

PARUL UNIVERSITY
FACULTY OF APPLIED SCIENCE
M.Sc. Winter 2018-19 Examination

Semester: 3
Subject Code: 11204203
Subject Name: Digital Electronics and Microprocessor I

Date: 27/10/2018
Time: 10:30am to 01:00pm
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) Essay type (Each of 04 marks) (08)**
(a) Draw a circuit diagram of monostable multivibrator using IC 555 and explain its working.
(b) Discuss the operation of Schmitt Trigger.
- Q.1. B) Answer the following questions (Any two) (04)**
(a) Schematically label the figures (Each of 02 marks) (04)
1. Draw circuit diagram of parity checkers.
2. Draw the circuit diagram of TTL clock.
(b) Explain Asynchronous counters. (04)
(c) Define Shift registers and give their types. (04)
- Q.2. A) Answer the following questions. (04)**
(a) Brief note (Each of 02 marks) (04)
1. Define Plasma and LED.
2. Discuss the applications of DAC.
(b) Explain continuous AD conversion in detail. (04)
- Q.2. B) Answer the following questions (Any two) (03)**
(a) Short note (Each of 01 marks) (03)
1. Define dot matrix.
2. What do we mean by variable register network?
3. Give any one application of ADC.
(b) Explain briefly about binary ladder. (03)
(c) Draw and explain simultaneous converter ADC. (03)
- Q.3. A) Essay type (Each of 04 marks) (08)**
(a) Draw the pin diagram of a microprocessor 8085.
(b) Write a note on Microprocessor controlled temperature system (MCTS)
- Q.3. B) Answer the following questions (Any two) (04)**
(a) Short note (Each of 02 marks) (04)
1. Define Accumulator and stack pointer.
2. Explain the term ASCII code and signed integers of any two numbers.
(b) Discuss Arithmetic and logical operations. (04)
(c) Write a note on program format in microprocessor 8085. (04)
- Q.4. A) Answer the following questions. (04)**
(a) Short note (Each of 02 marks) (04)
1. Give any two advantages in memory technology.
2. Define bidirectional buffer and octal buffer.
(b) Give the examples of Data flow from memory to MPU. (04)
- Q.4. B) Answer the following questions (Any two) (03)**
(a) Short note (Each of 01 marks) (03)
1. What are tri – state devices?
2. Write the types of work size.
3. What is timing diagram?
(b) Draw the block diagram of a microcontroller. (03)
(c) Give the examples of decoders. (03)