

B. Sc. Semester I (Honours) Examination 2020 (CBCS)

Subject: Electronic Science

Paper CC- I (Theory)

Time: 2 hours

Full Marks: 40

Candidates are required to give their answers in their own words as far as practicable

1. Write a short note on the method of measuring resistance with a digital multi-meter and with color coding.
2. Derive the expression of root mean square value of a Sinusoidal voltage signal.
3. Derive the expression of charging time of a RC series circuit.
4. A sinusoidal AC voltage signal is sent through a resistance R. Derive the expression of the average power delivered to the resistance in terms power factor.
5. Write a short note on the frequency response characteristics of a LC parallel circuit.
6. Design a high pass electronic filter with Resistances and Capacitances. Hence obtain the expression of Cut-off frequency.
7. State and prove Maximum Power Transfer Theorem in an Electronic Network.
8. With a proper circuit diagram discuss Norton's theorem in Electronics. Hence write its importance.
9. Derive the expression of Voltage- Current relationship in an Inductor. Hence find its impedance for an AC signal passing through it.
10. Write a short note mentioning the differences among air capacitor, paper capacitor, and electrolytic capacitor.