



Regulation R17

Subject code:1P4DB

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech II Year II Semester Supplementary Examinations, February 2024

Pulse and Digital Circuits

(Electronics and Communication Engineering)

Maximum Marks: 70

Date:19.02.2024 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 10 questions. Answer any 5 questions which carries 10M.
 4. Each question carries 10marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks

(10X2M=20 Marks)

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|----|---|
| 1 | Define time constant |
| 2 | What is the upper cutoff frequency of high pass RC circuit? |
| 3 | What is a clipper? |
| 4 | What is a clamper? |
| 5 | Draw V-I characteristics of a practical diode. |
| 6 | Define sweep error e_s |
| 7 | Write the classification of multivibrators. |
| 8 | Draw the input and output waveforms of schmitt trigger circuit. |
| 9 | What is the other name Emitter Coupled Logic (ECL)? |
| 10 | What is the unidirectional sampling gate? |

Part-B

Answer all the questions

(5X10M=50Marks)

- | | |
|----|---|
| 11 | Draw the output of the low pass RC circuit for different time constant to a square wave input. 10M |
| | OR |
| 12 | Draw the output of the high pass RC circuit for different time constant to
a) Pulse input b) Step voltage input. 10M |
| 13 | Classify different types of clipper circuits. Draw their circuits and explain their operation and also transfer characteristics. 10M |
| | OR |
| 14 | Explain clampers and its types in detail with circuit diagrams and waveforms. 10M |
| 15 | Explain the transistor switching times. 10M |
| | OR |
| 16 | Draw the circuit diagram of Transistor Bootstrap Time Base Generator and explain its operation in detail. 10M |
| 17 | Draw the circuit diagram of Collector-coupled monostable multivibrator and explain its operation in detail. 10M |
| | OR |
| 18 | Draw the circuit of a self-biased transistor binary and develop the design and steps of analysis. 10M |
| 19 | a. Define fan in, fan out, power dissipation, speed-power product. 4M
b. List out the few comparisons of TTL, RTL and CML logic families. 6M |
| | OR |
| 20 | Draw a 3-input AND gate using diodes and transistors & explain it with truth table. 10M |