R-19

Code: 1305/R

Faculty of Science

B. Sc (Electronics) I-Year, CBCS-I Semester Regular Examinations, Dec/Jan 2019-20

PAPER: CIRCUIT ANALYSIS

Time: 3 Hours

Max Marks: 80

Section-A

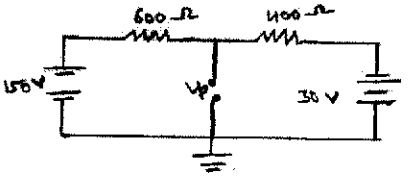
I. Answer **EIGHT** from the following questions **(Two from each part)** (8x4=32 Marks)

PART-A

1. Write a short note on J operator.
2. Differentiate voltage and current sources.
3. The peak value of a sine wave is 1V. Find average and rms values.

PART-B

4. State superposition theorem and draw the circuit diagram.
5. State reciprocity theorem and list its applications.
6. Determine V_P by superposition in following circuit:



PART-C

7. Discuss about transient response of RL circuit with step input.
8. Obtain frequency response of a passive differentiating circuit.
9. Calculate time constant for circuit with C=0.001μF and R=1MΩ.

PART-D

10. Define Q factor and selectivity.
11. Write a note on functioning of electron gun.
12. Find f_r for a series circuit with C=10μF and L=16H and R= 5Ω.

Section-B

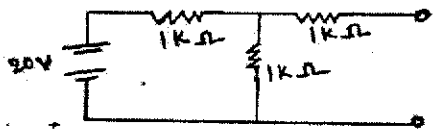
II. Answer the following questions (4x12=48 Marks)

13. (a) Define average and RMS values. Explain in detail about complex impendence and admittance.

(OR)

(b) State and explain Kirchoff's voltage and current laws.

14. (a) State and explain Thevenin's theorem. Find Thevenin equivalent circuit for following circuit:



(OR)

(b) State and explain Maximum power transfer theorem. Give its applications.

15. (a) Obtain frequency response of an RC circuit.

(OR)

(b) What are different types of filters? Obtain frequency response of a high pass filter.

16. (a)Obtain expression for resonant frequency of a RLC parallel resonance circuit.

(OR)

(b) Explain working of a cathode ray tube.

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