



JAIN COLLEGE

463/465, 18th Main Road, SS Royal, 80 Feet Road, Raja Rajeshwari Nagar,
Bangalore - 560098

SUBJECT: Electronics

IPUC

Mock examination 2018-19

Timings Allowed: 3Hr15 Minutes.

Total Marks: 70

PART- A

I. ANSWER ALL THE QUESTIONS:

01X 10=10

1. Expand PROM.
2. Draw the symbol of practical voltage source.
3. What is sphygmomanometer?
4. Name the principle of transformers.
5. What is depletion region?
6. Draw the symbol of schottky diode.
7. What is transient phenomena?
8. What is Dark current.
9. Define radix of a number system.
10. Draw the symbol of NOT gate.

PART- B

II ANSWER ANY FIVE QUESTIONS

05 X 2=10

11. Draw any two non-sinusoidal waveforms.
12. Convert the current source of 5A with internal resistance 2Ω into voltage source.
13. Write the applications of thermistor.
14. Write a brief note on impedance of a circuit.
15. Draw the diagram of adjustable voltage regulator.
16. Mention the primary conditions of clamping circuits.
17. Write a note on an energy stored in capacitor.
18. Write the truth table and sketch the timing diagram of NAND gate.

PART- C

III ANSWER ANY FIVE QUESTIONS

05 X 3=15

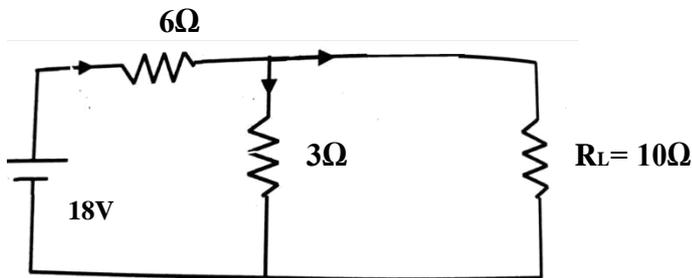
19. Write a brief note on Industrial applications of electronics.
20. State and explain current divider rule.
21. Mention the merits of Multimeter.
22. Explain the construction of Carbon composition resistor.
23. Write a note on the variation of impedance in a series RLC circuit with frequency.
24. With lattice structure explain about n-type semiconductor.
25. Explain the working of series negative clipper.
26. List any four advantages of data sheet.

PART- D

IV ANSWER ANY THREE QUESTIONS

03 X 05=15

27. Convert the circuit to Thevenin's equivalent circuit and find the current I_L through R_L .



28. A step down transformer having a power output of 10kW and transformer efficiency 90% reduces the voltage from 11kV to 220V. Calculate i) The number of turns in the primary if the secondary has 100 turns and ii) the current in primary.
29. a) Determine the voltage across the capacitor and maximum current during charging at $t=1s$ in a DC circuit containing $R=1M\Omega$ and $C=1\mu F$ connected to DC supply of 10V.
b) An inductor of 20mH is connected in series with a resistor of 50Ω. The combination is connected to 220V 50Hz source. Find the current in the circuit.
30. Determine the minimum value of R_L that will turn zener diode on in the zener regulator circuit. Given $V_s=8V$, if the load resistance $R_L=2k\Omega$.
31. a) Simplify the Boolean expression $Y = A + B + C + ABC$ and draw the logic diagram for simplified Expression using basic gates.

PART – E

V ANSWER ANY FOUR QUESTIONS

04 X 05= 20

32. Derive an expression for the effective resistance of two resistors connected in parallel.
33. Explain the construction and working of electromagnetic relay.
34. a) What are active and apparent powers? Give the relation between them.
b) Explain charging and discharging of capacitor in RC circuit when DC is applied.
35. a) Briefly explain about p-type semiconductor.
b) What is meant by clamping? Mention any one application of clamping.
36. Explain the working of a centre-tapped full wave rectifier with circuit diagram and input, output waveform.
37. Explain with a DTL circuit the action of 2 input NAND gate.
