

Digital Electronics & Microprocessor

2K7-CS-01

[M.M. : 100

Time : 03 hrs.]

Note :-

- 1. Part 'A' may be attempted in first 5 pages of Answer Sheet.
भाग 'अ' के सभी प्रश्न, उत्तर-पुस्तिका के प्रथम पाँच पृष्ठों में ही करने हैं।
- 2. Part 'B' in rest of the Sheets of Answer Sheet.
भाग 'ब' के प्रश्न, उत्तर-पुस्तिका के उम्तले शेष पृष्ठों में लिखिये।
- 3. Answers may be given in English or Hindi.
प्रश्नों के उत्तर अंग्रेजी अथवा हिन्दी में दीजिये।

PART - A

1. Answer any ten questions :

(2x10=20)

- (a) Convert $(11011011)_{10}$ to binary
- (b) Add the binary number 1001 & 1100.
- (c) State two use of a Counter.
- (d) What is a flip-flop
- (e) Draw a symbol of OR & AND gate.
- (f) MVI, A has number of machine cycle
- (g) What does RST stand for ?
- (h) What is interrupt ?
- (i) Explain Encoder ?
- (j) Define SOP ?
- (k) Why do we need Clock Pulse ?
- (l) How many bit are present in nibble ?
- (m) Write NAND gate TRUTH TABLE.
- (n) What is Registers.

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2. Answer any five questions :

- (a) What is Universal gates ? Name them with truth table.
- (b) Write a short notes on Priority Encoder.
- (c) State the need of Registers.
- (d) Differentiate between Synchronous & Asynchronous data transfer.
- (e) Draw the block diagram of 8085 microprocessor.
- (f) Compare Static and Dynamic RAM.
- (g) Explain full adder working with logic gates.
- (h) Draw logic symbol and truth table of S-R flip-flop.

PART- B

Answer any three questions :

(3x20=60)

3. (a) Explain 7-Segment display, draw the Simplified logic table & K-map of it to form logic block diagram.
- (b) Explain with truth table and symbol for
- (i) AND
 - (ii) OR
 - (iii) NAND
 - (iv) NOR
4. (a) For a Micro Processor, Explain in brief the following :
- (i) Control bus
 - (ii) Data and address bus.
- (b) Explain Timing diagram opcode fetch-cycle
5. (a) Implement the following Boolean function using Multiplex.
- $$f = \sum (1, 3, 4, 11, 12, 13, 14, 15)$$
- (b) Write a short note on Memory organization, memory map and addresses.
6. (a) Explain 5 type of number system each with two examples.
- (b) Explain the use of alpha numeric code (i) ASCII & (ii) EOCDIC.
7. (a) Explain the interrupt RST instruction.
- (b) Write a short note on :
- (i) RIM instruction
 - (ii) SIM instruction

A+B