S.V.K.P &Dr .K.S.RAJU ARTS & SCIENCE COLLEGE(AUTONOMOUS),PENUGONDA

Recognized by UGC as "College With Potential for Excellence"

Accredited by NAAC with "A" Grade

(Affiliated to ADIKAVI NANNAYA UNIVERSITY–Recognised by Govt. Of Andhra Pradesh)
SECOUND SEMESTER END EXAMINATIONS
I B.Sc. –ELECTRONICS –: FUNDAMENTALS OF ELECTRICITY AND ELECTRONICS

w.e.f 2023-24 Admitted Batch
MODEL PAPER
Paper code; 23ELE21

Time : **3hours** Max.Marks:**70.**

Answer any five questions from Section A & Section B choosing atleast two from each section. Eachquestion carries 10 marks. 5x10=50 marks

Part – 1

Section-A

1.What is electric potential. Derive an expression for potential due to uniform charged conducting sphere

2.State and prove Gauss law in electrostatics and derive an expression for uniformly charged solid sphere

3.Derive an expression for the capacitance of parallel plate capacitor.

4. What is capacitor? Explain the types of capacitor .Mention its uses.

5. Determine the specific resistance from Carey forster bridge .

Section-B

6. Explain the construction and working of Moving Coil Galvanometer

7. Explain the working of Full wave Bridge rectifier and find its ripple factor.

8. Explain the working of Differentiator and Integrator using capacitor and resistor

9.Explain the characteristics of CE configuration.

10.Explain the construction and working of basic logic gates.

Part – 2

SECTION- C

Answer any five questions. **5x4=20 marks**

1. Explain Coulomb's law in electrostatics.
2. What is an electric dipole .Find the potential due to a dipole at any point
3. Describe an expression for the energy stored in a condencer.
4. Explain the working of serial and parallel capacitor.
5. Explain the calibration of low range ammeter.
6. State and explain Biot Savarts law
7. Explain the regulated power supply using Zener diode.
8. Explain the frequency response of Thevenin and Nortan theorems.

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(Affiliated to ADIKAVI NANNAYA UNIVERSITY–Recognised by Govt. Of Andhra Pradesh)SECOUND SEMESTER END EXAMINATIONS
I B.Sc. – CIRCUIT THEORY AND ELECTRONIC DEVICES

w.e.f (2023-24) Admitted Batch
MODEL PAPER
PAPER CODE ;23ELE22

Time : 3hours Max.Marks:70.

Answer any five questions from Section A & Section B choosing at least two from each section. Each question carries 10 marks. 5x10=50 marks

Part – 1

Section-A

1.Derive the expressions for Average value and RMS value of AC current.

2.Explain the V-I phase relation for the circuit containing R, L and C.

3State and prove maximum power transfer theorem?

4.State and prove Thevenin's theorem.

5. Deduce expressions for resonant frequency and Q-factor for a Series resonant circuit.

Section-B

6.Obtain the expressions for resonant frequency and Q-factor for a Parallel resonant circuit.

7.Draw and explain input and output characteristics of transistor in CE configuration.

8.Explain the working and characteristics of FET.

9.Explain the working of Full wave Bridge rectifier and find its ripple factor.

10.Explain the construction and working of LED. Mention its applications.

SECTION- C

Answer any five questions. **5x4=20 marks**

1. Expain current and voltage.
2. Difference between AC and DC.
3. State and prove Superposition theorem.
4. Explain Star to Delta and Delta to Star conversion .
5. Describe the working of RC circuit as Integrator.
6. Explain about RL as a low pass filter.
7. What are the advantages of FET over BJT?
8. Explain the working of L-section filter.

Part – 2