

Guidelines for Higher Secondary Practical Evaluation – 2022-23

ELECTRONICS

We follow outcome focussed assessment approach in the evaluation process in the Kerala School Curriculum 2013. Term end evaluation is an important aspect of assessment. Along with term end evaluation at the end of the academic year, practical evaluation (PE) is to be conducted. A list of 13 experiments each are given below which are suitable for plus one and plus two classes. A minimum of 6 experiments each from the list are to be performed during both the years. Those performed by the students with a minimum of 12 experiments are to be considered for the final practical examination which will be conducted at the end of the second year of the course. Practical evaluation will be conducted in batches. The maximum number of students in each batch is limited to 20.

- Final practical examination will be of three hours and the maximum score will be 40.
- Any one question selected at random may be given to each student.
- Only 20 students will be permitted to attend the practical examination at a time.
- Students must attend the practical examination with a practical log book.
- Neatness in connecting equipment as per the circuit diagram, ability in observing the output , accuracy in measurement an ability in recording the data should be assessed.
- Calculation of data, sketching graph and recording final results should be assessed.
- The score distribution will be as follows.
 1. Theory and principle : 9
 2. Circuit diagram : 7
 3. Setting up of circuit : 7

4. Performing experiment	:	5
5. Measurement and recording	:	6
6. Result	:	2
7. Ascertaining the awareness relating to the particular experiment	:	4

LIST OF PRACTICAL EXPERIMENTS

First year

1. The study of the characteristic of a PN junction- forward and reverse.(use silicon and germanium)
2. The study of forward and reverse characteristics of Zener diode (repeat the experiment for two or three diodes of different break down voltages.)
3. The input and output VI characteristics of CE configuration.
4. Study of transistor switch- switch a LED on and OFF using transistor switch.
5. Study of the characteristic of LDR – resistance variation with intensity of light.
6. Study of VI characteristic of LED
7. Light detection using photodiode and phototransistors.
8. Study of half wave rectifier- measurement of ripple factor.
9. Study of centre tap full wave rectifier- measurement of ripple factor.
10. Study of bridge type full wave rectifier- measurement of ripple factor.
11. Reduction of ripple at the output of a rectifier using simple capacitor filter- repeat experiment for different value of capacitor.
12. Voltage gain measurement of a CE amplifier.
13. Study of frequency response of CE amplifier.

Second year

14. Generation of sine wave using a RC phase shift oscillator.
15. Generation of square wave using astable multivibrator.
16. Setting up of OR, AND and NOT gates and verification of truth table.
17. Familiarization of logic gate ICs.
18. Setting up of an Ex-OR gate using basic gates and verification of truth table.
19. Implementation of half adder and full adder using logic gates.
20. Design and set up of an op-amp inverting and non inverting amplifier.
21. Study of clipping circuits- simple clipper and biased clipper- positive and negative
22. Study of clamper circuits- simple clamper and biased clamper- positive and negative.
23. Study of integrator and differentiator circuits.
24. Study of zener diode voltage regulation.
25. Familiarization of voltage regulator ICs.
26. Setting up of LPF and HPF using circuits and study of their frequency response.