S.B. Roll No.....

DIGITAL ELECTRONICS

3rd Exam/ECE/ETV/ECE-II/CSE/EEE/0620/SEP'2020

Duration: 1.15 Hrs. **M.Marks:25**

SECTION-A

Q1. Attempt any three questions. **3x5=15**

a. Convert the following: i) $85.63_{10}=X_2$ ii) $300.45_{10}= (?)_8$
b. Draw symbol and truth table of NAND gate.
c. Define noise margin, propagation delay and figure of merit.
d. List the difference between analog and a digital signal.
e. Draw and explain asynchronous Mod-5 counter.
f. What are shift registers? Give its types.
g. Draw and explain 2:1 Multiplexer
h. Draw and implement half adder.
i. What are the applications of shift registers?

SECTION-B

Q2. Attempt any one question. **1x10=10**

i. Simplify the following K-map and draw logic circuit using gates.
F (A,B,C,D)= ∑(1,5,7,8,9,10, 11,14 ,15)
ii. Explain the working and construction of a successive approximation type of ADC.
iii. Draw and give truth table of JK flip-flop. What is race around condition in JK flip-flop? How it can be avoided.
iv. Write Short note on the following. a) decoder b) combination circuit c) parity