



R17 Regulation

Subject code: 1P4DB

## TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech II Year II Semester Supply Examinations, December 2024

### PULSE AND DIGITAL CIRCUITS

(ECE)

Maximum Marks: 70

Date: 05.12.2024

Duration: 3 hours

- Note:
1. This question paper contains two parts A and B.
  2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
  3. Part B consists of 5 Units. Answer any one full question from each unit.
  4. Each question carries 10 marks and may have a, b, c, d as sub questions.

#### Part-A

All the following questions carry equal marks

(10X2M=20 Marks)

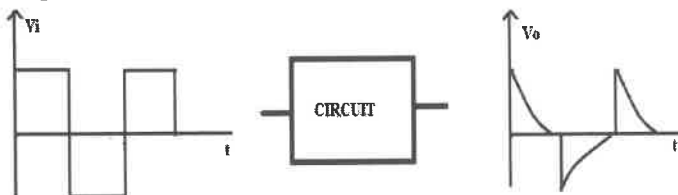
- 1 Draw the low pass RC circuit and explain its working.
- 2 Write the condition of RC circuit to work as differentiator.
- 3 What are the clipping circuits? Give some examples?
- 4 What are the applications of voltage comparators?
- 5 How a diode act as a switch?
- 6 Compare Miller and Bootstrap time-base generators.
- 7 What are the applications of a Bistable-Multivibrator?
- 8 Define the terms UTP and LTP of a Schmitt trigger.
- 9 What is pedestal?
- 10 Give some applications of logic gates.

#### Part-B

Answer All the following questions.

(10M X 5=50Marks)

- 11 Which linear circuit is required to obtain the output for the given input shown in figure? Explain its operation with necessary equations. [10M]



OR

- 12 Prove that for any periodic input waveform, the average level of the steady state output signal from RC high pass circuit is always zero. [10M]
- 13 With the help of neat circuit diagram and waveforms explain the working of positive & negative clamping circuit. [10M]
- 14 With the help of neat circuit diagram, explain the working of two-level diode clipper. [10M]
- 15 Write a short note on diode switching times. [10M]

OR

16 With the help of a neat circuit diagram, explain the working of a transistor Miller time base generator. [10M]

17 What is Monostable Multivibrator? Explain the principle of operation of a monostable multivibrator with the help of neat circuit diagram. [10M]

OR

18 With the help of a neat circuit diagram explain the working of an Astable Multivibrator. [10M]

19 Describe the working of a 4-Diode sampling gate with necessary diagram & equations. [10M]

OR

20 Draw the circuit diagram of a positive 3 i/p NAND gate in DTL logic and explain its working. [10M]