

PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
M.Tech. Winter 2018 – 19 Examination

Semester: 1
Subject Code: 203212130
Subject Name: Electronic System Design

Date: 12/12/2018
Time: 10:30 am to 01:00 pm
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) Write and explain any three DC specifications of ADC. (05)
B) Identify the important parameter from the data sheet of uA741 and elaborate need for those parameters. (05)
C) The basic step of a 9 bit DAC is 10.3 mV. If 000000000 represents 0V, what output is produced if the input is 101101111? (05)
- Q.2 Answer the following questions.** (Attempt any three) (Each five mark) (15)
A) Explain Safety Grounds and Signal Grounds.
B) Explain benefits and issues on migration of 5V to 3.3V logic.
C) Explain concept of Ground loops with proper example.
D) Define the term ESD and write most common causes of ESD.
- Q.3** A) Design Instrumentation Amplifier and derive its output equation. (07)
B) 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). (08)
- OR**
- B) Design of full wave bridge regulated power supply for -9 V to 15 V. (08)
- Q.4** 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)
- OR**
- A) Write PCB design rules. (07)
B) Define following Power Supply Characteristics: (i) Form Factor (ii) Efficiency (iii) Ripple Factor (iv) Load Regulation. (08)