SANT HIRDARAM GIRLS COLLEGE, BHOPAL

Department of Physics

Certificate Course in ExpEYES (IIT Spoken Tutorial, Bombay)

Academic Year-2020-2021

Course Objectives:

The students are expected to acquire the knowledge of the ExpEyes devices and how to perform basic Physics and Electronics experiments with the help of ExpEYES devices.

Course Outcome:

The device is used to perform experiments in various fields of Physics and Electronics like sound, electricity, magnetism, light, diodes, transistor etc. The students were highly enriched by the training program. In this training program students learnt many things from ExpEYES device as practical and theoretical knowledge.

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Course Content

Course Duration: - One Month

Fees:- Rs.236/-

Module	Content	Duration
1.ExpEYES	1.1 Introduction 1.2 About the device 1.3 More about the device 1.4 Features of ExpEYES 1.5 Software installation 1.6 About software	3 days
2.Ohm's Law	2.1 Series combination 2.2 Parallel combination	3 days
3. Coding ExpEYES in python	3.1 Introduction to python language 3.2 Hardware communication 3.3 Creating sine waves 3.4 Measuring voltage of A1 using battery 3.5 Measuring R and C and generating square wave Using python	4 days
4. Electromagnetism	4.1 Mutual induction 4.2 Voltage induced by a rotating magnet using a DC motor or coil. 4.3 Driven pendulum	3 days
5.Sound	5.1 Frequency of sound wave 5.2 Frequency response of piezo buzzer 5.3 Velocity of sound 5.4 Interference of sound 5.5 Low frequency sound wave	3 days
6.Transient response of a circuit	6.1 Transient response of RL circuit 6.2 Underdamped discharge of LCR circuit 6.3 RC integration 6.4 RC differentiation	3 days
7. P-N junction diode	7.1Diode as half wave rectifier	4 days

	7.2 Filtering sine wave 7.3 IV characteristics of P-N junction diode and LED **7.4** Replacing diode with LED 7.4.1 Connecting red LED 7.4.2 Connecting green LED 7.4.3 Connecting white LED 7.5 180 degree out of phase 7.6 plotting transistor CE	
8. Steady State Response	8.1 Phase shift 8.2 AC phase shift in RC circuit 8.3 AC phase shift in RL circuit 8.4 AC phase shift in LCR circuit	3 days
9.Conductivity of Ionic Solution	9.1Conductivity of tap water. 9.2 Conductivity of copper sulphate 9.3 Conductivity of dilute sulphuric acid 9.4 Conductivity of dilute potassium hydroxide solution.	4 days