16PE713 FPGA Based System Design

Name: **SOLUTION** Reg. No: _____

Quiz #1 6th Jun 2018

1. List three examples of analog quantities.

Temperature, Voltage, Current, Light, Sound, Pressure, Velocity

2. Why do computer systems deal with *digital* quantities instead of *analog* quantities?

Digital quantities are easier for a computer system to store and interpret

3. Why is hexadecimal used instead of the octal numbering system when working with 16-bit digital computers?

Hexadecimal uses 4-bit groupings simplifying the data presentation in digital computers

4. A particular model of a Sony CD player has the capability of converting 12-bit signals from a CD into their equivalent analog values. What are the largest and smallest hex values that can be used in this CD system?

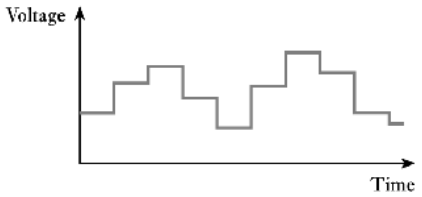
Largest: FFF_{16} ; Smallest: 000_{16}

5. In Q.4, How many different analog values can be represented by the system?

4096

6. What form of waveform is shown here?

a) Analog Signal
b) A multi-valued digital signal.
c) Continuous signal
d) Binary signal



7. Digital clocks, digital voltmeters use

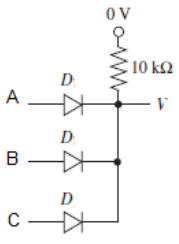
a) hexadecimal code b) octal code c) BCD code d) gray code

8. The advantages of IC over discrete component based circuit is

i) low power ii) small size iii) low cost iv) high speed v) less noise vi) high density

a) (i), (ii) and (v) b) (i), (ii), (iii) and (iv) c) (i), (ii), (iii) and (vi) d) (i), (ii), (iii), (iv), (v) and (vi)

9. What is the function realized by the following circuit?



OR gate

10. Which of the following statements is incorrect?

a) Standard TTL devices have propagation delay that is dominated by storage time of the BJT used.
b) TTL devices have logic levels of about 3.4 V and 0.2 V.
c) TTL logic normally operates from a single 5 V supply.
d) TTL logic has very low power consumption and is therefore widely used in IC's.

_____