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D 1954 (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)