C–8593	Sub. Code
	82346

B.Voc. DEGREE EXAMINATION, APRIL 2023.

Fourth Semester

Industrial Automation

DIGITAL ELECTRONICS

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** questions.

1. Draw the block diagram of AND gate.

2. Write the truth table of NOR gate.

3. What is mean by decoder?

4. Write a note on parity checker.

5. What is the function of flip-flops?

6. Write a note on Shift Counter.

7. Expand EPROM.

8. What is PLA?

9. Draw the pulse mode circuit.

10. List any two advantages associated with asynchronous circuits.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) State and explain De-Morgan's theorem.

Or

(b) Discuss about the characteristics of TTL and CMOS logic.

12. (a) Discuss the construction and working of half adder.

Or

(b) Write a note on :

(i) Binary multiplier

(ii) Binary divider

13. (a) Discuss about the asynchronous up/down counter.

Or

(b) Explain the universal shift registers.

14. (a) Discuss about the MOSFET RAM cell.

Or

(b) Explain the function of field programmable gate arrays (FPGA).

15. (a) Explain the design of hazard free switching circuits.

Or

(b) Explain the synchronous sequential circuits.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Explain the construction and working of OR, NOT, and NAND gates with truth tables.

Or

(b) Discuss the half subtractor and full subtractor with heat diagram.

17. (a) Clearly explain the multiplexer and demultiplexer.

Or

(b) Explain the characteristic table of JK and SR flip-flops with neat diagram.

18. (a) Explain the implementation of combinational logic circuits using ROM and PAL.

Or

(b) Sketch out the design of combinational and sequential circuits using VERILOG.

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C–8594	Sub. Code
	82362

B.Voc. DEGREE EXAMINATION, APRIL 2023

Sixth Semester

Industrial Automation

INDUSTRIAL SAFETY

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define the principle of grinding machine.

2. What is boring machine?

3. Define electron eye.

4. What is interlock guard?

5. Define arc welding.

6. What is soldering?

7. Define feeding mechanism.

8. What is forging?

9. Define heat treatment.

10. What is hydro testing?

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Discuss about the principle and maintenance of milling machines in brief.

Or

(b) Write a short note on planning machines.

12. (a) Write short note on machine guarding.

Or

(b) Write a brief note on automatic guard and trip guard.

13. (a) Write a brief note on gas welding and oxygen cutting.

Or

(b) Write short note on storage and handling of gas cylinders.

14. (a) Discuss about the power press electric controls.

Or

(b) Write a brief note on the safety methods in forging.

15. (a) Discuss briefly about the electro plating process.

Or

(b) Write short note on industrial waste disposal.

Part C (3 × 10 = 30)

Answer **all** the questions.

16. (a) Explain in detail about the grinding machines.

Or

(b) Elaborate about the principle, maintenance and inspection of turning machines.

17. (a) Explain in detail about guarding during maintenance and ZMS.

Or

(b) Write a detailed note on training and safety precautions in brazing.

18. (a) Discuss in detail about the hot rolling mill operation and safe guards in hot rolling mills.

Or

(b) Explain in detail about the health and welfare measures in engineering industry.

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