

**October 2018**

Time - Three hours  
(Maximum Marks: 75)

[N.B: (1) Q.No. 8 in PART - A and Q.No. 16 in PART - B are compulsory.  
Answer any FOUR questions from the remaining in each PART - A  
and PART - B

(2) Answer division (a) or division (b) of each question in PART - C.

(3) Each question carries 2 marks in PART - A, 3 marks in Part - B and  
10 marks in PART - C.]

PART - A

1. Convert  $(263)_8$  into decimal.
2. Define arithmetic circuits.
3. State the level triggering in flipflop.
4. What is Mod-N counter?
5. Mention the types of memory.
6. What is microprocessor?
7. Define EPROM.
8. What is Karnaugh map?

PART - B

9. Explain two inputs OR gate with truth table.
10. Define fan in & fan out.
11. Draw the pattern of seven segment LED display.
12. Explain RS flipflop.
13. Differentiate static and dynamic RAM.
14. Explain flash memory.
15. Name the flags used in 8085 microprocessor.
16. Write short notes on ring counter.

[Turn over.....

PART – C

17. (a) (i) Construct AND, OR and NOT gates using only NOR gates.  
(ii) Convert  $(65)_8$  into its equivalent binary and hexadecimal number.

(Or)

- (b) (i) State and Prove De-Morgan's theorem.  
(ii) Explain pair and quad loop by using suitable examples.

18. (a) Explain the operation of full adder with the logic diagram.

(Or)

- (b) Draw and explain the logic diagram of de-multiplexer.

19. (a) Explain the operation of a 4 bit ripple up counter with the logic diagram, waveforms and truth table.

(Or)

- (b) Draw and explain the logic diagram of any two modes of shift register.

20. (a) Explain the working of memory read/write operation.

(Or)

- (b) Explain ROM organization with necessary diagram.

21. (a) Explain the architecture of 8085 with a neat diagram.

(Or)

- (b) Draw and explain the timing diagram of Opcode fetch cycle.

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