

Faculty of Science**B. Sc (Electronics) III-Year, CBCS-V Semester Regular Examinations, Dec/Jan 2019-20****PAPER: DIGITAL ELECTRONICS**

Time: 3 hours

Max Marks: 60

Section-AI. Answer any **Three** of the following questions (3x5=15 Marks)

1. Convert binary number $(110101)_2$ to decimal number.
2. Design OR and AND gates using universal gates.
3. State and verify Demorgan's theorems.
4. Define Encoder and Demultiplexer.
5. What is a flipflop. List different types of flipflops.
6. Discuss about ripple counter.

Section-B

II. Answer the following questions (3x15=45 Marks)

7. (a) Explain the characteristics and working of TTL logic circuits.

(OR)

- (b) Draw the circuit diagram of full adder and explain its truth table.

8. (a) Simplify the logic expression using k-map

$$Y = \bar{A}\bar{B}\bar{C} + \bar{A}B\bar{C} + A\bar{B}\bar{C} + A\bar{B}C$$

(OR)

- (b) Explain about 3 to 8 bit decoder and multiplexer in detail.

9. (a) Explain the working of clocked JK and D flipflops working and write their truth tables.

(OR)

- (b) Explain different types of shift registers in detail.

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ELECTIVE PAPER-I: 8085 MICROPROCESSOR AND APPLICATIONS

Time: 3 hours

Max Marks: 60

Section-AI. Answer any **Three** of the following questions (3x5=15 Marks)

1. Explain accumulator and stack pointer.
2. Discuss about memory mapping.
3. Explain the data transfer schemes.
4. What are addressing modes? Explain.
5. Write an ALP for addition of two numbers.
6. Write a short note on programmable peripheral interface 8212.

Section-B

II. Answer the following questions (3x15=45 Marks)

7. (a) What are the various registers of 8085? Discuss their function.
(b) What are the various status flags provided in 8085? Discuss their role.
(OR)
(c) Discuss fetch operation and execute operation. Draw and explain the timing diagram for fetch operation.
8. (a) Explain any five Instructions relevant to 8-bit data transfer and 16-bit data transfer.
(OR)
(b) Classify 8085 instructions in various groups. Give examples of instructions for each group.
9. (a) Write an ALP to find largest and smallest number in data array.
(OR)
(b) Explain programmable interfacing peripherals- 8255(I/O port).
