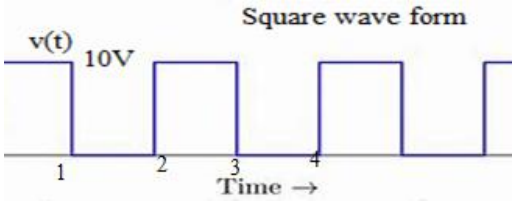
Question bank – BEEC – END SEM REFERENCES

1. Define KCL, KVL with formulae ?
2. Define Voltage division rule ?
3. Define form factor, peak factor ?
4. Calculate the total inductnace in a circuit in which L_1=5H, L_2=10H, L_3=25H are connected in series
5. Draw the VI characteristics of PN junction Diode
6. Draw the symbols for PNP and NPN transistor
7. Classify three terminal voltage regulators
8. Mention few applications of OP AMP
9. Define Branches,loops, nodes ?
10. Calculate the total inductnace in a circuit in which L_1=5H, L_2=10H, L_3=25H are connected in series
11. Draw the series RLC circuit and mention total impedance in the network .
12. Define RMS, average Value in a sinusoidal wave form ?
13. Draw the VI characteristics of zener Diode
14. Explain how diode acts as switch with its equivalent circuit ?
15. Draw the pin diagrams of 7805 and 7905 Ics
16. Mention the applications of LM723
17. Mention the total equivalence inductance in the circuit If two inductors are connected in case i) Series case ii) Parallel
18. Calculate the branch currents in the shunt network if R1=R2= 10KΩ, R3=R4=40KΩ powered with a supply of 20V.
19. Define form factor, peak factor ?
20. Define RMS, average Value in a sinusoidal wave form ?
21. Define Rectification and ripple factor
22. Illustrate the PNP & NPN Transistors with terminal voltages and currents
23. Draw the symbol of OP- AMP IC 741 with input and out put pins
24. Describe the IC 555 with its pin configuratipon
25. State maximum power transfer theorem?
26. Define power factor ?

27. Draw the series RLC circuit and mention total impedance in the network .
28. Define reactive power, real power
29. Draw the circuit symbol for PNP & NPN Transistor
30. Mention different types of clippers and clamper circuits
31. Define slew rate, CMRR
32. Draw the op-amp symbol with input , output pins.

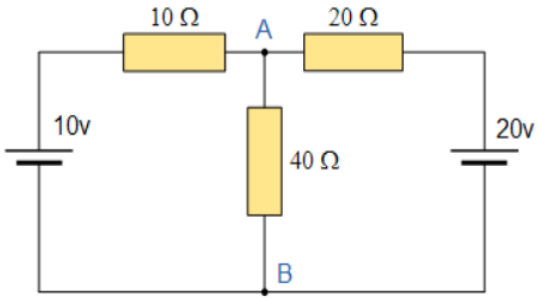
Important Long Questions

1. Enumerate the steps involved in mesh analysis
2. Calculate the average and RMS value of the square wave.



3. Explain the operation of full wave bridge rectifier with neat circuit and output wave form
4. Describe the features of op-amp with its pin configuration
5. Describe the steps involved to do nodal analysis
6. State and explain Thevenin's theorem with its equivalent circuit ?
7. If 2 capacitors are connected in i) series ii) in parallel If C1=10µF & C2= 50 µF Find the maximum energy stored when a 220V DC supply is across the combination?
8. State and explain maximum power transfer theorem with its equivalent circuit ?
9. The current drawn by a pure capacitance of 20µF is 1.382 A from 220V ac supply, find the supply frequency ?
10. If two sinusoidal currents are given by I1= 10 Sin(wt+∏/3) and I2=(15Sin(wt-∏/4), Calculate and plot the phase difference between them in degrees
11. Explain the concept of impedance in Series RL and RC circuit.
12. Calculate i) Frequency ii) RMS VALUE III) AVERAGE VALUE IV) FORM FACTOR in a sinusoidal signal of voltage 40 Sin(628)t

13. A 4.2 V zener is used with the load current is to vary from 10 to 100 mA.Find the value of series resistance R to maintain a voltage of 4.2 V across the load. The input voltage is constant at 12V and the minimum zener current is 5 mA.
14. Explain the operation of center tapped full wave rectifier with neat circuit and output wave form
15. Explain about positive clamper with input and output waveforms
16. Explain how transistor can be used as a switch with an equivalent circuit
17. Describe the following i) OFFSET VOLTAGE ii) CMRR iii) SLEW RATE iv) input impedance v) output impedence v) openloop gain of OP-AMP.
18. Explain about IC 555 TIMER pin configuration , mention the applications of IC 555
19. List out the features of Analog and Digital ICS.
20. Explain about the comparator circuit using OPAMP
21. *Find the Thevenin's voltage across 40 ohm resistance in the given circuit ?*



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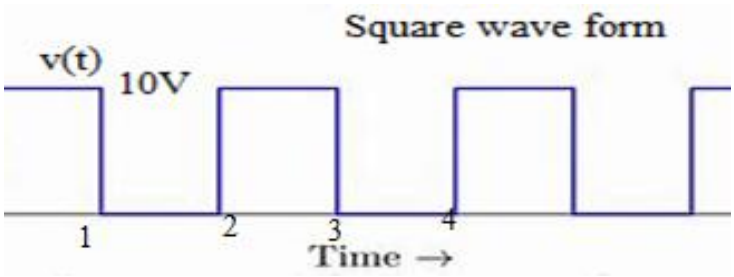
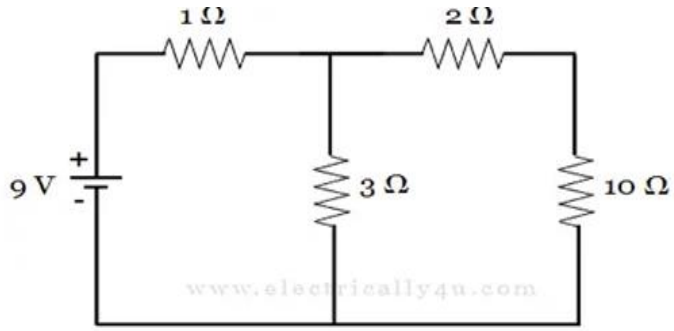
22. *Calculate the average and RMS value of the square wave*



23. *Explain the operation of full wave center tapped rectifier with neat circuit and output wave form*
24. *Classify IC voltage regulators and mention the applications of regulators*

25. *IF four Inductors are connected in case i) parallel each of 60 Henry each ii) in series with L1=L2=10H, L3=L4=20H, then calculate the total equivalence inductance in both cases?*

26. *For the given circuit, determine the current flowing through 10 Ω resistor using Norton's theorem.*



27. *State and explain Thevenin's theorem with its equivalent circuit ?*

28. *Calculate i) Frequency ii) RMS VALUE III) AVERAGE VALUE IV) FORM FACTOR in a sinusoidal signal of voltage 20 Sin(628)t*

29. *Explain the concept of impedance in Series RL and RC circuit.*

30. *Draw the phasor representation of an alternating quantity represent phase lag and phase lead with waveforms*

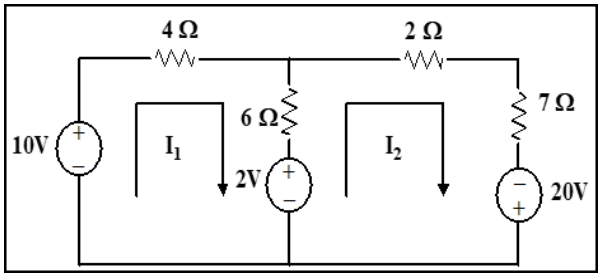
31. *A 300 µF capacitor is connected across is 240V, 50Hz system Determine i) the capacitance reactance ii) R.M.S value of current iii) Equations for voltages and currents*

32. *Explain the operation of half wave rectifier with neat circuit and output wave forms*

33. ***A 6.2 V zener is used with the load current is to vary from 12 to 100 mA.Find the value of series resistance R to maintain a voltage of 6.2 V across the load of 1kΩ. The input voltage is constant at 12V and the minimum zener current is 10 mA.***

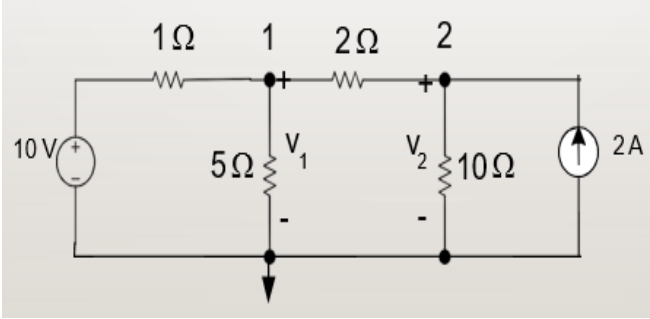
Question bank – BEEC – END SEM REFERENCES

34. *Compare all rectifiers with respect to ripple factor, efficiency, TUF , PIV values.*
35. *Explain how transistor can be used as a switch with its equivalent circuits?*
36. *Classify IC voltage regulators explain about 3 terminal IC voltage regulators*
37. *Explain modes of IC 555 with its PIN configuration*
38. *Mention the applications of OP AMP AND TIMERS*
39. *Describe the characteristics of operational amplifier with pin configuration and symbol*
40. *Write the mesh equations and solve for the currents I1, and I2 ?*



41. *The current drawn by a pure capacitance of 20μF is 1.382 A from 220V ac supply, calculate the supply frequency ?*
42. *Explain the operation of full wave bridge rectifier with neat circuit and output wave form*
43. *Classify the Analog and Digital ICs with few examples*
44. *.State and explain Thevenin's theorem with its equivalent circuit ?*

45. *Determine the Voltages (v1) and(v2)using node analysis*



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46 *State and explain about Nortans Theorem With equivalent circuit*

47 *Calculate i) Frequency ii) RMS VALUE III) AVERAGE VALUE IV) FORM FACTOR in a sinusoidal signal of voltage 40 Sin(628)t*

48 *Define power factor , reactive power and real power , apparent power with formulae.*

49 *Write the polar form of the voltage given by V= Sin [10 ∏ t +∏/3] V obtain its rectangular form ?*

50 *A 200 µF capacitor is connected across is 240V, 50Hz system Determine i) capacitance reactance ii) R.M.S value of current iii) Equations for voltages and currents*

51 *Explain about positive and negative clampers with input and output waveforms*

52 *A 4.2 V zener is used with the load current is to vary from 10 to 100 mA.Find the value of series resistance R to maintain a voltage of 4.2 V across the load. The input voltage is constant at 12V and the minimum zener current is 10 mA.*

53 *Compare PN junction and ZENER diodes in all aspects*

54 *Explain how diode acts as switch with its equivalent circuit ?*

55 *Describe about the LM 339 IC with PIN configuration*

56 *describe the applications of 555 IC timer with its pin configuration*

57 *Explain the operation of comparators with respect to op-amp*

58 *Distinguish three terminal IC voltage regulators .*

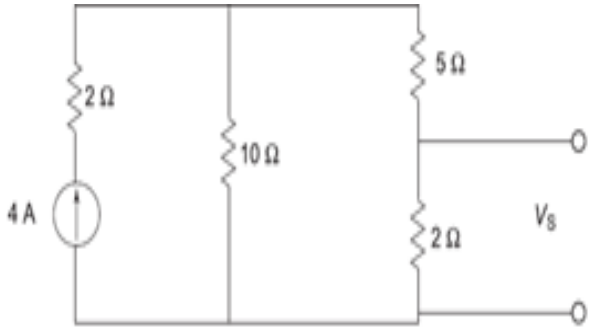
59 *Calculate the total capacitance in a circuit consists of C1=5µF, C2=10 µFconnected in parallel and in series form?*

60 Draw the phasor representation of an alternating quantity represent phase lag and phase lead with waveforms

61 Explain about positive clamper circuits with neat output wave form

62 Draw the opamp characteristics with negative feed back and mention the practical characteristics of op-amp

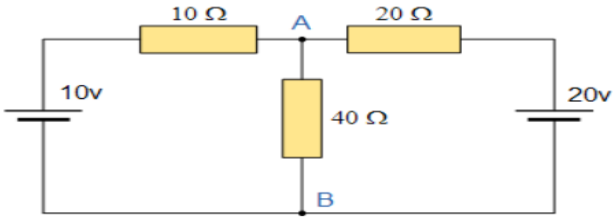
63 Determine the current in the 10Ω resistance and find Vs in the circuit shown



64 If 2 capacitors are connected in i) series ii) in parallel If C1=10μF & C2= 50 μF Find the maximum energy stored when a 220V DC supply is across the combination?

65 *State and explain Maximum power transfer theorem with its equivalent circuit ?*

66 *Find the Thevenin's voltage across 40 ohm resistance in the given circuit ?*



67 *Calculate i) Frequency ii) RMS VALUE III) AVERAGE VALUE IV) FORM FACTOR in a sinusoidal signal of voltage 100 Sin(628)t*

68 *Explain about apperant power, reactive power, real power, power factor with formulae?*

69 *Write the polar form of the voltage given by V= Sin [10 ∏ t +∏/4] V obtain its rectangular form ?*

70 *A Series RL circuit connected with R=4 Ωand inductive reactance XL =3Ω is connected to 100 V , 50 Hz. Find the amount of current, power drawn by the circuit and power factor?*

71 *Explain the operation of positive series clippers with and without reference voltage*

72 *A 6.2 V zener is used with the load current is to vary from 12 to 100 mA.Find the value of series resistance R to maintain a voltage of 6.2 V across the load. The input voltage is constant at 12V and the minimum zener current is 10 Ma*

73 *Describe how transistor acts as a switch with equivalent circuits ?*

74 *Explain the operation of PN junction diode with V-I characteristics ?*

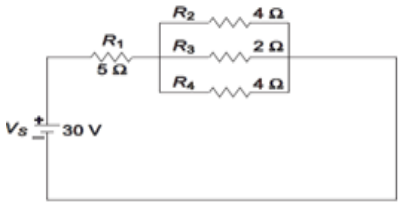
75 *Enumerate about 7805, 7905 Voltage regulators with its pin configuration*

76 *What are the features of op-amp IC-741 , explain with its pin configuration*

77 *Classify IC voltage regulators and mention the applications of regulators*

78 *Explain about IC 555 TIMER pin configuration , mention the features of IC 555*

79 *Calculate the total circuit current in the given circuit*



80. Explain the operation of HALF WAVE rectifier with its operation and Output waveform?