

PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
M.Tech. Winter 2017 - 18 Examination

Semester: 1
Subject Code: 03212130
Subject Name: Electronic System Design

Date: 30/12/17
Time: 2:00pm-4:30pm
Total Marks: 60

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

- Q.1** A) Explain benefits and issues on migration of 5V to 3.3V logic. **(05)**
- B) Explain concept of Ground loops with proper example. **(05)**
- C) Write and explain any three DC specifications of ADC. **(05)**
- Q.2** **Answer the following questions.** (Attempt any three) (Each five mark) **(15)**
- A) Explain Safety Grounds and Signal Grounds.
- B) Identify the important parameter from the data sheet of uA741 also elaborate need for those parameters.
- C) Define the term ESD and write most common causes of ESD.
- D) The basic step of a 9 bit DAC is 10.3 mV. If 00000000 represents 0V, what output is produced if the input is 101101111?
- A) An 8-bit ADC produces a full scale output of 11111111 with a 2V input signal. Determine the output word given the following inputs: 100 mV, 10mV, 0V, 1.259V (Assume that this converter rounds to the nearest output value and is unipolar). **(07)**
- Q.3** B) Design Instrumentation Amplifier and derive its output equation. **(08)**
- OR**
- B) Write Do's and Don'ts to avoid damage due to ESD. **(08)**
- Q.4** A) Write PCB design rules. **(07)**
- OR**
- A) Design signal conditioning circuit to sense 0 to 100 mV of signal in the range of 0 to 2.5V of ADC channel. **(07)**
- B) Define following Power Supply Characteristics: **(08)**
- (i) Form Factor (ii) Efficiency (iii) Ripple Factor (iv) Load Regulation.