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B.TECH

THIRD SEMESTER EXAMINATION 2008-09

TEC 304, PULSE AND DIGITAL ELECTRONICS

1 a) Simplify the following by using Tabular method: (10)
$F(w,x,y,z) = \Sigma (2,3,12,13,14,15)$

b) What is the difference between Asynchronous and Synchronous counter.Explain the 4-bit ripple counter. (10)

2 a) Implement the following function by using multiplexer (10)
$F(A,B,C,D) = \Sigma(1,3,,5,6,10,12,13,14,15)$

b) What is the race – around condition? Explain the working between of master- slave flip flop. (10)

3 Define any four (10)
a) Figure of merit
b) Fan out
c) Noise immunity
d) Demultiplexer
e) Encoder

4 a) What do you mean by voltage regulator? Explain the operation of shunt- voltage regulator. (10)

b) Explain the op- amp configured first ordered low pass butterworth filter and find out the pass band gain (10)

5 a) What is the response sinusoidal input for low pass RC circuit. How a low pass circuit act as a integrator? (10)

b) Draw and explain functional diagram of 555 timer .explain the monostable mode of Ic 555 timer. (10)

6 a) Explain a 4 bit R-2R ladder type D/a convertor in detail. Explain the simultaneous type A/D converter. (10)

b) A certain memory has capacity of16K x 32.Find out the following (10)
i) Number of Address lines
ii) Number of output lines
iii) Number of memory locations
iv) Number of bits stored in the memory.

[Turn over

7 a) Describe the difference between a bipolar integrated circuit and MOS integrated circuit. Draw and explain the working of CMOS NAND circuit. (10)

b) Attempt any four: (10)

i) Ring counter
ii) Schmitt trigger
iii) Magnitude comparator
iv) Static and dynamic memory
v) VCO
vi) Astable and Monostable multivibrator

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