Tilak Maharashtra University
Diploma in Engineering
SUB: Applied Electronics
Year –SY Branch- E&TC Semester -4th

Assignment No: 1

A) Answer any two
1. What is an LDR? Describe its construction. Draw the LDR characteristics and explain it.
2. Draw the response characteristics of LED. Give the advantages and disadvantages of LED
3. Explain with diagram optocoupler. List the different types of optocouplers.
4. What are photo transistors? How are they constructed? Draw the characteristics of photo transistor.
5. What is unijunction transistor? Explain its construction

B) Answer any two
1. Differentiate between BJT and FET.
2. Draw and explain the characteristics of SCR.
3. Explain a single tuned amplifier with the help of circuit diagram also draw its frequency response.
4. Draw the circuit diagram of double tuned RF amplifier and explain with the help of frequency response the operation of the circuit.
5. Explain the working of combinational clipper

C) Answer any one
1. Explain the working of negative clamper with the help of circuit diagram.
2. Explain the classification of wave shaping circuits.
Assignment No: 2

A) Answer any two
1. Define Multivibrator and list the types of multivibrators
2. Explain the working of monostable multivibrator
3. Give difference between monostable multivibrator, bistable multivibrator and astable multivibrator.
4. Explain the operation of transistor as switch.
5. Explain classification of time base generators

B) Answer any two
1. State the need for time base generators.
2. Define rise time, fall time, sag width in case of a pulse.
3. Explain the necessity of pulse amplifier.
4. Explain the working of smoke detector with proper diagram.
5. Explain with proper diagram, the working of burglar alarm.

C) Answer any one
1. With the help of neat diagram explain the working of light operated relay.
2. Explain the function of time base generators
Assignment No: 3

A) Answer any two
1. Draw the block diagram of regulates power supply and explain the function of each block.
2. Draw circuit diagram of shunt voltage regulator using BJT and explain its working.
3. Explain the necessity of overload protection.
4. Draw transistorized series regulator and explain it.
5. State the advantages and disadvantages of negative feedback.

B) Answer any two
1. Define positive feedback & negative feedback.
2. Write short note on current shunt feedback.
3. State and explain Barkhusan’s criteria.
5. Explain working of Wein bridge oscillator. State the formula for frequency of oscillations.

C) Answer any one
1. A phase shift oscillator is built with \( R=180k\Omega \) and \( C=580pF \). Calculate the frequency of sine wave generated.
2. List the physical quantities that transducer measures.
3. With neat diagram explain the action of Hartley oscillator.
4. Explain working of crystal oscillator.