

18. With a neat diagram, explain the working of ring counter.
19. Draw and explain the architecture of 8085 microprocessor with an example.
20. Explain various logical and branching instructions in 8085 microprocessor.

S.No. 5262

16 SCCCCS 7

(For candidates admitted from 2016-2017 onwards)

B.Sc. DEGREE EXAMINATION, APRIL 2022.

Part III — Computer Science — Major

DIGITAL ELECTRONICS AND MICROPROCESSOR

Time : Three hours

Maximum : 75 marks

PART A — (10 × 2 = 20)

Answer ALL questions.

1. Define gates.
2. List out various number systems.
3. Explain the fundamentals of Minterm and maxterm.
4. State the Commutative property of Boolean algebra.
5. With neat block diagram explain the principle of sequential logic circuit.
6. How a RS flip flop is used to construct D flip flop.
7. Draw the pin diagram of microprocessor.

8. How indirect memory addressing play a role in microprocessor?

9. List out various logical instruction based instruction set.

10. Define zero flag in status flag.

PART B — ($5 \times 5 = 25$)

Answer ALL questions, choosing either (a) or (b).

11. (a) Convert the given binary numbers into hexadecimal numbers :

(i) 1011011₂

(ii) 11011010101₂.

Or

(b) With neat diagram and truth table explain the working of NAND and NOR.

12. (a) Explain the working of Sum of product in Boolean algebra with an example.

Or

(b) How NAND gate is said to be a universal gate?

13. (a) With neat diagram and truth table explain the operation of Multiplexer.

Or

(b) Construct a JK flip flop circuit using NAND gate and explain the truth table.

14. (a) Describe the working of registers in Intel 8085 microprocessor.

Or

(b) For executing an instruction what are the steps to be followed by 8085 microprocessor.

15. (a) Describe the data format of 8085 microprocessor.

Or

(b) Explain the working of Auxiliary flag with an example.

PART C — ($3 \times 10 = 30$)

Answer any THREE questions.

16. Explain briefly about all the logic gates with their truth table.

17. With an example, explain how Karnaugh map is used to simplify the Boolean expression.