



University of Technology
Department of Applied Sciences
Final examination 2015\2016



Subject Digital Electronics
Branch : Laser
Examiner : Dr.Ekhlal Kadhum

Class : 4th
Time : 3hours
Date : 19/5/2016

Attempt 5 Questions only

Q1 A) sketch the SIPO register with truth table and draw timing diagram , describe the operation of this type (5 marks)

B) 1- Convert the number 359_{10} to octal . (5 marks)

2-In digital electronic circuits, information is first converted to a coded group of pulses

a) True b) false

Q2 A) 1- The terminal count of a typical modulus-10 binary counter is _____. (5 marks)

2- Explain positive feedback gain of an amplifier

B) Explain the MONOSTABLE MODE of 555timer (5 marks)

Q3 A) 1- what is the value of resistance for red, orange, blue , gold color? (5 marks)

2- Sketch the Master Slave Flip Flop circuit

B) Sketch the Asynchronous Decade Counter circuit with truth table and timing diagram (5marks)

Q4 A) Describe the effect of the signal conditioning and its categories on the input signal. (5marks)

B) 1- Determine the output, X, for a 2-input gate with the input waveforms shown in Figure -1- (5marks)

2- The frequency of a pulse train is 2 kHz. The pulse period is _____

Q5 A) 1- Perform the following $10000111 \div 00000101 =$ (5marks)

2- Write a Boolean SOP expression for table -1-, then simplify that expression as much as possible, and draw a logic gate circuit equivalent to that simplified expression

B) Choice the correct answer (only five) (5marks)

1 - If an active-HIGH S-R latch has a 0 on the S input and a 1 on the R input and then the R input goes to 0, the latch will be _____.

a)SET b) RESET c) clear d) invalid

2- A _____ is user-programmable memory that cannot be erased and reprogrammed.