P.B. SIDDHARTHA COLLEGE OF ARTS & SCIENCE

Siddhartha Nagar, Vijayawada – 520 010

Autonomous -ISO 9001 – 2015 Certified

ELECTRONICSLAB

Offered to : M.Sc.(PHYSICS) **Course Code**: 22PH1L2

Course Type : Core (P) **Course:**ELECTRONICSLAB

Year of Introduction :2004 **Year of offering :** 2022

Year of Revision :2022 **Percentage of Revision : 10%**

Semester : I **Credits : 4**

Course Prerequisites (if any) :

Course Description : This course focuses on the construction and verification of electronic circuits using transistor ,IC Op-Amp 741

Course Objectives:

1. To understand the construction of logic gates
2 To learn the construction and working of transistors
3To learn the working of IC-741 in various circuits

Course Outcomes : At the end of this course, students should be able to:
CO1:To apply the concepts of electronics for different circuits
CO2: To analyze the the variation between theoretical and practical circuits.
CO3 To analyze the results obtained from different experiments through graphical analysis

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(Minimum10experimentsaretobedone)

1. Verification of truth tables of various logic gates: AND, OR, NOR and NOT using NAND gateandNOTgate.CO2, L3
2. ConstructionandverificationofthetruthtablesforDeMorgan'stheorems CO2, L3
3. VerificationoftruthtablesofR-S, J-K, flip-flops CO3, L3
4. R-CPhaseshiftoscillator CO2, L3
5. AstableMultivibratorusingtransistor.CO1, L3
6. Determinationofpracticalopampparameters CO1, L3
7. Opamp Inverting amplifierCO2, L3
8. Opamp non-invertingconfigurations.CO2, L3
9. AstableMultivibratorusingOp-amp.CO1, L3
10. Summing and difference amplifier CO2, L3
11. Anytwoonlinevirtuallabexperimentswithinthesyllabushavetobecarriedo ut(usingMHRD webresource)., L3

12. Wien'sBridgeOscillator.CO1, L3
13. JFETbasedamplifier.CO2, L3
14.UJT-Characteristics CO1, L3
15.ZenerDiodeasvoltageRegulator CO1, L3

Continuous Internal Assessment will be done for each student on basis of performance for each practical. The total marks for CIA is evaluated for 20 marks. An internal will be conducted after the completion of course for10 marks, Total marks for CIA will be 30 marks (continues assessment 20+ internal 10).The external examination is evaluated for 70 marks. Total marks 70(External)+30(CIA)=100 marks