



SRI BHAGAWAN MAHAVEER JAIN COLLEGE
Vishweshwarapuram, Bangalore 560004

Mock Examination Question Paper - January 2019

Course:	I PUC
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Subject:	Electronics
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Max. Marks:	70
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Duration:	3:15 hrs.
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PART- A

I Answer **all** questions:

(10x1=10)

1. Name one advantage of an integrated circuit.
2. What is the unit of conductance?
3. Mention one advantage of digital meters over analog meters.
4. What is the significance of voltage rating for a capacitor?
5. What is reactive power?
6. What is avalanche breakdown?
7. Write the circuit symbol for a PNP transistor.
8. Mention one difference between LCD and LED.
9. Why binary number system is preferred for digital technology?
10. Name one specification for a diode.

PART- B

II Answer any **FIVE** questions:

(5x2=10)

11. Expand VLSI and JFET.
12. What is R_T when two equal valued resistors are connected in parallel and in series?
13. Write any two advantages of SMD resistors.
14. Discuss the variation in impedance with variation of frequency in a series RLC circuit.
15. If a transistor has β_{DC} of 60, what is the value of α_{DC} .
16. Distinguish between positive and negative logic.
17. Write a note on phototransistor.
18. List the first two steps involved in manufacture of PCB.

PART- C

III Answer any **FIVE** questions:

(5x3=15)

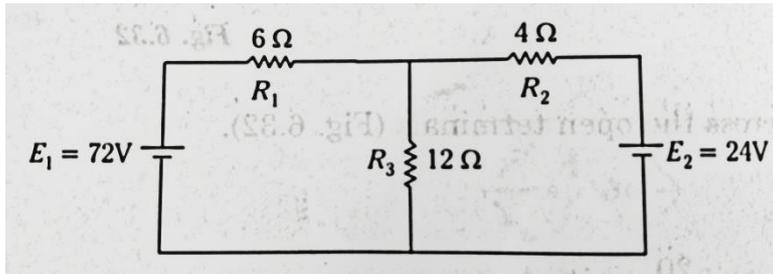
19. Define: one volt, one ampere and Electrical energy.
20. Compare ideal and practical voltage sources.
21. List different types of cores in inductors.
22. Calculate the efficiency of a transformer when $P_s = 100W$ and $P_P = 101W$. What is a IF transformer?
23. Explain varactor diode.
24. Explain the working of a positive clamper.
25. What are the different operating modes of a BJT?
26. Write the circuit diagram and truth table for a NOR gate.

PART- D

IV. Answer any **THREE** questions:

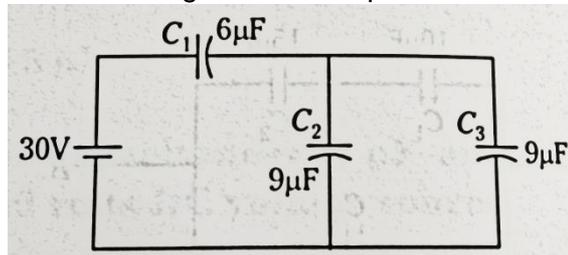
(3x5=15)

27. Find the current flowing through resistor R2 using superposition theorem.

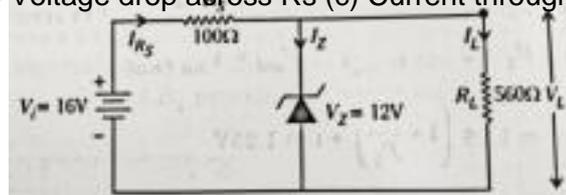


28. A series circuit consisting of an inductor of inductance 160mH and a resistor of resistance 60Ω connected to a AC source of 120V and 60Hz. Determine (a) Active power (b) Reactive power (c) Apparent power (d) Power factor

29. Find the voltage across and charge on each capacitor for the following circuit



30. For the zener diode voltage regulator circuit shown in the figure, determine (a) Load voltage (b) Voltage drop across Rs (c) Current through the diode



31. (a) Subtract 9610 from 10710. Using 2's complement method (b) Convert 101116 to binary.

PART- D

V. Answer any **FOUR** questions:

(4x5=20)

- 32. State and explain Thevenin's theorem.
- 33. With a neat diagram explain the working of a carbon microphone.
- 34. Explain the process of discharging of a capacitor through a resistor. Define time constant for the circuit.
- 35. With a neat circuit diagram and waveform explain the working of a center tapped fullwave rectifier.
- 36. Explain diode approximations.
- 37. Define OR gate. Explain the working of diode OR gate.
