.		4				

L.J Institute of Engineering and Technology, Ahmedabad.

Fundamental of Electronics and Electrical Engineering (FEE)

Question Bank (SEM-II-2023 CE/IT/CSD/AIML/AIDS/RAI/CS&IT/CSE/CST/CEA Engineering)

Note : This question bank is only for reference purpose. LJU Test question paper may not be completely set from this question bank.

Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
401	7	In a split-phase motor, the running winding should have	C	0.5	High resistance and low inductance	High resistance and High inductance	Low resistance and high inductance	Low resistance and low inductance
402	7	If the capacitor of a single-phase motor is short-circuited	A	1	The motor will not start	motor will run in the same direction at a reduced speed	motor will run in the reverse direction	None of the above
403	7	In a split-phase motor	D	0.5	Both starting and running windings are connected through a centrifugal switch	Centrifugal switch is used to control supply voltage	The running winding is connected through a centrifugal switch	The starting winding is connected through a centrifugal switch
404	7	Which of the following motor will have a relatively higher power factor?	C	1	Capacitor start motor	Shaded pole motor	Capacitor run motor	Split phase motor
405	7	If a single-phase induction motor runs slower than normal, the most likely defect is	C	1	Short circuit winding	Open circuit winding	Wrn bearing	All of the above
406	7	State significance of the back emf in DC motor.		3				
407	7	Classify various DC motors.		3				
408	7	Prepare a list of parts of a DC machine. Discuss various parts in detail with neat and clean diagram		7				
409	7	How D.C. motor works?		4				
410	7	Which of the following rule is used to determine the direction of rotation of D.C motor?	D	0.5	Columb's Law	Lenz's Law	Fleming's Right-hand Rule	Fleming's Left-hand Rule
411	7	Which part of the DC motor can sustain maximum temperature rise?	D	0.5	Armature Winding	Field winding	Slip Ring	Commutator
412	7	By looking at which particular part of the motor we can Identify a "DC motor"?	C	1	Shaft	Field winding	Commutator	Armature winding
413	7	According to Fleming's left-hand rule if the forefinger points in the direction of the field than the middle finger will point in the direction of	A	1	Current in the conductor	Resultant force on the conductor	Movement of the conductor	None of above
414	7	Where is field winding mounted in a DC machine?	A	0.5	Stator	Rotor	absent	Anywhere
415	7	What are the materials used for brushes in dc machines?	B	0.5	Iron	Carbon	Aluminum	Steel
416	7	Which of the following part is used in construction of DC machine but not in AC machine?	C	0.5	Armature Winding	Field winding	Commutator	Shaft
417	7	Which of the following rule is used to determine the direction of rotation of D.C motor?	C	0.5	Fleming's Left-hand Rule	Coulomb's Law	Fleming's Right-hand Rule	Faraday's law
418	8	The forward voltage drop across a silicon diode is about	B	1	0.3	0.7.	10	3
419	8	The forward voltage drop across a Germanium diode is about	A	1	0.3	0.7.	10	3
420	8	The leakage current in a diode is due to	A	1	minority carriers	majority carriers	junction capacitance	none of the above
421	8	If the temperature of a diode increases, then leakage current	C	1	Remains the same	Decreases	increases	becomes zero
422	8	If the doping level of a diode is increased, the breakdown voltage	A	1	is decreased	Remains the same	is increased	becomes zero
423	8	How many junction/s do a diode consist?	B	1	0	1	2	3
424	8	When a PN junction is reverse-biased	C	1	Holes and electrons tend to concentrate towards the junction	The barrier tends to break down	Holes and electrons tend to move away from the junction	None of the above
425	8	Elaborate forward biasing and revese biasing of PN junction diode with diagram.		5				
426	8	Discuss VI characteristics of PN junction diode.		4				
427	8	Elaborate forward characteristics of diode.		2				
428	8	Define terms (i) Knee voltage (ii) Barrier potential (iii) Reverse satuaration current (iv) Forward bias (v) Reverse bias		5				
429	8	which of the following statement is true for N-type semiconductor?	B	1	Holes are majority carriers and trivalent atoms are the dopants	Holes are minority carriers and pentavalent atoms are the dopants	Electrons are minority carriers and pentavalent atoms are the dopants	electrons are majority carriers and trivalent atoms are the dopants

L.J Institute of Engineering and Technology, Ahmedabad.

Fundamental of Electronics and Electrical Engineering (FEE)

Question Bank (SEM-II-2023 CE/IT/CSD/AIML/AIDS/RAI/CS&IT/CSE/CST/CEA Engineering)

Note : This question bank is only for reference purpose. LJU Test question paper may not be completely set from this question bank.

Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
430	8	which of the following statement is true for P-type semiconductor?	A	1	Holes are majority carriers and trivalent atoms are the dopants	Holes are minority carriers and pentavalent atoms are the dopants	Electrons are minority carriers and pentavalent atoms are the dopants	electrons are majority carriers and trivalent atoms are the dopants
431	8	If trivalent impurity is added to intrinssic semiconductor then material becomes	B	1	N-type semiconductor	P-type semiconductor	Conductor	Insulator
432	8	If pentavalent impurity is added to intrinssic semiconductor then material becomes	A	1	N-type semiconductor	P-type semiconductor	Conductor	Insulator
433	8	The forward current through a P-N junction diode is due to_____ carriers.	B	1	Minority carriers	Majority carriers	Both minority and majority carriers	None of these
434	8	The voltage at which the forward diode current stars increasing rapidly is known as the _____ voltage of a diode.	B	1	Breakdown	Cut-in	Peak inverse	Reverse
435	8	The reverse voltage across non conducting diode is equal to_____	C	1	Cut-in voltage	Breakdown voltage	Supply voltage	None of these
436	8	The reverse saturation current in germanium diode is of the order of _____	A	1	Few micro amperes	few nA	few mA	few Ampere
437	8	The reverse saturation current in silicon diode is of the order of _____	A	1	Few nano amperes	few nA	few mA	few Ampere
438	8	The knee voltage of a diode is approximately equal to the	B	1	Applied voltage	Barrier potential	Breakdown voltage	Forward voltage
439	8	Explain formation of depletion region in unbaised P-Njunction diode.		2				
440	8	In forward bias of a PN Junction diode, _____	D	1	There is increase in barrier potential	Widening of depletion layer takes place	Resistance of diode is very high	Free electrons jump from atom to atom to fill up the holes present there
441	8	The junction potential depends on	D	0.5	type of semiconductor	amount of doping	Temperature	All of these
442	8	Draw and explain the Half wave Rectifier.		2				
443	8	Draw the circuit diagram and input output waveform of Half wave rectifier.		5				
444	8	Rectification can be done by using _____	C	1	Transformers	Conductors	Half wave rectifier	None of above
445	8	Efficiency of half wave rectifier is _____	C	0.5	50%	0.812	0.406	0.453
446	8	The function of transformer in rectifier is _____	D	1	to convert AC. Into D.C.	to filter AC components	to Step up input voltage	to step down output voltage
447	8	In half wave rectifier, Diode conducts in _____ of the ac supply	D	1	only positive half cycle	only negative half cycle	both the halfcycle	only one half cycle
448	8	The average load current for a HWR is_____	D	1	$I_m/2\pi$	$I_m/2\pi$	$2I_m/\pi$	$2I_m/\pi$
449	8	The average output voltage of a HWR is_____	B	0.5	$V_m/2\pi$	$V_m/2\pi$	$2V_m/\pi$	$2V_m/\pi$
450	8	If the output voltage of HWR is 10V dc, then the approximate value of rms secondary voltage will be____	B	1	20V	22 V	18V	24 V
451	8	The RMS load current of HWR is given by	B	0.5	$I_m/2\pi$	$I_m/2\pi/2$	$2I_m/2\pi$	$I_m/\pi 2I_m/\pi$
452	8	A half wave rectifier circuit using ideal diode has an input voltage of 20 sin ωt. Then the average and RMS values of output voltage respectively are_____	C	1	6.36V and 5 V	3.18V and 5 V	6.36V and 10 V	3.18V and 10 V
453	8	The averaged DC voltage of a half wave rectifier circuit is _____ of the value of peak input voltage	D	1	0.048	0.318	0.062	0.0318
454	8	A Crystal diode that has an internal resistance of 20Ω is used for rectification(Half wave). If the supply voltage is 50sinωt and the load resistance is 800Ω, then find the r.m.s value of the load current	A	1	30.5 mA	3.05 mA	20.5 mA	2.05 mA
455	8	The r.m.s. value of Half-wave Rectified symmetrical square wave current of 2A is___	B	1	1/ √2A	√2A	√2A	√2/3A
456	8	The RMS value of halfwave rectified current is 10 A.Its RMS value for full wave rectification would be_____.	A	1	14.14 A	10A	20 A	31.4 A
457	8	A diode having internal resistance 20 Ω is used for half wave rectifier. If the applied voltage V=50 sin ωt and RL = 800 Ω, The value of ILdc = _____ mA	B	0.5	60.98	19.4	15.52	39.38
458	8	In fullwave rectfier with centerapped transformer, How many diodes are used ?	B	1	One	Two	Four	Three
459	8	Efficiency of full wave rectifier is _____	B	0.5	50%	0.812	0.406	0.453

L.J Institute of Engineering and Technology, Ahmedabad.

Fundamental of Electronics and Electrical Engineering (FEE)

Question Bank (SEM-II-2023 CE/IT/CSD/AIML/AIDS/RAI/CS&IT/CSE/CST/CEA Engineering)

Note : This question bank is only for reference purpose. LJU Test question paper may not be completely set from this question bank.

Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
460	8	The average load current for a FWR is_____	C	1	$I_m/2\pi$	$I_m/2\pi$	I_m/π	$2I_m/\pi$
461	8	The average output voltage of a FWR is_____	C	1	$V_m/2\pi$	$V_m/2\pi$	$2V_m/\pi$	$2V_m/\pi$
462	8	The RMS load current of FWR is given by	A	1	$I_m/\sqrt{2}$	$I_m/\sqrt{2} * I_m$	$2I_m/\pi$	$I_m/\pi 2I_m/\pi$
463	8	The efficiency of FWR is _____ than that of a HWR.	A	1	Twice	three times	Half	Four times
464	8	The two secondary voltage of a center tap transformer are_____.	C	1	Equal and in phase	Equal and 90 phase shifted	Equal and 180 phase shifted	Equal and 270 phase shifted
465	8	In a FWR, each diode conducts approximately for _____	B	0.5	0°	180°	90°	360°
466	8	The average load current of a FWR is_____ as that of HWR.	B	0.5	same	Twice	half	three times
467	8	Describe working of full-wave rectifier with necessary waveforms. Obtain expression for dc output voltage		7				
468	8	Describe working of Half-wave rectifier with necessary waveforms. Obtain expression for dc output voltage		7				
469	8	Describe working of full-wave rectifier.(Wave forms are not necessary).		2				
470	8	A Crystal diode that has an internal resistance of 20Ω is used for rectification. If the supply voltage is 50sinωt and the load resistance is 800Ω, then find the r.m.s value of the load current.		1	60 mA	22.4 mA	20.5 mA	30.5 mA
471	8	A centre tap full wave transformer consists of _____ diode/s while bridge rectifier consists of _____ diode/s.	D	0.5	two, three	three, four	three, two	two, four
472	8	For Full wave rectifier, r.m.s. current increases by _____ % as compared to that of Half wave rectifier.	A	0.5	41.4	20.7	5.6	34.7
473	8	Define the rectification and describe the full wave bridge rectifier with the help of neat circuit diagram and waveforms.		5				
474	8	Give the advantages of Full wave bridge rectifier over centre tap rectifier. Explain bridge rectifier with neat diagram. Also draw load voltage, load current, diode voltage waveforms.		7				
475	8	Efficiency of bridge rectifier is _____	B	1	50%	0.812	0.406	0.453
476	8	The average load current for a bridge rectifier is_____	C	1	$I_m/2\pi$	$I_m/2\pi$	I_m/π	$2I_m/\pi$
477	8	The average output voltage of a bridge rectifier is_____	C	0.5	$V_m/2\pi$	$V_m/2\pi$	$2V_m/\pi$	$2V_m/\pi$
478	8	The RMS load current of bridge rectifier is given by	A	1	$I_m/\sqrt{2}$	$I_m/\sqrt{2} * I_m$	$2I_m/\pi$	$I_m/\pi 2I_m/\pi$
479	8	The average load current of a bridge rectifier is_____ as that of HWR.	B	1	same	Twice	half	three times
480	8	In bridge rectifier, How many diodes are used ?	C	0.5	One	Two	Four	Three
481	8	We want a peak load voltageof 40 V out of a bridge rectifier.What is the approximate rms value of the secondary voltage?	C	0.5	0 V	14.4 V	28.3 V	56.6 V
482	8	Which of the following is true for a bridge rectifier? (i) It offers full wave rectification (ii) It compulsorily uses centre tapped transformer (iii) It can operate directly on 230V AC supply	C	1	Both (i) and (ii)	Both (ii) and (iii) are true	Both (i) and (iii) are true	Only (iii) is true
483	8	If a peak load voltage of 60 V out of a bridge rectifier. What is the approximate rms value of the secondary voltage?	B	1	28.3	42.42	45.4	29.6
484	8	Bridge rectifier is used to overcome the disadvantages of full wave centre tapped rectifier such as	D	0.5	High PIV	larger diodes size	High cost	all of these
485	8	Power is delivered to load in Bridge rectifier for _____ wave of the input cycle	A	0.5	full	half	quarter	one-third
486	8	Match the following: 1) ILdc (HWR) a) Vm/√2 2) ILrms (FWR) b) Vm/π 3) VLdc (HWR) c) Im/π 4) VLrms (FWR) d) Im/√2	B	0.5	1-d; 2-c; 3-b; 4-a	1-c; 2-d; 3-b; 4-a	1-a; 2-b; 3-d; 4-c	1-b; 2-a; 3-d; 4-c
487	8	Differentiate half wave rectifier, full wave rectifier and bridge rectifier with the help of following points: a) No of diodes b) Transformer necessity c) Average dc current d) Average dc voltage e) rms current		5				
488	9	Descibe operation of biased and unbiased NPN and PNP transistor in detail		7				
489	9	Write the advantages of transistor, and explain why it is called ”Bipolar Transistor”?		3				
490	9	Draw the symbol of NPN and PNP transistor. Also discuss applications of transistor.		3				
491	9	Indicate and explain various current components flowing in P-N-Ptransistor with forward biased emitter junction and reverse biased collector junction		2				
492	9	The term transistor is combination of	B	1	trans and resistor	transfer and resistor	transport and Resistor	transform and resistor
493	9	Transistor is a_____ device.	B	1	Unipolar	Bipolar	Multipolar	linear

L.J Institute of Engineering and Technology, Ahmedabad.

Fundamental of Electronics and Electrical Engineering (FEE)

Question Bank (SEM-II-2023 CE/IT/CSD/AIML/AIDS/RAI/CS&IT/CSE/CST/CEA Engineering)

Note : This question bank is only for reference purpose. LJU Test question paper may not be completely set from this question bank.

Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
494	9	The conduction in BJT takes place due to_____	C	1	Electrons	Holes	Both electrons and Holes	Protons
495	9	Which of the following is/are true statements for BJT? 1). The arrow in transistor symbol is placed on emitter terminal. 2). Emiiter layer has lowest doping concentration. 3). Emiiter layer has higest doping concentration.	D	0.5	statement-1 & statement-2	Only statement-1	Only statement-2	statement-1 & statement-3
496	9	Base is always a_____ and _____ doped layer.	A	0.5	Thin, Lightly	Thin, Heavily	Thick, Lighlty	Thick, Heavily
497	9	In most transistors the collector region is made physically larger than the emitter region for_____	A	1	better heat dissipation	higher value of current gain.	better conduction	None of these.
498	9	A transistor has how many pn junctions?	B	1	1	2	3	4
499	9	In an npn transistor, the majority carriers in the emitter are	A	1	Free electrons	Holes	Both	Neither free elctrons nor Holes
500	9	The emitter diode is usually	C	1	Nonconducting	Reverse biased	Forward biased	Operating in the breakdown region
501	9	The base of an npn transistor is thin and	B	1	Heavily doped	Lightly doped	Metallic	Doped by a pentavalent material
502	9	In a pnp transistor, the major carriers in the emitter are	B	1	Free electrons	Holes	Both	Neither free elctrons nor Holes
503	9	What is the most important fact about the collector current?	D	0.5	It is measured in Amperes.	It equals the base current divided by the current gain.	It is small	It approximately equals the emitter current
504	9	Discuss various region of operation of Bipolar junction transistor.		3				
505	9	Draw the circuit diagram of NPN and PNP transistor biased in active region.		2				
506	9	Transistor operates in forward active region when	C	0.5	Base emitter junction is reverse biased and collector base junction is forward biased.	Both junctions are forward biased	Base emitter junction is forward biased and collector base junction is reverse biased.	Both junctions are reverse biased.
507	9	Transistor operates in revese active region when	A	1	Base emitter junction is reverse biased and collector base junction is forward biased.	Both junctions are forward biased	Base emitter junction is forward biased and collector base junction is reverse biased.	Both junctions are reverse biased.
508	9	Transistor operates in cutoff region when	D	0.5	Base emitter junction is reverse biased and collector base junction is forward biased.	Both junctions are forward biased	Base emitter junction is forward biased and collector base junction is reverse biased.	Both junctions are reverse biased.
509	9	Transistor operates in saturation region when	B	1	Base emitter junction is reverse biased and collector base junction is forward biased.	Both junctions are forward biased	Base emitter junction is forward biased and collector base junction is reverse biased.	Both junctions are reverse biased.
510	9	Transistor operates as an amplifier in	B	0.5	Cut off region	Forward active region	Reverse active region	Saturation region
511	9	Match the following w.r.t transistor biasing (1) FR condition a) Saturation region (2) FF condition b) Active region (3) RR Condition c) Inverted region (4) RF condition d) Cut-off region	D	1	1-a, 2-b, 3-c, 4-d	1-b, 2-a, 3-d, 4-c	1-b, 2-c, 3-a, 4-d	1-b, 2-a, 3-c, 4-d
512	9	When the transistor used in cut-off or saturation state it acts as?	C	1	Amplifier	AND gate	Switch	Forward bias
513	9	Which of the following statements is/are true? 1.In NPN transistor electrons are minority carriers. 2.In PNP transistor Holes are majority carriers 3.Value of α of transistor is less than 1. 4 Transistor is a current operated device.	D	1	Only 2 and 3	Only 2 and 4	Only 3 and 4	Only 2, 3 and 4

L.J Institute of Engineering and Technology, Ahmedabad.

Fundamental of Electronics and Electrical Engineering (FEE)

Question Bank (SEM-II-2023 CE/IT/CSD/AIML/AIDS/RAI/CS&IT/CSE/CST/CEA Engineering)

Note : This question bank is only for reference purpose. LJU Test question paper may not be completely set from this question bank.

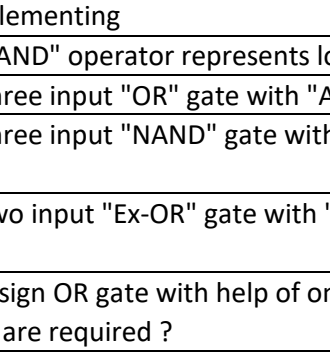
Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
514	9	Describe operation of biased NPN transistor in detail.		3				
515	9	In an NPN transistor V_{CE} = 0.2V and V_{BE}= 0.7V, so in this condition transistor work in a ---------region		1	Cut-off	Saturation	Active	Reverse
516	9	The value for β for transistor is generally------	C	1	1	0.92 to 0.99	20 to 200	above 500
517	9	In forward active region of a transistor _____.	A	0.5	IE = IC+IB	IE = IB-IC	IE = IB	IB = IC+IE
518	9	Most of the electrons in the base of a npn transistor _____	B	0.5	flow into the emitter	flow into the collector	flow out of the base lead	flow into the base supply
519	9	For BJT, the impurity concentration in the emitter is ____, in base is _____ and in collector is _____:	C	0.5	high, moderate, low	high, zero, low	high, low, moderate	moderate, low, high
520	9	If the current gain is 100 and the collector current is 10 mA, the base current is	B	0.5	10 µA	100 µA	1 A	10 A
521	9	Draw CE connection of PNP and NPN transistor.		3				
522	9	Draw and discuss the output characteristics of common emitter configuration.		3				
523	9	Draw and discuss base curve for CE configuration.		3				
524	9	Justify how the emitter current is nearly equal to the collector current in active region		3				
525	9	The beta of a transistor is the ratio of the	B	1	Collector current to emitter current	Collector current to base current	Base current to collector current	Emitter current to collector current
526	9	For CE configuration, amplification factor is given by ratio of	B	1	Collector current to emitter current	Collector current to base current	Base current to collector current	Emitter current to collector current
527	9	Output characterisitcs of CE configuration is a graph of _____versus _____.	C	1	I_B , V_{CE}	I_E ,V_{CE}	I_C , V_{CE}	I_C , V_{CB}
528	9	Input characterisitcs of CE configuration is a graph of _____versus _____.	A	1	I_B , V_{BE}	I_E , V_{BE}	I_C , V_{CE}	I_B, V_{CB}
529	9	For CE configuration, the collector current is propotional to base current only in	D	0.5	saturation region	breakdown region	cutoff region	active region
530	9	Suppose value of V_{CE} is found to be 0.1 V then transisor is in	A	1	saturation region	breakdown region	cutoff region	active region
531	9	When transitor operates in cutoff region then collector current	A	1	is zero	is maximum	is low	Can not be determined
532	9	If the base resistor is open, what is the collector current?	C	1	1 mA	10 mA	0 mA	2 mA
533	9	If the base supply voltage is disconnected, the collectoremitter voltage will equal	B	0.5	0 V	Collector supply voltage	Base emiiter voltage	1 V
534	9	Which of the following is the correct feature of CE configuration?	B	1	Input current is I_C	Input current is I_B	Input resistance is very high	Output resistance is very low
535	9	In CE configuration, if the voltage drop across 5 kΩ resistor connected in the collector circuit is 5V. Find the value of I_B when β=50.	A	1	0.02 mA	0.02 µA	0.35 mA	0.35 µA
536	9	The collector supply voltage for a CE configured transistor is 10V. The resistance in the collector circuit is 800Ω. The voltage drop across the resistor is 0.8V. Find the value of collector emitter voltage	A	1	9.2 V	9.2mV	2.9V	2.9 mV
537	9	Which parameter has to be constant in Output characterisitcs of CE configuration?	A	1	I_B	Ic	I_E	V_{CE}
538	9	The current gain of a common emitter npn transistor is____	C	0.5	the ratio of emitter current to base current	the ratio of collector current to emitter current	the ratio of collector current to base current	the ratio of base current to collector current
539	9	If the collector base junction is more reverse biased in active region of npn transistor, it implies that VCE _____ and IB _____.	A	0.5	increases, decreases	decreases, decreases	increases, remains constant	decreases, increases
540	9	If the current gain is 140 and the collector current is 42 mA, the base current will be ___	D	0.5	30 mA	42 mA	140 mA	0.3 mA
541	9	The early effect in bipolar junction transistor is caused by _____	A	0.5	large collector base reverse bias	Increasing Base width	Emitter width modulation	Decreasing Collector width
542	9	The current gain is ____ when the collector current is 3.5 mA and the base current is 30 µA	A	0.5	116.7	11.67	0.1167	8.57
543	9	When there is no base current in a transistor switch, the output voltage from the transistor is	B	1	Low	High	Unchanged	Unknown
544	9	Explain transistor as a switch		5				

L.J Institute of Engineering and Technology, Ahmedabad.

Fundamental of Electronics and Electrical Engineering (FEE)

Question Bank (SEM-II-2023 CE/IT/CSD/AIML/AIDS/RAI/CS&IT/CSE/CST/CEA Engineering)

Note : This question bank is only for reference purpose. LJU Test question paper may not be completely set from this question bank.

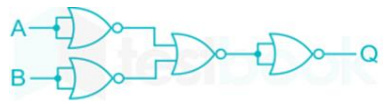
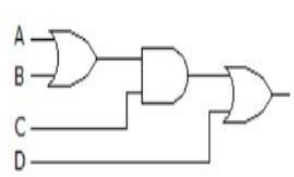
Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
545	9	How transistor act as aswitch? What are limitation?		5				
546	9	To operate BJT as an open switch we have to bias it in	C	1	saturation region	breakdown region	cutoff region	active region
547	9	To operate BJT as an close switch we have to bias it in	A	1	saturation region	breakdown region	cutoff region	active region
548	9	If Vi is zero in below transistor network then it operates 	C	1	an amplifier	as close switch	as open switch	in breakdown region
549	9	The application of transistor operating as a switch is		1	Rectifier	Logic gates	Amplifier	transformer
550	10	Draw the logic symbol and construct the truth table for each of the following gates. [1] Two input NAND gate [2] Three input OR gate [3] Three input EX-NOR gate [4] NOT gate		4				
551	10	Draw symbol and truth table of OR, NOT, AND ,NOR, EX-OR, NAND & EX-NOR gates		3				
552	10	Implement NOT, AND, & OR gates using NAND gates only		3				
553	10	Implement NOT, AND, & OR gates using NOR gates only		3				
554	10	Justify the statement: “NAND and NOR gates are universal gates.”		3				
555	10	Show that NAND & NOR are universal gates		3				
556	10	The relation between the inputs and output of a gate can be expressed mathematically by means of the	B	0.5	characteristics equation	boolean equation	state equation	none of these
557	10	How many input Combinations are possible for three input gate?	A	0.5	8	9	6	3
558	10	The output of a ____ gate is only 1 when all of its inputs are 1	C	0.5	NOR	XOR	AND	NAND
559	10	The _____ operator represents a logical inversion or complementing	C	1	OR	AND	NOT	NOR
560	10	The "AND" operator represents logical	A	1	Multiplication	Division	Addition	Substraction
561	10	For three input "OR" gate with "ABC" are input, Output is 0 if	B	0.5	ABC=001	ABC=000	ABC=111	ABC=110
562	10	For three input "NAND" gate with "ABC" are input, Output is 0 when	C	0.5	ABC=001	ABC=000	ABC=111	ABC=110
563	10	For two input "Ex-OR" gate with "AB" are input, Output is 0 when	D	1	AB=00	AB=11	AB=11	both 1) and 2)
564	10	To design OR gate with help of only NAND gates, How many NAND gates are required ?	C	1	1	2	3	4
565	10	To design AND gate with help of only NAND gates, How many NAND gates are required ?	B	1	1	2	3	4
566	10	To design AND gate with help of only NOR gates, How many NOR gates are required ?	C	1	1	2	3	4
567	10	If a 3-input NOR gate has eight input possibilities, how many of those possibilities will result in a HIGH output?	A	1	1	2	7	8
568	10	For two input "Ex-OR" gate, One input is "A" and other is "0", what is output	C	1	1	0	A	A'
569	10	For which of the following gate, output is low if atleast one input is "1"	B	1	OR	NOR	EX-OR	NOT
570	10	Draw the logic circuit to obtain following boolean expression. Y= AB+BC+A'B'		2				
571	10	Sketch the given boolean expression using one AND and one OR gate only. Y= AB+AC		2				
572	10	Boolean expression Y= A'+B' represents _____ gate.	A	0.5	NAND	NOR	OR	AND
573	10	Boolean expression Y= A'.B' represents _____ gate.	B	1	NAND	NOR	OR	AND
574	10	Boolean expression Y= A.B' + A'B represents _____ gate.	B	0.5	NAND	EX-OR	OR	EX-NOR
575	10	(AB)'=Y is the boolean expression for _____ gate.	A	0.5	NAND	EX-OR	OR	EX-NOR
576	10	Sketch the given boolean expression using one AND and one OR gate only. Y= (A+B)(A+C)		2				
577	10	Temperature variation is a/an		1	Digital signal	Analog signal	Binary signal	Positive signal
578	10	The minimum number of NAND gates required to realize $AB + A\bar{B}C + A\bar{B}\bar{C}$ is	A	1	0	1	2	3

L.J Institute of Engineering and Technology, Ahmedabad.

Fundamental of Electronics and Electrical Engineering (FEE)

Question Bank (SEM-II-2023 CE/IT/CSD/AIML/AIDS/RAI/CS&IT/CSE/CST/CEA Engineering)

Note : This question bank is only for reference purpose. LJU Test question paper may not be completely set from this question bank.

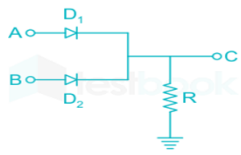
Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
579	10	The output of the logic circuit given below represents _____ gate. 	B	1	NOT	NAND	AND	OR
580	10	The output Y of logic circuit given below is_____ 	A	1	1	0	X.1	X+0
581	10	How many two-input AND and OR gates are required to realize Y = CD +EF +G?	D	1	1,1	1,2	2,1	2,2
582	10	Which of the following logic gate has the following Truth table? <table><tr><th colspan="2">Inputs</th><th>Output</th></tr><tr><th>A</th><th>B</th><th>C</th></tr><tr><td>0</td><td>0</td><td>0</td></tr><tr><td>0</td><td>1</td><td>1</td></tr><tr><td>1</td><td>0</td><td>1</td></tr><tr><td>1</td><td>1</td><td>1</td></tr></table>	D	1	NOT	AND	NOR	OR
583	10	If one of the input of two input EX-OR gate is permanently VCC(High) then this gate will work as _____.	C	1	Transistor	Rectifier	Inverter	Clamper
584	10	Which of these sets of logic gates are known as universal gates?	D	1	XOR, NAND, OR	AND, OR	OR, NOT, NAND	NAND, NOR
585	10	How many Basic gates are required to realize $Y = CD' + EF' + G$?	D	1	3	4	5	6
586	10	How many NAND gates are required to make equation $(A+B)'$	C	1	2	3	4	5
587	10	If two inputs of a NAND gate are shorted, then it is equivalent to_____.	D	1	NOR	NAND	OR	NOT
588	10	When both the input signals A & B of the NOR and NAND gate are connected together, the output of resultant circuit will be equivalent to	D	1	NAND	AND	NOR	NOT
589	10	What will be the Output of the combination of AND & NOT gate, if the inputs are A & B?		1	A+B	$\overline{A.B}$	$\overline{A.B}\,\overline{B}$	$\overline{A+B}$
590	10	How many entries will be in the truth table of a 4-input NAND gate?	D	1	8	10	14	16
591	10	Which of the following logic gates has the following Truth table? <table><tr><th>X</th><th>Y</th><th>Output</th></tr><tr><td>0</td><td>0</td><td>1</td></tr><tr><td>0</td><td>1</td><td>0</td></tr><tr><td>1</td><td>0</td><td>0</td></tr><tr><td>1</td><td>1</td><td>1</td></tr></table>	C	1	OR	NOR	EX-NOR	EX-OR
592	10	If the output of a logic gate is 1 when all the inputs are at logic 0, the gate is _____	D	0.5	OR	NOR	EX-NOR	Both B and C
593	10	Which logic gates output a 1 if their inputs are 0 and 1?	C	0.5	OnLy NAND	NAND and OR gates	NAND, OR, and EX-OR gates	Only NOR gates
594	10	The Boolean expression for the logic circuit shown below is _____ 	B	0.5	CA+CB+CD	CA+CB+D	CA+CD	C(A+B)D'
595	10	The Boolean expression for a 3-input OR gate is _____.	A	0.5	A+B+C	ABC	A+BC	A'+B'+C'
596	10	NAND gate means _____	C	0.5	OR gate followed by an AND gate	AND gate followed by an OR gate	AND gate followed by an inverter	inversion followed by AND gate
597	10	Which of the following statements is/are true? i) EX-NOR gate is low (0) if both the inputs are identical (A= B). ii) In case of EX-OR gate, the output is high (1) when A ≠ B. iii) The output of a two input NOR gate is high (1) if any one or all the inputs are at high (1) level.	B	1	i) is true, ii) and iii) are false	ii) is true, i) and iii) are false	iii) is true, i) and ii) are false	All are true
598	10	Which of the following statements is/are true? i) To design a two input OR gate, only one diode is used. ii) The complement of a product of is equal to the complement of addition. iii) Result of AND on a variable and its complement is zero.	A	1	iii) is true, i) and ii) are false	i) is true, ii) and iii) are false	ii) is true, i) and iii) are false	All are true
599	10	State the rules of boolean algebra		2				
600	10	Discuss the Commutative law.		2				
601	10	Discuss the associative law.		2				
602	10	Discuss the distributive law.		2				
603	10	State and prove AND laws.		2				
604	10	State and prove OR laws.		2				

L.J Institute of Engineering and Technology, Ahmedabad.

Fundamental of Electronics and Electrical Engineering (FEE)

Question Bank (SEM-II-2023 CE/IT/CSD/AIML/AIDS/RAI/CS&IT/CSE/CST/CEA Engineering)

Note : This question bank is only for reference purpose. LJU Test question paper may not be completely set from this question bank.

Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
605	10	Prove the following boolean expressions 1) A+AB= A 2) A+A'B= A+B		2				
606	10	Prove the following boolean expressions 1) A+A'B+AB= A+B		2				
607	10	Reduce the boolean expression AB'+A'B+AB+A'B'		2				
608	10	A+A'=_____	C	1	A	A'	1	0
609	10	A . A'=_____	D	1	A	A'	1	0
610	10	A+1=_____	C	1	A	A'	1	0
611	10	Boolean algebra allows only_____ possible values.	B	1	1	2	3	4
612	10	A' +AB is equal to	C	1	A+B	A	A'+B	A+B'
613	10	A +A' B is equal to	A	1	A+B	A	A'+B	A+B'
614	10	(A+B)' =	B	1	A.B'	A'B'	A.B	A'+B'
615	10	(A.B)' =	D	1	A.B'	A'B'	A.B	A'+B'
616	10	With the help of boolean laws, prove (A+B'+AB) (A+B)A'B'= 0		2				
617	10	Simplify the boolean expression Y= (AB+C) (AB+D)		2				
618	10	Which of the following logical operations could be computed by the following circuit? 	D	1	C = A.B	C = $\bar{A}B$	C= $\overline{A\bar{B}}$	C = $\overline{\bar{A}\bar{B}}$ A+B
619	10	The simplified form of Boolean expression is Y=(((AB‾))‾((A‾B)‾))‾_____	A	1	$\bar{A}B + A\bar{B}$	$\bar{A}\bar{B} + A\bar{B}$	A+B	1
620	10	Which of the following Boolean expression/s is true? (i) A.A‾=0 (ii) A+1=A (iii) A.A=A	B	1	Both (ii) and (iii) are true	Both (i) and (iii) are true	Both (i) and (ii) are true	Only (iii) is true
621	10	Simplification of ABC + ABC	C	1	1	0	ABC	BC
622	10	Simplification of ABCD + AB'CD	D	1	1	ABCD	ABC	ACD
623	10	Match the following: 1) A+A' a) A+B 2) A•1 b) 1 3) A'+AB c) A 4) A+A'B d) A'+B	A	1	1-b; 2-c; 3-d; 4-a	1-b; 2-d; 3-c; 4-a	1-b; 2-a; 3-d; 4-c	1-a; 2-b; 3-c; 4-d
624	10	Match the following: 1) OR Law a) A•A =A 2) AND Law b) A+BC=(A+B)(A+C) 3) Distributive Law c) 1+A=A+1=1 4) Associative Law d) A+(B+C)=(A+B)+C	A	1	1-c; 2-a; 3-b; 4-d	1-a; 2-b; 3-d; 4-c	1-d; 2-c; 3-b; 4-a	1-a; 2-b; 3-c; 4-d
625	10	Design and explain AND gate with diode.		3				
626	10	Design and explain OR gate with diode.		3				
627	10	To design a two input OR gate howmany diodes are required?	B	1	1	2	4	8
628	10	To design a two input AND gate howmany diodes are required?	B	1	1	2	4	8