

Code No: 134CC

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**B. Tech II Year II Semester Examinations, September/October - 2023****PULSE AND DIGITAL CIRCUITS****(Electronics and Communication Engineering)****Time: 3 Hours****Max. Marks: 75****Note:** i) Question paper consists of Part A, Part B.

ii) Part A is compulsory, which carries 25 marks. In Part A, answer all questions.

iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART – A**(25 Marks)**

- 1.a) Why RC circuits are preferable compare to RC circuits? [2]
- b) What is an attenuator? Write its applications. [3]
- c) Classify different types of clipper circuits. [2]
- d) Discuss the effect of diode characteristics on clamping voltage. [3]
- e) Draw the piece wise linear characteristics of diode. [2]
- f) How diode act as a switch? [3]
- g) Mention the applications of A stable Multivibrator. [2]
- h) Compare Miller and Bootstrap circuits. [3]
- i) Draw AND gate circuit using diodes. [2]
- j) List out the merits and demerits of TTL? [3]

PART – B**(50 Marks)**

- 2.a) If step input is applied to a RC integrator, what is the output signal and Draw the waveforms?
- b) Describe about ringing circuit. Where it is used? [5+5]

OR

- 3.a) Obtain the response of an RL circuit to a step signal input.
- b) Explain the operation of double differentiator circuit. [5+5]
- 4.a) Draw the diode based positive clipper and draw its waveforms.
- b) State and prove clamping circuit theorem. [5+5]

OR

- 5.a) Give the circuits of different types of shunt clippers and explain their operation with the help of their transfer characteristics.
- b) Explain the operation of voltage comparator with circuit diagram. [5+5]
- 6.a) Explain the saturation parameters of transistor and their variation with temperature.
- b) Explain the switching times of a diode with suitable diagram. [5+5]

OR

- 7.a) Discuss about silicon-controlled-switch circuits.
- b) Explain how a transistor is worked as a switch? [5+5]

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- 8.a) Write the general features of a time base signal.
- b) Draw the circuit diagram of collector coupled A stable multi vibrator and explain its operation. [5+5]

OR

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- 9.a) Discuss the operation of Schmitt trigger circuit.
- b) Explain the different triggering methods of Monostable Multivibrator. [5+5]

- 10.a) Compare unidirectional and bidirectional sampling gates.
- b) Design a TTL NAND gate and explain the operation with the help of function table.[5+5]

OR

- 11.a) Compare DTL and TTL logic families.

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- b) Explain about the four diode Sampling gate. [5+5]

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