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(Pages 2)

Name .....

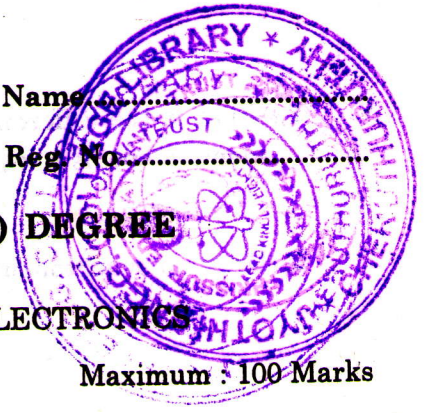
Reg. No. ....

**FIFTH SEMESTER B. Tech. (ENGINEERING) DEGREE  
EXAMINATION, DECEMBER 2004**

**EE 2K-504/PTEE2K-404-PULSE AND DIGITAL ELECTRONICS**

Time : Three Hours

Maximum : 100 Marks



*Answer all questions.  
Each correct answer carries 5 marks.*

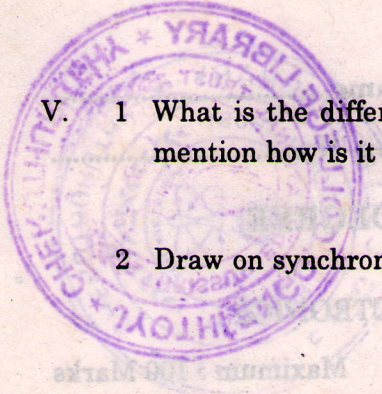
- I. 1 What is resistive switching ? How is it different from inductive switching ?  
2 Write about the switching behaviour of BJT.  
3 Define Noise Margin. What are its ideal and practical values ?  
4 Compare DTL and TTL logics.  
5 Upto how many variables, Karnaugh Map procedure can be followed ? Why ? What do we do if the variables exceed this limit ?  
6 Define decoding and encoding. Give one example for each.  
7 Draw a 4 bit shift right register. How can this be modified to function as a shift left type ?  
8 What is state table ? How is it different from state diagram ?

(8 × 5 = 40 marks)

*Answer all questions.  
Each correct answer carries 15 marks.*

- II. 1 Draw the circuit diagram of a collector coupled monostable multivibrator circuit and explain its operation, drawing waveform at the collectors and bases of the BJTs.  
*Or*  
2 Draw the circuit diagram of a Schmitt Trigger circuit using BJT. How does noise margin become a design criterion in this ?
- III. 1 Draw a 3 input HTL gate and explain its operation. What are its merits over its counterparts.  
*Or*  
2 Draw a Schottky TTL gate and explain its operation. What is its feature ? How is it different from TTL ?
- IV. 1 Explain the following with typical examples :—  
(i) Signed and unsigned numbers.  
(ii) One's and two's complement.  
*Or*  
2 What is a magnitude comparator ? Draw one circuit and explain its operation. Where does this find its application ?

**Turn over**



V. 1 What is the difference between a RAM and a ROM ? Explain any one type of RAM and mention how is it different from the other type.

Or

2 Draw on synchronous counter and one asynchronous counter and explain their operation.

(4 × 15 = 60 marks)

Time: Three Hours

Answer all questions.

Each correct answer carries 5 marks.

- 1 What is resistive switching? How is it different from inductive switching?
- 2 Write about the switching behaviour of BJT.
- 3 Define Noise Margin. What are its ideal and practical values?
- 4 Compare DTL and TTL logics.
- 5 Up to how many variables, Karnaugh Map procedure can be followed? Why? What do we do if the variables exceed this limit?
- 6 Define decoding and encoding. Give one example for each.
- 7 Draw a 4 bit shift right register. How can this be modified to function as a shift left type?
- 8 What is state table? How is it different from state diagram?

(8 × 5 = 40 marks)

Answer all questions.

Each correct answer carries 15 marks.

- I. 1 Draw the circuit diagram of a collector coupled monostable multivibrator circuit and explain its operation, drawing waveform at the collectors and base of the BJT.
- 2 Draw the circuit diagram of a Schmitt Trigger circuit using BJT. How does noise margin become a design criterion in this?
- III. 1 Draw a 3 input HTL gate and explain its operation. What are its merits over its counterparts.
- 2 Draw a Schottky TTL gate and explain its operation. What is its feature? How is it different from TTL?
- IV. 1 Explain the following with typical examples:—
  - (i) Signed and unsigned numbers.
  - (ii) One's and two's complement.
- 2 What is a magnitude comparator? Draw one circuit and explain its operation. Where does this find its application?

Turn over