

[This question paper contains 2 printed pages.]

Sr. No. of Question Paper : 8735

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Roll No.....

Unique Paper Code : 251105

Name of the Paper : ELHP-106 : Electronics Practicals – II

Name of the Course : B.Sc. (H), ELECTRONICS

Semester : I

Duration : 1 Hour

Maximum Marks : 25

(Write your Roll No. on the top immediately on receipt of this question paper.)

Use of Scientific Maximum Calculators is allowed.

SECTION A

Do any FIVE of the following.

Each question carries one mark.

1. A resistor with colour code red green blue silver identifies what value of resistance?
2. What are S.I. unit of capacitance and admittance?
3. What is the function of CRO?
4. Name two active components.
5. In a series LCR circuit with resonance frequency (f_0) 20 kHz, the maximum voltage across the inductor will occur at which of the frequencies (a) $=f_0$, (b) $>f_0$ (c) $<f_0$?
6. State the Kirchhoff's current law.
7. Find the quality factor for a series LCR circuit which has a resonance frequency of 5 kilohertz and a bandwidth of 20 kHz.

SECTION B

Do any TEN of the following.

Each question carries two marks .

8. A 1MHz sine wave has an r.m.s. voltage of 10V. Find the peak to peak voltage and periodic time. Sketch it.
9. Convert the constant voltage source of 10V in series with 10 ohm into constant current source.

P.T.O.

10. Capacitors of values only 0.5 and 0.2 microfarad are available. Design such so as to obtain a capacitance of 1.2 microfarad.
11. Give the differentiator circuit to convert a triangular wave to square wave.
12. On the oscilloscope a circle has been obtained as a lissajous figure. Name the parameters that are same for the two input waveforms.
13. For a series RC circuit the value of R is 20 kohm and C is .01 microfarads. Sketch the frequency response of the circuit when the output is taken across the capacitor. Identify the cutoff frequency.
14. State the maximum power transfer theorem.
15. Given Thevenin voltage as 4 V and Norton current as 10 milli-ampere. Sketch the Norton equivalent for the given parameters.
16. Given that $C=0.1$ microfarad , $R= 50$ ohm and $L = 5$ millihenry. Draw the parallel LCR circuit. Sketch the frequency response and locate the resonant frequency on it.
17. Identify the steps to measure Z_{11} and Z_{21} of a two port network using simulation software.
18. For a T network with all three arms having resistances of 10 kohm each, compute Z_{22} and Z_{12} .
19. Design a high pass RC filter with cut-off frequency 10 kHz.
20. With a simple example explain the superposition theorem.