Roll No. _____ [Total No. of Pages : 2

4003ELE20-A

B.Sc. (CBCS) DEGREE EXAMINATIONS, JULY - 2022

(Examination at the end of Fourth Semester)

Part - II : Electronics

Microprocessor System

(Regulation 2020-21)

Time : 3 Hours Maximum Marks : 75

SECTION - A

Answer any Five of the following. (5×5=25)

1. Explain briefly about program status word (PSW) register.
2. Explain about Addressing modes of 8086.
3. Draw the pin diagram of 8085.
4. Explain about minimum and maximum modes of 8086.
5. Write an ALP for Addition of two 8-bit numbers.
6. Explain serial communication interface (8251-USART).
7. Draw the pin diagram of 8255.
8. Explain briefly about 16/32 bit processors.

SECTION - B

UNIT - I

Answer any ONE of the following from each unit. (5×10=50)

9. a) Explain in detail about Architecture of 8085 Micro processor.

(OR)

b) Draw the pin diagram of 8085 and explain each pin.

Roll No.

UNIT - II

10. a) Draw the pin diagram of 8086 and explain each pin.

(OR)

b) Explain about Addressing modes of 8086.

UNIT - III

11. a) Explain about Instruction set of 8085.

(OR)

b) Write an Assembly language program for Multiplication of Two 8 bit numbers.

UNIT - IV

12. a) Explain in detail serial communication interfacing of 8251.

(OR)

b) Draw block diagram of 8237 DMA controller & explain.

UNIT - V

13. a) Explain about ARM architecture & organization.

(OR)

b) Explain about Instruction set of ARM processor.

Roll No. _____ [Total No. of Pages :2

1003ELE20

B.Sc. Degree (CBCS) Examinations, January-2024

(Examination at the end of First Semester)

Part-II: Electronics

Circuit Theory and Electronic Devices

(Regulation 2020-21)

Time : 3 Hours **Maximum Marks : 75**

SECTION-A

Answer any Five of the following questions. Each question carries 5 marks. **(5×5=25)**

1. Define current and voltage. Write the general format of sine wave for A.C voltage and current.
2. Write any '5' differences between AC and DC.
3. Explain Nodal Analysis of Passive Networks.
4. State and Prove Millamn theorem.
5. Explain about passive differentiating circuits.
6. Explain the advantages of FET over BJT.
7. Explain UJT as a Relaxation oscillator.
8. Write a short note on Light Emitting diode (LED).

SECTION - B

Answer All the following questions. Each question carries 10 marks. **(5×10=50)**

9. a) Define Alternating Current. Derive the expressions for average and rms values of Alternating current.

(OR)

b) Explain the phase difference between voltage across and current through an ideal inductor and an ideal capacitor.

10. a) State and Prove Superposition theorem.

(OR)

b) Explain about :

i) Star to Delta Conversion and

ii) Delta to star conversion.

11. a) Explain the frequency response of RC Circuit mention its action as low pass and High pass filters.

(OR)

b) What is Series resonant circuit? Derive the Expression for resonant frequency of LCR series Circuit.

12. a) Define Hybrid parameters. Explain about hybrod equivalent circuit of CE Transistor.

(OR)

b) Explain the construction, working and characteristics of MOSFET.

13. a) Explain the construction and working of full wave Rectifier.

(OR)

b) Explain the construction, working and characteristics of light Dependent Resistor (LDR).

Roll No. _____ [Total No. of Pages :2

1003ELE20

B.Sc. Degree (CBCS) Examinations, January-2024

(Examination at the end of First Semester)

Part-II: Electronics

Circuit Theory and Electronic Devices

(Regulation 2020-21)

Time : 3 Hours **Maximum Marks : 75**

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Roll No. _____ [Total No. of Pages :2

1003ELE20

B.Sc. Degree (CBCS) Examinations, January-2024

(Examination at the end of First Semester)

Part-II: Electronics

Circuit Theory and Electronic Devices

(Regulation 2020-21)

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Roll No. _____ [Total No. of Pages :2

1003ELE20

B.Sc. Degree (CBCS) Examinations, January-2024

(Examination at the end of First Semester)

Part-II: Electronics

Circuit Theory and Electronic Devices

(Regulation 2020-21)

Time : 3 Hours **Maximum Marks : 75**

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Roll No. _____ [Total No. of Pages :2

1003ELE20

B.Sc. Degree (CBCS) Examinations, January-2024

(Examination at the end of First Semester)

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Circuit Theory and Electronic Devices

(Regulation 2020-21)

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Roll No. _____ [Total No. of Pages :2

1003ELE20

B.Sc. Degree (CBCS) Examinations, January-2024

(Examination at the end of First Semester)

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Circuit Theory and Electronic Devices

(Regulation 2020-21)

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Roll No. _____ (Total No. of Pages 2)

1003ELE20

B.Sc. Degree (CBCS) Examinations, January-2024

(Examination at the end of First Semester)

Part-II: Electronics

Circuit Theory and Electronic Devices

(Regulation 2020-21)

Time : 3 Hours Maximum Marks : 75

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B.Sc. (CBCS) DEGREE EXAMINATIONS, SEPTEMBER - 2021

(Examination at the end of Second Semester)

DIGITAL ELECTRONICS

Part - II: Electronics

(Regulation 2020-21)

Time : 3 hours **Maximum Marks : 75**

SECTION-A

విభాగము - ఎ

Answer any **FIVE** of the following questions. **(5×5=25)**

1. Convert $(100)_{10}$ to Decimal?

   $(100)_{10}$ ను ద్విసంఖ్యామానంలోకి మార్చుము?

2. Explain D-Flip-Flop with truth -table.

   డి-ఫ్లిప్ ఫ్లాప్ ను సత్య పట్టిక ద్వారా వివరించుము.

3. What are universal gates and write their truth tables?

   సార్వత్రిక ద్వారాలు ఏవి? వాటి యొక్క సత్య పట్టికను వ్రాయుము.

4. Write about Parallel Binary adder?

   సమాంతర ద్వి కూడికను గూర్చి వ్రాయుము?

5. Explain ROM, RAM?

   రోమ్ (ROM), ర్యామ్ (RAM) లను వివరించండి?

6. Write about DE-Multiplexers?

   డీ-మల్టీప్లక్సర్స్‌ల గూర్చి వ్రాయుము?

7. Write short note on Digital Logic families?

   డిజిటల్ తర్కములు గురించి వ్రాయుము?

8. Explain EAROM, EEROM?

   EAROM, EEROM లను వివరింపుము?

SECTION - B

విభాగము - బి

Answer any ONE of the following from each unit. (5×10=50)

UNIT - I

9. a) What is Gray Code, Explain with example?

గ్రేకోడ్ అంటే ఏమిటి, దానిని ఒక ఉదాహరణతో వివరింపుము?

(OR/లేదా)

b) Explain 1's, 2's, 9's, 10's Complements with examples?

1's, 2's, 9's, 10's పూరకాలను ఉదాహరణలతో వివరింపుము?

UNIT - II

10. a) State and prove Demorgan' theorem?

డి మోర్గాన్ సిద్ధాంతమును నిర్వచించి, దానిని నిరూపించుము?

(OR/లేదా)

b) What is k-map? Explain two, three, four variable formats?

మ్యాప్ అనగానేమి? రెండు, మూడు, నాలుగు వేరియబుల్స్ ను ఫార్మేట్‌తో వివరింపుము?

UNIT - III

11. a) Discuss the working of Half adder, and full adder and give their truth tables?

అర్ధ సంకలని (Half adder) పూర్ణ సంకలని (full adder) గూర్చి చర్చించి, వాటి యొక్క సత్య పట్టికలను వ్రాయుము.

(OR/లేదా)

b) Discuss BCD to7 segment display Decoder?

BCD to7 సెగ్మెంట్ (segment) డిస్‌ప్లే డికోడర్ గూర్చి చర్చించుము?

UNIT - IV

12. a) Explain the working of a Decade Counter?

డికేడ్ కౌంటర్ పని చేయు విధానాన్ని వివరించుము?

(OR/లేదా)

b) Explain the operation of Master-Slave J-K Flip Flop with truth table?

మాస్టర్ స్లేవ్ (Master-Slave) J-K ఫ్లిప్ ఫ్లాప్ పని చేయు విధానాన్ని వివరించండి?

UNIT - V

13. a) Discuss about "DTL" and "TTL" logic families?

"DTL" మరియు "TTL" (logic) తర్కముల గూర్చి చర్చించుము?

(OR/లేదా)

b) Explain in detail about:

i) Programmable logic array (PLA)

ii) Programmable array logic (PAL)

ఈ క్రింది వాటిని గురించి సవివరంగా వ్రాయుము.

i) ప్రోగ్రామెబుల్ తర్కము ఎర్రె (PLA)

ii) ప్రోగ్రామెబుల్ ఎర్రె తర్కము (PAL)

Roll No. _____ [Total No. of Pages : 2

2003ELE15

B.Sc.(CBCS) DEGREE EXAMINATIONS, JULY/AUGUST - 2023

(Examination at the end of Second Semester)

Part - II: Electronics

Electronic Devices and Circuits

(Regulation 2015-16)

Time : 3 Hours **Maximum Marks : 75**

PART - A

Answer any **FIVE** questions. **(5×5=25)**

1. Explain about the depletion region and potential barrier of P-N diode.
2. Explain about zener breakdown and avalanche break down.
3. Explain the concept of transistor as a switch.
4. Define α and β parameters of a transistor. Derive the relation between them.
5. Explain about FET parameters.
6. Describe the working of LCD.
7. Explain about three terminal fixed voltage IC regulatiors (78XX and 79XX)
8. Explain about the working of Choke input filter.

PART - B

Answer the following questions. **(5×10=50)**

UNIT - I

9. Describe the construction, working of tunnel diode. What are the applications of tunnel diode.

(OR)

10. Describe the construction and working of zener diode. Explain the V-I characteristics.

UNIT - II

11. Explain the construction and working of PNP and NPN transistors in detail.

(OR)

12. Draw the input and output characteristics of a BJT in CE configuration.

UNIT - III

13. Explain the construction, working and V-I characteristics of Enhancement MOSFET.

(OR)

14. Describe the construction and working of UJT . Explain its V-I characteristics.

UNIT - IV

15. Describe the construction and working of LED. Draw the spectral response.

(OR)

16. Explain the construction and operation of photo voltaic cell.

UNIT - V

17. Draw the circuit of full wave rectifier and derive expression for efficiency and ripple factor.

(OR)

18. Explain the principle and working of switch mode power supply in detail.

Roll No. _____ [Total No. of Pages : 2

2003ELE20

B.Sc. (CBCS) DEGREE EXAMINATIONS, JULY/AUGUST - 2023

(Examination at the end of Second Semester)

Part - II : Electronics

Digital Electronics

(Regulation 2020-21)

Time : 3 Hours Maximum Marks : 75

SECTION - A

Answer any **FIVE** of the following questions. (5×5=25)

1. Explain Excess - 3 code with examples.
2. Subtract 11001 from 10101 using 2's complement method.
3. Prove the Boolean identity (AB+C) (AB+D)=AB+CD.
4. State and prove any one of De Morgan's theorem.
5. Write down differences between CMOS and TTL logic families.
6. Explain the working of multiplexer (4:1) with its truth table.
7. Explain the operation of RS Flip-flop with truth table.
8. Explain EPROM and EEPROM in brief.

SECTION - B

Answer any **ONE** of the following from each unit. (5×10=50)

Unit - I

9. a) Explain in detail about BCD code.

(OR)

b) Explain Decimal to Binary and Binary to Decimal conversion with an example.

Unit - II

10. a) Explain in detail about 3 variable karnaugh map method to simplify logic expression.

(OR)

b) Explain the working of NAND and NOR gates. Why NAND and NOR gates are called as universal gates?

Unit - III

11. a) Explain the operation of Half-adder and Full-adder.

(OR)

b) Explain the working of TTL NAND gate.

Unit - IV

12. a) Describe the working of Master-slave JK flip-flop with its truth table.

(OR)

b) Explain the operation of Decade Counter. Draw its timing diagram.

Unit - V

13. a) Explain the operation of ROM and Dynamic RAM.

(OR)

b) Explain RTL, DTL and TTL logic families.

Roll No. _____ [Total No. of Pages : 2

2003ELE20

B.Sc. (CBCS) DEGREE EXAMINATIONS, JULY/AUGUST - 2023

(Examination at the end of Second Semester)

Part - II : Electronics

Digital Electronics

(Regulation 2020-21)

Time : 3 Hours Maximum Marks : 75

SECTION - A

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b) Explain the operation of Decade Counter. Draw its timing diagram.

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B.Sc. (CBCS) DEGREE EXAMINATION,
OCTOBER/NOVEMBER 2019.

(Examination at the end of Third Semester)

Part II — Electronics

DIGITAL ELECTRONICS

(Regulation 2015-16)

Time : Three hours Maximum : 75 marks

SECTION A — (5 × 5 = 25 marks)

Answer any FIVE questions.

1. Write about Excess-3 code with example.

2. State and prove De-Morgan's Laws.

3. Draw the diagram of magnitude comparator and explain.

4. Write a short note on 9's compliment method with example.

5. Discuss about multilevel NAND gate.

6. Discuss briefly about

(a) Decoder

(b) Encoder.

7. Explain about D-type flip-flop.

8. Explain about semi conductor memories.

SECTION B — (5 × 10 = 50 marks)

Answer ALL questions.

UNIT I

9. Explain about various number system with conversion examples.

Or

10. (a) Convert the following binary number $(1100)_2$ in to Gray code.

(b) Perform $(1100)_2 - (1010)_2$ using 1's compliment method.

UNIT II

11. Discuss briefly about Canonical and standard form of Boolean algebra and deduce the relation for π and Σ.

Or

12. Simplify the expression using K-map method

(a) $F(a, b, c, d) = \sum(0, 1, 2, 8, 10, 11, 14, 15)$

(b) $F(a, b, c, d) = \sum(0, 2, 4, 6, 7) + d(1, 3, 10, 11)$

UNIT III

13. Discuss briefly about HALF adder and FULL adder with logic circuits and simplify the expression using K-Map method.

Or

14. Explain the construction and working of CMOS NOR gate.

UNIT IV

15. Discuss briefly about the construction and working of J-K Flip-flop with timing diagram.

Or

16. Explain briefly about MOD-16 counter with truth table and timing diagram.

UNIT V

17. Explain briefly about PLA (Programmable logic array).

Or

18. Discuss briefly about PAL (Programmable array logic).

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3003ELE15

B.Sc. (CBCS) DEGREE EXAMINATIONS, MARCH - 2021

(Examination at the end of Third Semester)

DIGITAL ELECTRONICS

Part - II : Electronics

(Regulation 2015-16)

Time : 3 Hours Maximum Marks : 75

SECTION - A

Answer any **Five** questions. (5×5=25)

1. Write about excess - 3 code with example.
2. Write a note on universal gates.
3. Explain the working of half adder
4. Explain the workig of S-R flip flop.
5. Write a note on ROM.
6. Discuss briefly about
   a. Decoder
   b. Encoder
7. Write a short note on 9's compliment method with example.
8. Explain about semiconductor memories.

SECTION - B

Answer **All** questions. (5×10=50)

Unit - I

9. Explain about various number systems with conversion examples.

(OR)

10. a) Convert octal number $(24.6)_8$ to the equivalent decimal number.

    b) Simplify the Boolean expression $Y = (A + B + C).(A + B)$.

Unit - II

11. Discuss briefly about canonical and standard form of Boolean algebra and deduce the relation for π *and* Σ.

(OR)

12. Simplify expression using K-map method

    a. $F(a,b,c,d) = \sum m(0,1,3,5,7,8,9,11,13,15)$

    b. $F(a,b,c,d) = \sum m(0,2,8,10,14) + \sum d(5,15)$

Unit - III

13. Write an essay abut multiplexers and Demultiplexers.

(OR)

14. Explain the construction and working of CMOS NOR gate.

Unit - IV

15. Describe the working of master slave JKFF with a neat diagram.

(OR)

16. Explain briefly about MOD - 16 counter with truth table and timing diagram.

Unit - V

17. Discuss briefly about PAL (Programmable array logic)

(OR)

18. Describe PROM, EPROM, EEPROM and EAROM.

(3003ELE15)

B.Sc. (CBCS) DEGREE EXAMINATION,
OCTOBER/NOVEMBER 2019.

(Examination at the end of Third Semester)

Part II — Electronics

DIGITAL ELECTRONICS

(Regulation 2015-16)

Time : Three hours Maximum : 75 marks

SECTION A — (5 × 5 = 25 marks)

Answer any FIVE questions.

1. Write about Excess-3 code with example.

2. State and prove De-Morgan's Laws.

3. Draw the diagram of magnitude comparator and explain.

4. Write a short note on 9's compliment method with example.

5. Discuss about multilevel NAND gate.

[Contd...

(1)

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6. Discuss briefly about

(a) Decoder

(b) Encoder.

7. Explain about D-type flip-flop.

8. Explain about semi conductor memories.

SECTION B — ($5 \times 10 = 50$ marks)

Answer ALL questions.

UNIT I

9. Explain about various number system with conversion examples.

Or

10. (a) Convert the following binary number $(1100)_2$ in to Gray code.

(b) Perform $(1100)_2 - (1010)_2$ using 1's compliment method.

UNIT II

11. Discuss briefly about Canonical and standard form of Boolean algebra and deduce the relation for π and Σ.

Or

12. Simplify the expression using K-map method

(a) $F(a, b, c, d) = \sum(0, 1, 2, 8, 10, 11, 14, 15)$

(b) $F(a, b, c, d) = \sum(0, 2, 4, 6, 7) + d(1, 3, 10, 11)$

UNIT III

13. Discuss briefly about HALF adder and FULL adder with logic circuits and simplify the expression using K-Map method.

Or

14. Explain the construction and working of CMOS NOR gate.

UNIT IV

15. Discuss briefly about the construction and working of J-K Flip-flop with timing diagram.

Or

16. Explain briefly about MOD-16 counter with truth table and timing diagram.

UNIT V

17. Explain briefly about PLA (Programmable logic array).

Or

18. Discuss briefly about PAL (Programmable array logic).

Roll No. _____ [Total No. of Pages : 2

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B.Sc. (CBCS) DEGREE EXAMINATIONS, MARCH - 2021

(Examination at the end of Third Semester)

DIGITAL ELECTRONICS

Part - II : Electronics

(Regulation 2015-16)

Time : 3 Hours Maximum Marks : 75

SECTION - A

Answer any **Five** questions. (5×5=25)

1. Write about excess - 3 code with example.
2. Write a note on universal gates.
3. Explain the working of half adder
4. Explain the workig of S-R flip flop.
5. Write a note on ROM.
6. Discuss briefly about
   a. Decoder
   b. Encoder
7. Write a short note on 9's compliment method with example.
8. Explain about semiconductor memories.

SECTION - B

Answer **All** questions. (5×10=50)

Unit - I

9. Explain about various number systems with conversion examples.

(OR)

10. a) Convert octal number $(24.6)_8$ to the equivalent decimal number.

    b) Simplify the Boolean expression $Y = (A + B + C).(A + B)$.

Unit - II

11. Discuss briefly about canonical and standard form of Boolean algebra and deduce the relation for π and Σ.

(OR)

12. Simplify expression using K-map method

    a. $F(a,b,c,d) = \sum m(0,1,3,5,7,8,9,11,13,15)$

    b. $F(a,b,c,d) = \sum m(0,2,8,10,14) + \sum d(5,15)$

Unit - III

13. Write an essay abut multiplexers and Demultiplexers.

(OR)

14. Explain the construction and working of CMOS NOR gate.

Unit - IV

15. Describe the working of master slave JKFF with a neat diagram.

(OR)

16. Explain briefly about MOD - 16 counter with truth table and timing diagram.

Unit - V

17. Discuss briefly about PAL (Programmable array logic)

(OR)

18. Describe PROM, EPROM, EEPROM and EAROM.

B.Sc Electronics

Semester - IV Analog and Digital IC Applications

Paper - 4

Model Question Paper

PART - A (5 × 5 = 25 M)

Answer any Five questions.

1. Explain Integrator circuit using OP Amp
2. Explain the concept of Virtual ground.
3. Explain the low pass filter using OP Amp
4. Explain the comparator circuit using OP Amp
5. How do you design to convert Grey numbers into Binary
6. Explain the design of Mod - N counter using state machine.
7. Explain R - 2R Ladder network.
8. Explain the interfacing of LED.

PART - B (5 × 10 = 50 M)

Answer all the Questions

Unit - I

9. Draw the Block diagram of OP Amp and explain its each block.

or

10. Draw the circuit diagram of Logarithmic amplifier and explain.

Unit - II

11. Explain monostable multivibrator circuit using OP AMP.

or

12. Draw the functional block diagram of IC 555 and explain.

Unit - III

13. Explain code conversion of BCD to Seven Segment display.

or

14. Explain the design of Universal shift registers.

Unit - IV

15. Explain dual slope A/D converter.

or

16. Explain Binary weighted D/A converter.

Unit - V

17. Explain the working of Digital clock.

or

18. Explain parallel to serial shift registers.

* * * * *

P. Sriram
K. Madhavi

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B.Sc. (CBCS) DEGREE EXAMINATIONS, MARCH - 2021

(Examination at the end of Third Semester)

DIGITAL ELECTRONICS

Part - II : Electronics

(Regulation 2015-16)

Time : 3 Hours Maximum Marks : 75

SECTION - A

Answer any Five questions. (5×5=25)

1. Write about excess - 3 code with example.
2. Write a note on universal gates.
3. Explain the working of half adder
4. Explain the workig of S-R flip flop.
5. Write a note on ROM.
6. Discuss briefly about
   a. Decoder
   b. Encoder
7. Write a short note on 9's compliment method with example.
8. Explain about semiconductor memories.

SECTION - B

Answer All questions. (5×10=50)

Unit - I

9. Explain about various number systems with conversion examples.

(OR)

10. a) Convert octal number $(24.6)_8$ to the equivalent decimal number.

    b) Simplify the Boolean expression $Y = (A + B + C).(A + B)$.

Unit - II

11. Discuss briefly about canonical and standard form of Boolean algebra and deduce the relation for π and Σ.

(OR)

12. Simplify expression using K-map method

    a. $F(a,b,c,d) = \sum m(0,1,3,5,7,8,9,11,13,15)$

    b. $F(a,b,c,d) = \sum m(0,2,8,10,14) + \sum d(5,15)$

Unit - III

13. Write an essay abut multiplexers and Demultiplexers.

(OR)

14. Explain the construction and working of CMOS NOR gate.

Unit - IV

15. Describe the working of master slave JKFF with a neat diagram.

(OR)

16. Explain briefly about MOD - 16 counter with truth table and timing diagram.

Unit - V

17. Discuss briefly about PAL (Programmable array logic)

(OR)

18. Describe PROM, EPROM, EEPROM and EAROM.

Digital electronics

Roll No. _____ [Total No. of Pages :2

3003ELE15

B.Sc. (CBCS) DEGREE EXAMINATIONS, FEBRUARY/MARCH - 2023

(Examination at the end of Third Semester)

Part-II: Electronics

DIGITAL ELECTRONICS

(Regulation 2015-16)

Time : 3 Hours **Maximum Marks : 75**

SECTION-A

Answer any **Five** questions. BCD **(5×5=25)**

1. Explain conversion of number system from 8-4-2-1 to excess-3 code
2. Why NAND and NOR gates are known as universal?
3. Implement the following function using only NOR Gates F=a.(b+c) + (b. c).
4. Explain digital logic gates with truth table.
5. Explain 2:1 multiplexer.
6. Explain Half Subtractor.
7. Discuss the difference between synchronous and asynchronous sequential circuits.
8. Draw the logic diagram of a master slave J-K flip-flop.

SECTION-B

Answer **Five** of the following. Each question carries **10** marks. **(5×10=50)**

Unit - I

9. a) What is the use of complements? Perform subtraction using 9's and 10's complement

(OR)

b) Express the following numbers in decimal : $(10110.0101)_2$, $(16.5)_{16}$, $(26.24)_8$.

Unit - II

10. a) Obtain the simplified expression in sum of products for the following Boolean function. $F(A,B,C,D) = \sum_m (2,3,12,13,14,15)$.

(OR)

b) Obtain the simplified expression in product of sums. $F(A,B,C,D) = \pi (0,1,2,3,4,10,11)$.

Unit - III

11. a) Explain encoder and decoder.

(OR)

b) Explain Half and full adders.

Unit - IV

12. a) Explain shift Right and Left with examples.

(OR)

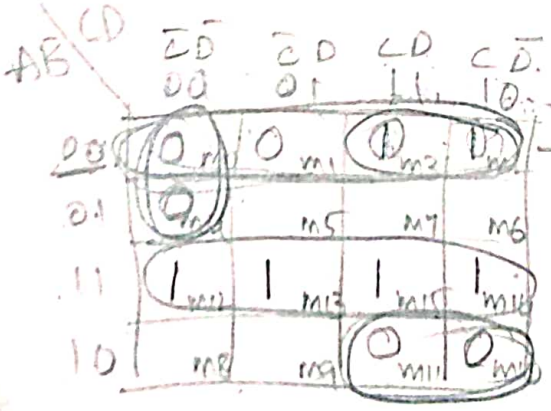
b) Convert an SR Flip-Flop into JK Flip-Flop.

Unit - V

13. a) Explain about RAM in detail.

(OR)

b) Explain different types ROMs.



$F(A,B,C,D) = \bar{A}\bar{B} + C + AB$

Electronics

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3003ELE20

B.Sc. (CBCS) DEGREE EXAMINATIONS, FEBRUARY / MARCH - 2022

(Examination at the end of Third Semester)

Part - II : Electronics

ANALOG CIRCUITS AND COMMUNICATION

(Regulation : 2020-21)

Time : 3 Hours **Maximum Marks :75**

SECTION - A

Answer any **FIVE** questions. **(5×5=25)**

1. What are the characteristics of an ideal op-Amp?
2. Explain op-Amp as summing amplifier.
3. Describe the working of op-Amp voltage regulator.
4. An op-amp has a differential gain of 100 and a common mode gain of 0.01. Find CMRR.
5. What is the need of modulation? Explain.
6. Explain the working of AM modulator.
7. Explain the frequency deviation and modulation index of FM.
8. A sinusoidal carrier voltage of 80 volts amplitude and 1 MHz frequency is amplitude modulated by a sinusoidal voltage of frequency 5 KHz producing 50% modulation. Calculate the amplitude and frequency of lower and upper side frequencies.

SECTION - B

Answer **ALL** questions. **(5×10=50)**

9. a) Draw the block diagram of op-Amp and explain the function of each block.

(OR)

b) Explain the operation of integrator and differentiator using op-Amp.

10. a) Explain the working of square wave generator circuit using op-Amp.

(OR)

b) Draw and explain IC 555 functional block diagram.

11. a) Explain amplitude modulation and obtain an expression for an AM wave.

(OR)

b) Explain the need for demodulation. Explain the operation of diode detector with a neat circuit diagram.

12. a) Explain the working of FM modulator with neat circuit diagram.

(OR)

b) Explain the operation of varactor diode modulator with neat circuit diagram.

13. a) Explain the working of super heterodyne receiver with the help of block diagram.

(OR)

b) Draw the block diagram of FM receiver and explain the function of each block.

Dept of Electronics

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3003ELE15

B.Sc. (CBCS) DEGREE EXAMINATIONS, FEBRUARY/MARCH - 2023

(Examination at the end of Third Semester)

Part-II: Electronics

DIGITAL ELECTRONICS

(Regulation 2015-16)

Time : 3 Hours Maximum Marks : 75

SECTION - A

Answer any **Five** questions. (5×5=25)

1. Explain conversion of number system from 8-4-2-1 to excess-3 code
2. Why NAND and NOR gates are known as universal?
3. Implement the following function using only NOR Gates F=a.(b+c) + (b. c).
4. Explain digital logic gates with truth table.
5. Explain 2:1 multiplexer.
6. Explain Half Subtractor.
7. Discuss the difference between synchronous and asynchronous sequential circuits.
8. Draw the logic diagram of a master slave J-K flip-flop.

SECTION- B

Answer **Five** of the following. Each question carries **10** marks. (5×10=50)

Unit - I

9. a) What is the use of complements? Perform subtraction using 9's and 10's complement

(OR)

b) Express the following numbers in decimal : $(10110.0101)_2$, $(16.5)_{16}$, $(26.24)_8$.

Unit - II

10. a) Obtain the simplified expression in sum of products for the following Boolean function. $F(A,B,C,D) = \Sigma(2,3,12,13,14,15)$.

(OR)

b) Obtain the simplified expression in product of sums. $F(A,B,C,D) = \pi(0,1,2,3,4,10,11)$.

Unit - III

11. a) Explain encoder and decoder.

(OR)

b) Explain Half and full adders.

Unit - IV

12. a) Explain shift Right and Left with examples.

(OR)

b) Convert an SR Flip-Flop into JK Flip-Flop.

Unit - V

13. a) Explain about RAM in detail.

(OR)

b) Explain different types ROMs.

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3003ELE20

B.Sc. Degree (CBCS) Examinations, January - 2024

(Examination at the end of Third Semester)

Part-II: Electronics

Analog Circuits and Communication

(Regulation 2020-21)

Time : 3 Hours **Maximum Marks : 75**

SECTION - A

Answer any Five questions. **(5×5=25)**

1. Define op-Amp and mention its characteristics.
2. Explain about inverting and non-inverting amplifiers.
3. Draw the functional Block diagram of IC-555 and Explain its working.
4. Write a short notes on Schmidt trigger.
5. Explain the applications of Amplitude modulation.
6. Explain how Diode detector is used for the detection of A.M. Signals.
7. Define:
   a) Deviation Ratio
   b) Modulation index of F.M.
8. Mention the differences between A.M and F.M.

SECTION - B

Answer All the following questions. **(5×10=50)**

9. a) Draw the block diagram of op-Amp and explain the function of Each block.

(OR)

b) Explain about
   i) Integrator
   ii) Differentiator using Op-Amp.

10. a) Explain about Low Pass, High pass and Band Pass filters.

(OR)

b) Explain the working of Triangular wave generator Circuit using Op-Amp.

11. a) Explain about Amplitude modulation and obtain an expression for an A.m wave.

(OR)

b) Explain the generation methods of A.m wave. Explain How Transistor modulator is used for this purpose?

12. a) Define frequency modulation and derive an expression for F.m wave.

(OR)

b) Describe the phase locked loop (PLL) in frequency demodulation.

13. a) Explain about AM Transmitter and super heterodyne Am receiver with a block diagram.

(OR)

b) Draw the block diagram of Fm receiver and explain the function of Each block.

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4003ELE15

B.Sc. DEGREE (CBCS) EXAMINATIONS, AUGUST - 2021

(Examination at the end of Fourth Semester)

Part - II : Electronics

ANALOG AND DIGITAL IC-APPLICATIONS

(Regulation : 2015-16)

Time : 3 Hours Maximum Marks : 75

PART - A

Answer any **Five** questions. (5×5=25)

1. What is an operational amplifier? Draw the block diagram of Op-amp?
2. Explain the Op-amp as summing amplifier?
3. Explain Op-amp as a voltage regulator?
4. Explain the square wave generator using Op-amp?
5. Draw the 4-bit universal shift register?
6. Write a short notes on mod N Counter?
7. Explain Binary Weighted D/A converter?
8. Explain serial to parallel shift register?

PART - B

Answer All the questions. (5×10=50)

UNIT - I

9. a) Explain Op-amp as integrator and differentiator?

(OR)

b) Draw the circuit diagram of logarithmic amplifier and explain?

UNIT - II

10. a) Explain astable multivibrator using Op-amp?

(OR)

b) Draw the functional block diagram of IC 555 and explain what are the applications of IC 555.

UNIT - III

11. a) Explain Grey to Binary Conversion?

(OR)

b) Explain Binary Up/down counter in detail?

UNIT - IV

12. a) Explain successive approximation A/D converter in detail?

(OR)

b) Explain R-2R ladder D/A converter?

UNIT - V

13. a) Explain the working of digital clock?

(OR)

b) Explain the interfacing of LED's?

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4003ELE15

B.Sc. DEGREE (CBCS) EXAMINATIONS, AUGUST - 2021

(Examination at the end of Fourth Semester)

Part - II : Electronics

ANALOG AND DIGITAL IC-APPLICATIONS

(Regulation : 2015-16)

Time : 3 Hours **Maximum Marks : 75**

PART - A

Answer any **Five** questions. **(5×5=25)**

1. What is an operational amplifier? Draw the block diagram of Op-amp?
2. Explain the Op-amp as summing amplifier?
3. Explain Op-amp as a voltage regulator?
4. Explain the square wave generator using Op-amp?
5. Draw the 4-bit universal shift register?
6. Write a short notes on mod N Counter?
7. Explain Binary Weighted D/A converter?
8. Explain serial to parallel shift register?

PART - B

Answer All the questions. **(5×10=50)**

UNIT - I

9. a) Explain Op-amp as integrator and differentiator?

(OR)

b) Draw the circuit diagram of logarithmic amplifier and explain?

UNIT - II

10. a) Explain astable multivibrator using Op-amp?

(OR)

b) Draw the functional block diagram of IC 555 and explain what are the applications of IC 555.

UNIT - III

11. a) Explain Grey to Binary Conversion?

(OR)

b) Explain Binary Up/down counter in detail?

UNIT - IV

12. a) Explain successive approximation A/D converter in detail?

(OR)

b) Explain R-2R ladder D/A converter?

UNIT - V

13. a) Explain the working of digital clock?

(OR)

b) Explain the interfacing of LED's?

Roll No. _____ [Total No. of Pages : 2

4003ELE15
B.Sc. (CBCS) DEGREE EXAMINATIONS, JULY/AUGUST - 2022
(Examination at the end of Fourth Semester)
Part - II : Electronics
Analog and Digital IC Applications
(Regulation 2015-16)

Time : 3 Hours **Maximum Marks : 75**

SECTION - A

Answer any **Five** questions. **(5×5=25)**

1. Explain the concept of virtual ground.
2. How does an OP-AMP acts as a voltage follower?
3. Explain the working of OP-AMP as comparator.
4. Explain how an OP-AMP acts as a low pass filter.
5. Briefly discuss about Mod N counter.
6. Explain the conversion of binary number to grey number.
7. Explain the working of A/D converter.
8. Explain Serial to Parallel Shift register.

SECTION - B

Answer **ALL** questions. **(5×10=50)**

9. Explain the working of an OP-AMP as Adder and Subtractor.

(OR)

10. Explain the working of an OP-AMP as Integrator and Differentiator.
11. With a neat circuit diagram explain the working of Astable Multivibrator.

(OR)

12. Explain the pin diagram of timer IC 555.

13. Explain BCD to Seven Segment conversion.

(OR)

14. Explain the design of Universal Shift Register.

15. Explain briefly about Single Slope and Dual Slope Converter.

(OR)

16. Explain R-2R ladder D/A converter.

17. Explain the interfacing of LED.

(OR)

18. Explain the working of a digital clock.

(5003ELE15–B)

B.Sc. (CBCS) DEGREE EXAMINATION,
OCTOBER/NOVEMBER 2019

(Examination at the end of Fifth Semester)

Part II — Elective Paper

ELECTRONIC COMMUNICATIONS

(Regulation 2015-2016)

Time : Three hours Maximum : 75 marks

SECTION A — (5 × 10 = 50 marks)

Answer the following questions

1. (a) Explain different types of noise in communication systems.

Or

(b) Draw the block diagram of communication system and explain each block in detail.

2. (a) Define Modulation. Explain briefly about the generation of AM.

Or

(b) Briefly explain about suppression of side band using Filter method.

3. (a) Describe the Frequency spectrum of FM and finds its bandwidth. Why we need modulation? Discuss.

Or

(b) Sketch the block diagram of PLL and explain in detail about capture and locking range.

4. (a) What is heterodyning in radio receiver? Draw the block diagram of FM super heterodyne receiver and explains the function of each block.

Or

(b) Draw the block diagram of FDM and explain each pin in detail.

5. (a) (i) State Sampling theorem. (2)

(ii) Explain generation and demodulation of PWM, with neat sketch. (8)

Or

(b) Explain generation and demodulation of PCM with neat sketch.

SECTION B — (5 × 5 = 25 marks)

Answer any FIVE questions

6. Describe the Frequency spectrum of FM.

7. What is necessity need for modulation?

8. Comparison between AM, FM, PM.

9. Explain about the generation of FM.

10. Write about receiver Parameters.

11. Distinguish the relationship between bit rate and baud rate.

12. Explain briefly about TDM.

13. Discuss about the generation of PPM.

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Roll No. _____ [Total No. of Pages : 2

5003ELE15-A
B.Sc. (CBCS) DEGREE EXAMINATIONS, MARCH - 2021
(Examination at the end of Fifth Semester)
MICROPROCESSOR (INTEL 8085)
Part - II : Compulsory Paper
(Regulation 2015-16)

Time : 3 Hours **Maximum Marks : 75**

SECTION - A

Answer the following questions. **(5×10=50)**

1. a) Draw the schematic diagram of 8085 and explain the operations of status and control signals.

(OR)

b) Explain the following operations of 8085 instructions.

1. STA addr
2. LX1rP
3. DAA
4. RAL and
5. CMP M.

2. a) Classify the instruction set of 8085 with examples.

(OR)

b) Classify the registers of 8085 and explain their function.

3. a) Draw the pin diagram of 8085 and explain each pin in detail.

(OR)

b) Explain the timing diagram for the memory read and write operations.

4. a) Explain interfacing memory (4K×8 ROM) with 8085.

(OR)

b) Explain I/O devices can be interfaced to microprocessor using memory mapped I/O.

5. a) Explain briefly about block diagram of display interface 8279.

(OR)

b) Discuss briefly about programmable interrupt controller 8253.

SECTION - B

Answer any **FIVE** questions. **(5×5=25)**

6. Explain the operation of program counter 8085.
7. Explain Debugging process.
8. Explain direct and immediate addressing modes of 8085.
9. Write an ALP to addition of two 16 bit nos.
10. Explain the full action of a subroutine.
11. Explain briefly about I/O mapped I/O.
12. Explain the interfacing of stepper motor.
13. Draw the timing diagram for fetch cycle.

Roll No. _____ [Total No. of Pages : 2

5003ELE15-B
B.Sc. (CBCS) DEGREE EXAMINATIONS, MARCH - 2021
(Examination at the end of Fifth Semester)
ELECTRONIC COMMUNICATIONS
Part - II : Elective Paper
(Regulation 2015-16)

Time : 3 Hours **Maximum Marks : 75**

SECTION - A

Answer the following questions. **(5×10=50)**

1. a) Draw the block diagram of communication system and explain each block in detail.

(OR)

b) Explain different types of noises in communication system.

2. a) Explain the generation of AM using transistor modulator. Write a note on modulation index.

(OR)

b) Briefly explain about suppression of side band using filter method.

3. a) Describe the generation of FM wave.

(OR)

b) Sketch the block diagram of PLL and explain in detail about capture and locking range.

4. a) Write an essay about the transmitters for AM and FM.

(OR)

b) Draw the block diagram of FDM and explain each pin in detail.

5. a) State sampling theorem. Explain the generation and demodulation of PWM, with neat sketch.

(OR)

b) Explain the generation and demodulation of PCM with neat sketch.

SECTION - B

Answer any **Five** questions. **(5×5=25)**

6. Distinguish the relation between bit rate and band rate.
7. Compare AM, FM and PM.
8. Describe the frequency spectrum of Amplitude modulation.
9. Describe the frequency spectrum of FM.
10. Write about receiver parameters.
11. Explain briefly about TDM.
12. Write a note on differential pulse code modulation.
13. Explain the terms sensitivity, selectivity and fidelity.

Electronics

Roll No. _____ [Total No. of Pages : 2

5003ELE15-A

B.Sc. (CBCS) DEGREE EXAMINATIONS, FEBRUARY - 2022

(Examination at the end of Fifth Semester)

Part - II : Compulsory Paper

MICROPROCESSOR (INTEL 8085)

(Regulation 2015-16)

Time : 3 Hours Maximum Marks : 75

SECTION - A

Answer ALL the questions. (5×10=50)

1. A) Draw the Block diagram of Intel 8085 and explain each block.

(OR)

B) Explain in detail about Control Signals and status signals of 8085.

2. A) Write about the addressing modes of 8085 with give examples.

(OR)

B) Draw the timing diagrams for Opcode Fetch Cycle and explain the process in detail.

3. A) Explain the concept of Stack & Subroutines in 8085.

(OR)

B) Write an ALP for addition of two 16-bit numbers.

4. A) Explain the interfacing of 2K X 8 ROM to 8085 in detail.

(OR)

B) Explain the interfacing of an I/O port in Memory Mapped I/O.

5. A) Draw the block Diagram of 8255 and explain each block.

(OR)

B) Draw the block Diagram of 8279 and explain each block.

SECTION - B

Answer any **FIVE** questions. **(5×5=25)**

6. Explain interrupts in 8085.
7. Explain 8085 bus organization.
8. Write a note on Instruction set classification of 8085.
9. Write a note on Instruction cycle in 8085.
10. Write an ALP to add two 8-bit numbers.
11. Write any 5 Differences between I/O mapped I/O and Memory Mapped I/O.
12. Write short note on modes of Programmable peripheral device (8255).
13. Draw the interfacing diagram of stepper motor control interface.

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1003ELE20

B.Sc. (CBCS) DEGREE EXAMINATIONS, APRIL/MAY - 2022

(Examination at the end of First Semester)

Part - II: Electronics

CIRCUIT THEORY AND ELECTRONIC DEVICES

(Regulation 2020-21)

Time : 3 Hours **Maximum Marks : 75**

Section - A

Answer any **five** questions. Each question carries **5** marks. **(5×5=25)**

1. Write the general format of Sine Wave for Voltage and Current.
2. Write the differences between AC and DC.
3. Explain star to Delta and Delta to Star Conversion.
4. State and prove maximum power Transfer theorem.
5. Explain the working of Passive differentiating circuit.
6. Explain the application of UJT as a Relaxation oscillator.
7. Write the advantages of FET over BJT.
8. Write a short note on LDR.

Section - B

Answer the following questions. Each question carries **10** marks. **(5×10=50)**

9. a) Derive the expressions for average and rms value of alternating current.

(OR)

b) Explain the phase difference between voltage across and current through an ideal inductor.

10. a) State and prove Norton's theorem.

(OR)

b) State and prove superposition theorem.

11. a) Explain the frequency response of RC low pass and High Pass Filters.

(OR)

b) Derive the expression of resonant frequency of a parallel LCR circuit.

12. a) Explain the input and output characteristics of a CE transistor.

(OR)

b) Explain the construction and working of JFET.

13. a) Explain the construction and working of full wave Rectifier.

(OR)

b) Explain the construction, working and characteristics of a photo diode.

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Roll No. _____ [Total No. of Pages : 2

1003ELE20
B.Sc. DEGREE EXAMINATIONS, JULY - 2021
(Examination at the end of First Semester)
ELECTRONICS
Circuit Theory and Electronic Devices
(Regulation : 2020-21)

Time : 3 Hours **Maximum Marks : 75**

SECTION - A

Answer any **Five** of the following. **(5×5=25)**

1. Explain about voltage and current.
2. Explain briefly about branch current method.
3. State and prove Reciprocity theorem.
4. Explain the frequency response of RL low pass filter.
5. Explain RC differentiator circuit.
6. What are the advantages of FET over BJT.
7. Explain the working of Π - section filter.
8. Explain the working of Half wave rectifier.

SECTION - B

Answer any **ONE** of the following from each unit. **(5×10=50)**

UNIT - I

9. a) Explain about the phase relations between R,L and C.

(OR)

b) Derive an expression of RMS value and Average value of alternating currents.

UNIT - II

10. a) State and prove Thevenin's theorem.

(OR)

b) State and prove maximum power transfer theorem.

UNIT - III

11. a) Explain the frequency response of RC Low pass and high pass filter.

(OR)

b) Derive an expression for resonant frequency of RLC parallel resonance circuit.

UNIT - IV

12. a) Explain the construction and working of UJT.

(OR)

b) Draw the Input and output characteristics of a BJT in common emitter configuration.

UNIT - V

13. a) Describe the construction and working of LED? Draw its spectral response.

(OR)

b) Draw the circuit of Full wave rectifier and derive expression for its efficiency and ripple factor.

Dept of Electronics

Roll No. _____ [Total No. of Pages : 2

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B.Sc. (CBCS) DEGREE EXAMINATIONS, MARCH/APRIL - 2023

(Examination at the end of First Semester)

Part-II : Electronics

CIRCUIT THEORY AND ELECTRONIC DEVICES

(Regulation 2020-21)

Time : 3 Hours Maximum Marks : 75

SECTION-A

Answer any FIVE questions. (5×5=25)

1. Define current and voltage? Draw sine waves of current and Voltage.
2. Explain phase relations of R, L and C.
3. Write short notes on branch current method.
4. Write steps in nodal analysis to find node voltage.
5. Explain frequency responses of RC and RL circuits.
6. Explain Q-factor in RLC circuits.
7. Write advantages of FET over BJT.
8. Explain Ripple factor.

SECTION - B

Answer All questions. (5×10=50)

9. a) Derive the expression for average and RMS values of AC.

(OR)

b) Write difference between AC and DC.

10. a) State and prove super position theorem.

(OR)

b) State and prove Thevenin's theorem.

11. a) Explain frequency responses of Low pass and high pass filters in RL and RC circuits.

(OR)

b) Explain frequency response of series and parallel resonance circuits.

12. a) Write characteristics of JFET and MOSFET.

(OR)

b) Explain working and characteristics of UJT.

13. a) Explain half wave and full wave rectifiers.

(OR)

b) Discuss about Light Dependent Resistor (LDR).

Roll No. _____ [Total No. of Pages : 2

6003ELE20-A2

B.Sc. (CBCS) DEGREE EXAMINATIONS, JANUARY/FEBRUARY - 2024

(Examination at the end of Fifth Semester)

Part - II : Electronics

Electronic Instrumentation

(Regulation 2020-21)

Time : 3 Hours **Maximum Marks : 75**

SECTION - A

విభాగము - ఎ

Answer any FIVE of the following questions. **(5×5=25)**

ఈ క్రింది ఏవైనా ఐదు ప్రశ్నలకు సమాధానములు వ్రాయుము.

1) What is 4½ display digital multimeter.
4½ డిస్ప్లే డిజిటల్ మల్టీమీటర్ అంటే ఏమిటి?

2) Discuss various types of oscilloscopes and their uses.
వివిధ రకాల ఒసిల్లోస్కోప్‌లు మరియు వాటి ఉపయోగాల గురించి చర్చించండి.

3) Describe the working of a photo transducer.
ఫోటో ట్రాన్స్‌డ్యూసర్ యొక్క పనితీరును వివరింపుము.

4) Mention the limitations of SSDs.
SSDs ల పరిమితులను పేర్కొనండి.

5) Explain the operation of Glucometer.
గ్లూకోమీటర్ యొక్క పనితీరును వివరించండి.

6) Explain about time base operation.
టైమ్‌బేస్ ఆపరేషన్ గురించి వివరింపుము.

7) Explain the operation of fiber optic sensors.
ఫైబర్ ఆప్టిక్ సెన్సార్ల పనితీరును వివరింపుము.

8) Explain about AC voltmeter.
AC వోల్ట్‌మీటర్ గురించి వివరింపుము.

SECTION - B

విభాగము - బి

Answer the following Five questions. **(5×10=50)**

ఈ క్రింది వానిలో ఏవైనా ఐదు ప్రశ్నలకు సమాధానములు వ్రాయుము.

9. a) Explain the operation of digital multimeter using its block diagram.
డిజిటల్ మల్టీమీటర్ యొక్క పనితీరును దాని బ్లాక్ రేఖాచిత్రాన్ని ఉపయోగించి వివరింపుము.

(OR/లేదా)

b) Draw the block diagram of function generator and explain each block.
ఫంక్షన్ జనరేటర్ యొక్క బ్లాక్ రేఖాచిత్రాన్ని గీయండి మరియు ప్రతి బ్లాక్‌ను వివరించండి.

10. a) Draw the block diagram of CRO and explain each block .
CRO యొక్క బ్లాక్ రేఖాచిత్రాన్ని గీయండి మరియు ప్రతి బ్లాక్‌ను వివరించండి.

(OR/లేదా)

b) Explain about Cathode ray tube in detail with a neat diagram.
కాథోడ్ రేట్యూబ్ గురించి చక్కని రేఖాచిత్రంతో వివరంగా వివరించండి.

11. a) Discuss the classification of transducers.
ట్రాన్స్‌డ్యూసర్‌ల వర్గీకరణను చర్చించండి.

(OR/లేదా)

b) Define capacitive touch sensor and Explain its performance in mobile phone.
కెపాసిటివ్ టచ్ సెన్సార్‌ను నిర్వచించండి మరియు మొబైల్‌ఫోన్ లో దాని పనితీరును వివరించండి.

12. a) Describe the working of liquid crystal displays.
లిక్విడ్ క్రిస్టల్ డిస్‌ప్లే పనితీరును వివరించండి.

(OR/లేదా)

b) Explain the operation of Seven Segment display.
ఏడు సెగ్మెంట్ డిస్‌ప్లే యొక్క పనిచేయు విధానాన్ని వివరించండి.

13. a) Describe the operating principle and uses of Pulse oxymeter.
పల్స్ ఆక్సిమీటర్ యొక్క ఆపరేటింగ్ సూత్రం మరియు ఉపయోగాలను వివరించండి.

(OR/లేదా)

b) Explain the basic principle and its parts of Stethoscope.
స్టెతస్కోప్ యొక్క ప్రాథమిక సూత్రం మరియు దాని భాగాలను వివరించండి.

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6003ELE20-A2

B.Sc. (CBCS) DEGREE EXAMINATIONS, JANUARY/FEBRUARY - 2024

(Examination at the end of Fifth Semester)

Part - II : Electronics

Electronic Instrumentation

(Regulation 2020-21)

Time : 3 Hours **Maximum Marks : 75**

SECTION - A

విభాగము - ఎ

Answer any FIVE of the following questions. **(5×5=25)**

ఈ క్రింది ఏవైనా ఐదు ప్రశ్నలకు సమాధానములు వ్రాయుము.

1) What is 4½ display digital multimeter.

4½ డిస్ప్లే డిజిటల్ మల్టీమీటర్ అంటే ఏమిటి?

2) Discuss various types of oscilloscopes and their uses.

వివిధ రకాల ఒసిల్లోస్కోప్‌లు మరియు వాటి ఉపయోగాల గురించి చర్చించండి.

3) Describe the working of a photo transducer.

ఫోటో ట్రాన్స్‌డ్యూసర్ యొక్క పనితీరును వివరింపుము.

4) Mention the limitations of SSDs.

SSDs ల పరిమితులను పేర్కొనండి.

5) Explain the operation of Glucometer.

గ్లూకోమీటర్ యొక్క పనితీరును వివరించండి.

6) Explain about time base operation.

టైమ్‌బేస్ ఆపరేషన్ గురించి వివరింపుము.

7) Explain the operation of fiber optic sensors.

ఫైబర్ ఆప్టిక్ సెన్సార్ల పనితీరును వివరింపుము.

8) Explain about AC voltmeter.

AC వోల్ట్‌మీటర్ గురించి వివరింపుము.

SECTION - B

విభాగము - బి

Answer the following Five questions. **(5×10=50)**

ఈ క్రింది వానిలో ఏవైనా ఐదు ప్రశ్నలకు సమాధానములు వ్రాయుము.

9. a) Explain the operation of digital multimeter using its block diagram.
డిజిటల్ మల్టీమీటర్ యొక్క పనితీరును దాని బ్లాక్ రేఖాచిత్రాన్ని ఉపయోగించి వివరింపుము.

(OR/లేదా)

b) Draw the block diagram of function generator and explain each block.
ఫంక్షన్ జనరేటర్ యొక్క బ్లాక్ రేఖాచిత్రాన్ని గీయండి మరియు ప్రతి బ్లాక్‌ను వివరించండి.

10. a) Draw the block diagram of CRO and explain each block .
CRO యొక్క బ్లాక్ రేఖాచిత్రాన్ని గీయండి మరియు ప్రతి బ్లాక్‌ను వివరించండి.

(OR/లేదా)

b) Explain about Cathode ray tube in detail with a neat diagram.
కాథోడ్ రేట్యూబ్ గురించి చక్కని రేఖాచిత్రంతో వివరంగా వివరించండి.

11. a) Discuss the classification of transducers.
ట్రాన్స్‌డ్యూసర్‌ల వర్గీకరణను చర్చించండి.

(OR/లేదా)

b) Define capacitive touch sensor and Explain its performance in mobile phone.
కెపాసిటివ్ టచ్ సెన్సార్‌ను నిర్వచించండి మరియు మొబైల్‌ఫోన్ లో దాని పనితీరును వివరించండి.

12. a) Describe the working of liquid crystal displays.
లిక్విడ్ క్రిస్టల్ డిస్‌ప్లే పనితీరును వివరించండి.

(OR/లేదా)

b) Explain the operation of Seven Segment display.
ఏడు సెగ్మెంట్ డిస్‌ప్లే యొక్క పనిచేయు విధానాన్ని వివరించండి.

13. a) Describe the operating principle and uses of Pulse oxymeter.
పల్స్ ఆక్సిమీటర్ యొక్క ఆపరేటింగ్ సూత్రం మరియు ఉపయోగాలను వివరించండి.

(OR/లేదా)

b) Explain the basic principle and its parts of Stethoscope.
స్టెతస్కోప్ యొక్క ప్రాథమిక సూత్రం మరియు దాని భాగాలను వివరించండి.

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6003ELE20-A1

B.Sc. (CBCS) DEGREE EXAMINATIONS, JANUARY/FEBRUARY - 2024

(Examination at the end of Fifth Semester)

Part - II : Electronics

INDUSTRIAL ELECTRONICS

(Regulation 2020-21)

Time : 3 Hours **Maximum Marks : 75**

SECTION - A

విభాగము - ఎ

Write any FIVE of the following questions. **(5×5=25)**

ఈ క్రింది ఏవైనా ఐదు ప్రశ్నలకు సమాధానములు వ్రాయుము.

1. Explain the working of a bridge rectifier.
   బ్రిడ్జ్ రెక్టిఫైయర్ యొక్క పనితీరును వివరించండి.
2. Explain the operation of L-Section filter.
   L-సెక్షన్ ఫిల్టర్ యొక్క పనితీరును వివరించండి.
3. Discuss the operation of regulated transistorised power supply.
   నియంత్రిత ట్రాన్సిస్టరైజ్డ్ పవర్ సప్లై యొక్క ఆపరేషన్ గురించి చర్చించండి.
4. What is the principle of SMPS?
   SMPS యొక్క సూత్రాన్ని తెలుపుము.
5. Explain the working of Voltage tripler circuit.
   వోల్టేజ్ ట్రిప్లర్ సర్క్యూట్ యొక్క పనితీరును వివరింపుము.
6. Describe the working of an SCR as inverter parallel circuit.
   SCR ఇన్వర్టర్ సమాంతర సర్క్యూట్‌గా ఎలా పని చేస్తుందో వివరింపుము.
7. What is dielectric heating?
   విద్యుద్వాహక తాపన అంటే ఏమిటి?
8. Explain the mathematical analysis for resistive load of an SCR.
   SCR యొక్క రెసిస్టివ్ లోడ్ గణిత విశ్లేషణమును వివరింపుము.

SECTION - B

విభాగము - బి

(5×10=50)

Answer All the following questions :

ఈ క్రింది అన్ని ప్రశ్నలకు సమాధానములు వ్రాయుము.

9. a) Explain the working of a full Wave rectifier. Derive the expression for its efficiency.
ఫుల్ వేవ్ రెక్టిఫైయర్ యొక్క పనితీరును వివరించి, దాని సామర్థ్యం సమీకరణాన్ని ఉత్పాదింపుము.

(OR/లేదా)

b) Describe the operation of transistor Shunt voltage regulator.
ట్రాన్సిస్టర్ షంట్ వోల్టేజ్ రెగ్యులేటర్ యొక్క ఆపరేషన్‌ను వివరించండి.

10. a) Draw the block diagram of regulated power supply and explain each block in detail.
రెగ్యులేటెడ్ పవర్ సప్లయ్ యొక్క బ్లాక్ రేఖాచిత్రాన్ని గీసి దాని యొక్క ప్రతి బ్లాక్‌ను వివరించండి.

(OR/లేదా)

b) Explain the working of Switch Mode Power Supply.
SMPS పనితీరును వివరింపుము.

11. a) Describe the operation of Half Wave voltage doubler.
హాఫ్ వేవ్ వోల్టేజ్ డబ్లర్ పనితీరును వివరింపుము.

(OR/లేదా)

b) Discuss the working of Full Wave voltage doubler.
ఫుల్‌వేవ్ వోల్టేజ్ డబ్లు ర్ యొక్క పనితీరును వివరింపుము.

12. a) Explain the working of SCR Half Wave rectifier circuit.
SCR హాఫ్ వేవ్ రెక్టిఫైయర్ సర్క్యూట్ యొక్క పనితీరును వివరింపుము.

(OR/లేదా)

b) Describe the operation of SCR full wave rectifier circuit.
SCR ఫుల్ వేవ్ రెక్టిఫైయర్ సర్క్యూట్ యొక్క ఆపరేషన్‌ను వివరింపుము.

13. a) Explain the principle and operation of resistance.
నిరోధకము యొక్క సూత్రం మరియు పనితీరును వివరించండి.

(OR/లేదా)

b) Discuss the principle and working of an inductance.
ఇండక్టెన్స్ యొక్క సూత్రము మరియు పనిచేయు విధానాన్ని చర్చించండి.

Roll No. _____ [Total No. of Pages : 2

5003ELE15-B
B.Sc. (CBCS) DEGREE EXAMINATIONS, MARCH - 2021
(Examination at the end of Fifth Semester)
ELECTRONIC COMMUNICATIONS
Part - II : Elective Paper
(Regulation 2015-16)

Time : 3 Hours **Maximum Marks : 75**

SECTION - A

Answer the following questions. **(5×10=50)**

1. a) Draw the block diagram of communication system and explain each block in detail.

(OR)

b) Explain different types of noises in communication system.

2. a) Explain the generation of AM using transistor modulator. Write a note on modulation index.

(OR)

b) Briefly explain about suppression of side band using filter method.

3. a) Describe the generation of FM wave.

(OR)

b) Sketch the block diagram of PLL and explain in detail about capture and locking range.

4. a) Write an essay about the transmitters for AM and FM.

(OR)

b) Draw the block diagram of FDM and explain each pin in detail.

5. a) State sampling theorem. Explain the generation and demodulation of PWM, with neat sketch.

(OR)

b) Explain the generation and demodulation of PCM with neat sketch.

SECTION - B

Answer any **Five** questions. **(5×5=25)**

6. Distinguish the relation between bit rate and band rate.
7. Compare AM, FM and PM.
8. Describe the frequency spectrum of Amplitude modulation.
9. Describe the frequency spectrum of FM.
10. Write about receiver parameters.
11. Explain briefly about TDM.
12. Write a note on differential pulse code modulation.
13. Explain the terms sensitivity, selectivity and fidelity.

Roll No. _____ [Total No. of Pages : 2

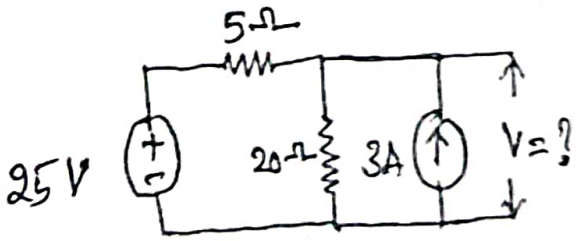
1003ELE16
B.Sc. (CBCS) DEGREE EXAMINATIONS, APRIL/MAY - 2022
(Examination at the end of First Semester)
Part - II : Electronics
BASIC CIRCUIT THEORY
(Regulation 2016-2017)

Time : 3 Hours **Maximum Marks :75**

PART - A

Answer any **Five** of the following questions. **(5×5=25)**

1. Explain average and RMS values.
2. In an AC circuit, the instantaneous current is given by $i = 20\sin\left(20t + \pi/4\right)$, then find
   a. Maximum current.
   b. Frequency.
   c. Time period.
   d. Phase.
3. Write Kirchhoff's current and voltage laws. Explain.
4. What is maximum power transfer theorem? Prove it.
5. Find the voltage 'V' in the circuit given below



6. Explain RC integrating circuit.

7. Find the current in the circuit containing $R = 8\Omega$, and L = 25 mt connected to a battery of 6V in series after one time constant. (Given e = 2.71).

8. Compare series and parallel resonances.

PART - B

Answer the following questions. **(5×10=50)**

UNIT - I

9. What is a sine wave? Discuss general format of sine wave for voltage or current and phase relations.

(OR)

10. Discuss frequency response of R, L and C elements.

UNIT - II

11. Explain series and parallel networks of resistor capacitor and inductor.

(OR)

12. Explain branch current method and mesh analysis.

UNIT - III

13. State and prove Thevenin's theorem.

(OR)

14. State and prove Norton's theorem.

UNIT - IV

15. Discuss RC circuit as a low pass, high pass and band pass filter.

(OR)

16. Discuss RL circuit as a low pass, high pass and band pass filter.

UNIT - V

17. Derive the expression for the resonant frequency in LCR parallel circuit.

(OR)

18. Explain the production of oscillations is LC tank circuit.

Roll No. _____ [Total No. of Pages : 2

5003ELE15-B

B.Sc. (CBCS) DEGREE EXAMINATIONS, FEBRUARY - 2022

(Examination at the end of Fifth Semester)

Part-II: Elective Paper

ELECTRONIC COMMUNICATIONS

(Regulation 2015-16)

Time : 3 Hours **Maximum Marks : 75**

SECTION - A

Answer All the questions. (5×10=50)

1. a) Draw and explain the block of Communication System.

(OR)

b) Explain different types of electronic communication systems.

2. a) Explain how AM waves are generated using Transistor Modulator.

(OR)

b) Explain the generation of single side band suppressed carrier using phase cancellation method.

3. a) Discuss the demodulation process of FM waves using balanced slope detector.

(OR)

b) Define FM. Explain modulation index and frequency spectrum of FM waves.

4. a) Write a note on Communication Channels for AM and FM broadcasting.

(OR)

b) Draw and explain each block of Super heterodyne receiver.

5. a) Explain Pulse Amplitude Modulation (PAM).

(OR)

b) Explain Delta Modulation.

SECTION - B

Answer any **Five** questions. **(5×5=25)**

6. Define thermal noise and shot noise.
7. What is the need for modulation?
8. Explain how AM waves are demodulated using diode detector.
9. Compare AM, FM and PM.
10. Write a note on different parameters of AM receivers.
11. Draw the block diagram of AM Transmitter.
12. Write a note on Pulse Width Modulation (PWM).
13. Write a note on Pulse Code Modulation (PCM).

Roll No. _____ [Total No. of Pages : 2

5003ELE15-B

B.Sc. (CBCS) DEGREE EXAMINATIONS, FEBRUARY - 2022

(Examination at the end of Fifth Semester)

Part-II: Elective Paper

ELECTRONIC COMMUNICATIONS

(Regulation 2015-16)

Time : 3 Hours Maximum Marks : 75

SECTION - A

Answer All the questions. (5×10=50)

1. a) Draw and explain the block of Communication System.

(OR)

b) Explain different types of electronic communication systems.

2. a) Explain how AM waves are generated using Transistor Modulator.

(OR)

b) Explain the generation of single side band suppressed carrier using phase cancellation method.

3. a) Discuss the demodulation process of FM waves using balanced slope detector.

(OR)

b) Define FM. Explain modulation index and frequency spectrum of FM waves.

4. a) Write a note on Communication Channels for AM and FM broadcasting.

(OR)

b) Draw and explain each block of Super heterodyne receiver.

5. a) Explain Pulse Amplitude Modulation (PAM).

(OR)

b) Explain Delta Modulation.

SECTION - B

Answer any **Five** questions. (5×5=25)

6. Define thermal noise and shot noise.
7. What is the need for modulation?
8. Explain how AM waves are demodulated using diode detector.
9. Compare AM, FM and PM.
10. Write a note on different parameters of AM receivers.
11. Draw the block diagram of AM Transmitter.
12. Write a note on Pulse Width Modulation (PWM).
13. Write a note on Pulse Code Modulation (PCM).

Electronics

Roll No. _____ [Total No. of Pages : 2

5003ELE15-B

B.Sc. (CBCS) DEGREE EXAMINATIONS, FEBRUARY - 2022

(Examination at the end of Fifth Semester)

Part-II: Elective Paper

ELECTRONIC COMMUNICATIONS

(Regulation 2015-16)

Time : 3 Hours Maximum Marks : 75

SECTION - A

Answer All the questions. (5×10=50)

1. a) Draw and explain the block of Communication System.

(OR)

b) Explain different types of electronic communication systems.

2. a) Explain how AM waves are generated using Transistor Modulator.

(OR)

b) Explain the generation of single side band suppressed carrier using phase cancellation method.

3. a) Discuss the demodulation process of FM waves using balanced slope detector.

(OR)

b) Define FM. Explain modulation index and frequency spectrum of FM waves.

4. a) Write a note on Communication Channels for AM and FM broadcasting.

(OR)

b) Draw and explain each block of Super heterodyne receiver.

5. a) Explain Pulse Amplitude Modulation (PAM).

(OR)

b) Explain Delta Modulation.

SECTION - B

Answer any **Five** questions. **(5×5=25)**

6. Define thermal noise and shot noise.
7. What is the need for modulation?
8. Explain how AM waves are demodulated using diode detector.
9. Compare AM, FM and PM.
10. Write a note on different parameters of AM receivers.
11. Draw the block diagram of AM Transmitter.
12. Write a note on Pulse Width Modulation (PWM).
13. Write a note on Pulse Code Modulation (PCM).

(6003ELE15-A1)

B.Sc. DEGREE (CBCS) EXAMINATION,
MARCH/APRIL 2019.

(Examination at the end of Sixth Semester)

ELECTRONIC INSTRUMENTATION

(Regulation 2015-2016)

Time : Three hours Maximum : 75 marks

SECTION A — (5 × 5 = 25 marks)

Answer any FIVE of the following.

1. Explain briefly about Accuracy and precision.

2. Briefly explain about working of voltmeter.

3. Explain the working of De-Sauty bridge.

4. Explain briefly about phase detector.

5. Draw the block diagram of PH meter.

6. Explain the characteristics of thermo couple.

7. Explain briefly about Direct digital control system.

8. Explain sensitivity and linearity.

SECTION B — (5 × 10 = 50 marks)

Answer ONE of the following from each Unit.

UNIT I

9. (a) Draw the block diagram of measurement system and explain each block.

Or

(b) Define following

(i) Systematic errors.

(ii) Random errors.

(iii) Resolution.

UNIT II

10. (a) Discuss about the measurement of Inductance using Anderson's bridge.

Or

(b) Draw the block diagram for digital multimeter and explain each block.

UNIT III

11. (a) Explain about function generator in detail.

Or

(b) Explain about phase locked loop in detail.

UNIT IV

12. (a) Draw the block diagram of spectrophotometer. Explain its working.

Or

(b) Explain the different types of transducers in detail.

UNIT V

13. (a) Explain briefly about Distributed Control System (DCS).

Or

(b) Draw the block diagram of PLC and explain its operation.

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(6003ELE15–A2)

B.Sc. DEGREE (CBCS) EXAMINATION,
MARCH/APRIL 2019.

(Examination at the end of Sixth Semester)

POWER ELECTRONICS

(Regulation 2015–2016)

Time : Three hours Maximum : 75 marks

SECTION A — (5 × 5 = 25 marks)

Answer any FIVE of the following.

1. What is the need for semi conductor power devices?

2. Explain the structure of SCR.

3. What are the application of a diac as a triggering device for a triac?

4. Write a short note on step down chopper.

5. Explain about the need of commutating circuits.

6. What are the factors controlling motor speed?

7. What is the principle of operation of DC motor?

8. Explain briefly about the structure of IGBT.

SECTION B — (5 × 10 = 50 marks)

Answer ONE of the following from each Unit.

UNIT I

9. Explain in detail about the enhancement of reverse blocking capacity of power devices.

Or

10. Briefly explain about SCR as a single phase full wave rectifier switch.

UNIT II

11. Draw the V-I characteristics of Triac and explain its working.

Or

12. Explain about V-I characteristics of IGBT.

UNIT III

13. Discuss the operation of dc chopper circuits using self commutation.

Or

14. Explain in detail about the different types of choppers.

UNIT IV

15. Write a note on D.C. link inverters.

Or

16. Explain about parallel capacitor commutated invertors with and without reactive feed backs.

UNIT V

17. With the circuit diagram explain the working of AC motor (Induction motor)

Or

18. Explain the EMF equation and Back EMF.

———————

(6003ELE16-A1)

B.Sc. DEGREE (CBCS) EXAMINATION, MARCH 2020.

(Regulation 2015-16)

(Examinaton at the end of Sixth Semester)

ELECTRONIC INSTRUMENTATION

Time : Three hours Maximum : 75 marks

SECTION A — (5 × 5 = 25 marks)

Answer any FIVE the following questions.

1. What do you mean by term "accuracy" in instruments? Differentiate it with term "Precision".

2. Give the specification of a typical digital voltmeter.

3. Describe the basic principles of phase locked loop.

4. Draw the neat circuit diagram of Spectrophotometer.

5. What are advantages of using bridge circuit for measurement purposes?

6. Explain the operation of distributed control system.

(6003ELE16-A3)

B.Sc. DEGREE (CBCS) EXAMINATION, MARCH 2020

(Examination at the end of Sixth Semester)

POWER ELECTRONICS

(Regulations 2018-19)

Time : Three hours Maximum : 75 marks

SECTION A — (5 × 5 = 25 marks)

Answer any FIVE of the following.

1. Write a short note on power diode.

2. Explain the construction and symbol of TRAIC.

3. With a neat circuit diagram of a single phase half wave rectifier.

4. Give the difference between the series and parallel inverter circuits.

5. Explain the step-down chopper with neat circuit diagram.

6. Briefly explain the factors controlling motor speed.

7. What are the different types of Inverters?

8. Comparison between SCR and DIAC.

Roll No. _____ [Total No. of Pages : 2

6003ELE20-A2

B.Sc. (CBCS) DEGREE EXAMINATIONS, JUNE/JULY - 2023

(Examination at the end of Sixth Semester)

Electronic Instrumentation

Part- Electronics

(Regulation 2015-16)

Time : 3 Hours **Maximum Marks : 75**

SECTION-A

విభాగము - ఎ

Answer any FIVE of the following questions. **(5×5=25)**

క్రింది వాటిలో ఏవైనా **ఐదు** ప్రశ్నలకు సమాధానములు వ్రాయుము.

1. Explain about DC voltmeter.
   DC వోల్ట్‌మీటర్ గురించి వివరించండి.
2. Describe the frequency measurement of CRO.
   CRO యొక్క ఫ్రీక్వెన్సీ కొలతను వివరించండి.
3. Explain about fibre optic sensors.
   ఫైబర్ ఆప్టిక్ సెన్సార్ల గురించి వివరించండి?
4. Explain about common cathode type of SSD.
   SSD యొక్క సాధారణ కాథోడ్ రకం గురించి వివరించండి.
5. Explain about radiography.
   రేడియోగ్రఫీ గురించి వివరించండి.
6. Explain the classification of transducer.
   ట్రాన్స్‌డ్యూసర్ వర్గీకరణను వివరించండి.
7. Explain about time base operation in oscilloscope.
   ఓసిల్లోస్కోప్‌లో టైమ్ బేస్ ఆపరేషన్ గురించి వివరించండి.
8. Explain about 3½ display and 4½ display digital multimeters.
   3½ డిస్ప్లే మరియు 4½ డిస్ప్లే డిజిటల్ మల్టీమీటర్ల గురించి వివరించండి.

SECTION - B

విభాగము - బి

Answer the following Five questions. **(5×10=50)**

క్రింది ఐదు ప్రశ్నలకు సమాధానములు వ్రాయుము.

9. a) Explain construction and working of Analog multimeter with a neat block diagram.
ఒక చక్కని బ్లాక్ రేఖాచిత్రంతో అనలాగ్ మల్టీమీటర్ నిర్మాణం మరియు పనిని వివరించండి.

(OR/లేదా)

b) Draw the block diagram of function generator and explain each block.
ఫంక్షన్ జనరేటర్ యొక్క బ్లాక్ రేఖాచిత్రాన్ని గీయండి మరియు ప్రతి బ్లాక్‌ను వివరించండి.

10. a) Explain vertical deflectron system in Oscilloscope.
ఓసిల్లోస్కోప్‌లో నిలువు విక్షేపం వ్యవస్థను వివరించండి.

(OR/లేదా)

b) Explain about cathode ray tube in detail with a neat diagram.
కాథోడ్ కే ట్యూబ్ గురించి చక్కని రేఖాత్రంతో వివరంగా వివరించండి.

11. a) Define capacitive touch Sensor and Explain its Performance in mobile phone.
కెపాసిటివ్ టచ్ సెన్సార్‌ను నిర్వచించండి. మరియు మొబైల్ ఫోన్‌లో దాని పనితీరును వివరించండి.

(OR/లేదా)

b) Explain about LVDT in detail.
LVDT గురించి వివరంగా వివరించండి.

12. a) Explain the construction and operation of seven segment display.
ఏడు సెగ్మెంట్ డిస్‌ప్లే నిర్మాణం మరియు నిర్వహణను వివరించండి.

(OR/లేదా)

b) Define LCD and explain its construction and working with neat diagram.
LCD ని నిర్వచించండి మరియు దాని నిర్మాణం మరియు పనిని చక్కని రేఖాచిత్రంతో వివరించండి.

UNIT - III

13. a) Explain the basic principle and its parts of stethoscope.
స్టెతస్కోప్ యొక్క ప్రాథమిక సూత్రం మరియు దాని భాగాలను వివరించండి.

(OR/లేదా)

b) Explain in detail about ECG.
ECG గురించి వివరంగా వివరించండి.

Roll No. _____ [Total No. of Pages : 2

6003ELE20-A1
B.Sc. (CBCS) DEGREE EXAMINATIONS, JUNE/JULY - 2023
(Examination at the end of Sixth Semester)
Part : Electronics
INDUSTRIAL ELECTRONICS
(Regulation 2015-16)

Time : 3 Hours **Maximum Marks : 75**

SECTION - A
విభాగం - ఎ

Write any **FIVE** of the following questions: **(5×5=25)**

1. Explain transistor series voltage regulator.
ట్రాన్సిస్టర్ సీరీస్ వోల్టేజ్ రెగ్యులేటర్‌ను వివరించండి.

2. Explain about L-section filter.
L సెక్షన్ ఫిల్టర్ గురించి వివరించండి.

3. Draw the block diagram of regulated power supply.
నియంత్రిత విద్యుత్ సరఫరా యొక్క బ్లాక్ రేఖా చిత్రాన్ని గీయండి.

4. Write the applications of voltage multiplier.
వోల్టేజ్ గుణకం యొక్క అనువర్తనాలను వ్రాయండి.

5. Explain the working of SCR as parallel inverter circuit.
SCR యొక్క పనిని సమాంతర ఇన్వర్టర్ సర్క్యూట్‌గా వివరించండి.

6. Write the mathematical analysis for resistive load.
రెసిస్టివ్ లోడ్ కోసం గణితం విశ్లేషణ వ్రాయండి.

7. Explain the heating effects of resistance.
ప్రతిఘటన యొక్క తాపన ప్రభావాన్ని వివరించండి.

8. Explain briefly voltage tripler circuit diagram.
వోల్టేజ్ ట్రిపుల్ సర్క్యూట్ రేఖా చిత్రాన్ని క్లుప్తంగా వివరించండి.

SECTION - B
విభాగం - బి

Write Answer for the following **Five** questions. **(5×10=50)**

9. a) Explain the construction and working of full wave rectifier with circuit diagram. Calculate the efficiency and ripple factor.
సర్క్యూట్ రేఖా చిత్రంతో పూర్తి వేవ్ రెక్టిఫైయిర్ నిర్మాణం మరియు పనిని వివరించండి. సామర్థ్యం మరియు అలల కారకాన్ని లెక్కించండి.

(OR/లేదా)

b) Explain with circuit diagram transistor shunt voltage regulator. Explain three terminal regulators.(78XX and 79XX).
సర్క్యూట్ రేఖా చిత్రంతో వివరించండి ట్రాన్సిస్టర్ షంట్ వోల్టేజ్ రెగ్యులేటర్. మూడు టర్మినల్ రెగ్యులేటర్లను వివరించండి. (78XX మరియు 79XX).

10. a) Explain the principle and working of switch mode power supply (SMPS).
స్విచ్ మోడ్ విద్యుత్ సరఫరా యొక్క సూత్రం మరియు పనిని వివరించండి.

(OR/లేదా)

b) Explain the circuit and working of simple regulated transistorized power supply.
సాధారణ నియంత్రిత ట్రాన్సిస్టరైజ్డ్ విద్యుత్ సరఫరా యొక్క సర్క్యూట్ మరియు పనిని వివరించండి.

11. a) Explain with circuit diagram the construction and working of half wave voltage doubler.
సగం వేవ్ వోల్టేజ్ రెట్టింపు నిర్మాణం మరియు పనిని సర్క్యూట్ రేఖా చిత్రంతో వివరించండి.

(OR/లేదా)

b) Explain with circuit diagram the construction and working of full wave voltage doubler.
పూర్తి వేవ్ వోల్టేజ్ రెట్టింపు నిర్మాణం మరియు పనిని సర్క్యూట్ రేఖా చిత్రంతో వివరించండి.

12. a) Explain the construction and working of SCR half wave rectifier circuit with wave forms.
తరంగ రూపాలతో SCR హాఫ్ వేవ్ రెక్టిఫెయర్ సర్క్యూట్ నిర్మాణం మరియు పనిని వివరించండి.

(OR/లేదా)

b) Explain construction and working of SCR full wave rectifier along with waveforms.
SCR పూర్తి నిర్మాణం మరియు పనిని వివరించండి వేవ్ రూపాలతో వేవ్ రెక్టిఫైయర్ సర్క్యూట్.

13. a) Explain the principle and operation of inductance heating effects in detail.
ఇండక్టెన్స్ హీటింగ్ ఎఫెక్ట్ యొక్క సూత్రం మరియు ఆపరేషన్ గురించి వివరంగా వివరించండి.

(OR/లేదా)

b) Explain in detail about the heating effects of dielectric heating with principle and operation.
ప్రధాన మరియు ఆపరేషన్తో విద్యుద్వాహక తాపన యొక్క తాపన ప్రభావాల గురించి వివరంగా వివరించండి.

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6003ELE20-A2

B.Sc. (CBCS) DEGREE EXAMINATIONS, JUNE/JULY - 2023

(Examination at the end of Sixth Semester)

Electronic Instrumentation

Part- Electronics

(Regulation 2015-16)

Time : 3 Hours Maximum Marks : 75

SECTION - A

విభాగము - ఎ

Answer any FIVE of the following questions. (5×5=25)

క్రింది వానిలో ఏవైనా **ఐదు** ప్రశ్నలకు సమాధానములు వ్రాయుము.

1. Explain about DC voltmeter.
   DC వోల్టమీటర్ గురించి వివరించండి.
2. Describe the frequency measurement of CRO.
   CRO యొక్క ఫ్రీక్వెన్సీ కొలతను వివరించండి.
3. Explain about fibre optic sensors.
   ఫైబర్ ఆప్టిక్ సెన్సార్ల గురించి వివరించండి?
4. Explain about common cathode type of SSD.
   SSD యొక్క సాధారణ కాథోడ్ రకం గురించి వివరించండి.
5. Explain about radiography.
   రేడియోగ్రఫీ గురించి వివరించండి.
6. Explain the classification of transducer.
   ట్రాన్స్‌డ్యూసర్ వర్గీకరణను వివరించండి.
7. Explain about time base operation in oscilloscope.
   ఓసిల్లోస్కోప్‌లో టైమ్ బేస్ ఆపరేషన్ గురించి వివరించండి.
8. Explain about 3½ display and 4½ display digital multimeters.
   3½ డిస్ప్లే మరియు 4½ డిస్ప్లే డిజిటల్ మల్టీమీటర్ల గురించి వివరించండి.

SECTION - B

విభాగము - బి

Answer the following Five questions. **(5×10=50)**

క్రింది **ఐదు** ప్రశ్నలకు సమాధానములు వ్రాయుము.

9. a) Explain construction and working of Analog multimeter with a neat block diagram.
ఒక చక్కని బ్లాక్ రేఖాచిత్రంతో అనలాగ్ మల్టీమీటర్ నిర్మాణం మరియు పనిని వివరించండి.

(OR/లేదా)

b) Draw the block diagram of function generator and explain each block.
ఫంక్షన్ జనరేటర్ యొక్క బ్లాక్ రేఖాచిత్రాన్ని గీయండి మరియు ప్రతి బ్లాక్‌ను వివరించండి.

10. a) Explain vertical deflectron system in Oscilloscope.
ఓసిల్లోస్కోప్‌లో నిలువు విక్షేపం వ్యవస్థను వివరించండి.

(OR/లేదా)

b) Explain about cathode ray tube in detail with a neat diagram.
కాథోడ్ రే ట్యూబ్ గురించి చక్కని రేఖాత్రంతో వివరంగా వివరించండి.

11. a) Define capacitive touch Sensor and Explain its Performance in mobile phone.
కెపాసిటివ్ టచ్ సెన్సార్‌ను నిర్వచించండి. మరియు మొబైల్ ఫోన్‌లో దాని పనితీరును వివరించండి.

(OR/లేదా)

b) Explain about LVDT in detail.
LVDT గురించి వివరంగా వివరించండి.

12. a) Explain the construction and operation of seven segment display.
ఏడు సెగ్మెంట్ డిస్‌ప్లే నిర్మాణం మరియు నిర్వహణను వివరించండి.

(OR/లేదా)

b) Define LCD and explain its construction and working with neat diagram.
LCD ని నిర్వచించండి మరియు దాని నిర్మాణం మరియు పనిని చక్కని రేఖాచిత్రంతో వివరించండి.

UNIT - III

13. a) Explain the basic principle and its parts of stethoscope.
స్టెతస్కోప్ యొక్క ప్రాథమిక సూత్రం మరియు దాని భాగాలను వివరించండి.

(OR/లేదా)

b) Explain in detail about ECG.
ECG గురించి వివరంగా వివరించండి.

Roll No. _____ [Total No. of Pages : 2

6003ELE15-A1

B.Sc. DEGREE EXAMINATIONS, JULY/AUGUST - 2022

(Examination at the end of Sixth Semester)

Electronic Instrumentation

(Regulation 2015-16)

Time : 3 Hours Maximum Marks : 75

SECTION - A

Answer any Five of the following. (5×5=25)

1. Define accuracy and precision.
2. Briefly explain about working of voltmeter.
3. Explain the working of Wine's bridge
4. Write the features of pH meter.
5. Briefly explain about lock and capture.
6. Write a brief note on PLC operation.
7. Briefly explain about thermometer.
8. Explain about systematic and random errors.

SECTION - B

Answer any ONE of the following from each unit. (5×10=50)

UNIT-I

9. Explain the block diagram of measurement system with neat sketch.

(OR)

10. Define the following
    a) Resolution
    b) Sensitivity
    c) Linearity

UNIT-II

11. Draw the block diagram of digital multi meter and explain each block.

(OR)

12. Explain how the measurement of self inductance using Anderson's bridge.

UNIT-III

13. Explain the working of pulse generator.

(OR)

14. Explain in detail about the principles of phase locked loop (PPL).

UNIT-IV

15. Draw the block diagram of spectrophotometer and explain it's working.

(OR)

16. Explain different types of transducers in detail.

UNIT-V

17. Explain briefly about Direct Digital control (DDC).

(OR)

18. Draw the block diagram of PLC. What are the applications of PLC's.

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6003ELE15-A

B.Sc. DEGREE (CBCS) EXAMINATIONS, AUGUST - 2021

(Examination at the end of Sixth Semester)

MICROCONTROLLERS AND APPLICATIONS

(Regulation : 2015-16)

Time : 3 Hours **Maximum Marks : 75**

SECTION - A

Answer any **FIVE** of the following. **(5×5=25)**

1. Write about evolution of microcontrollers?

2. List and explain 8051 16-bit registers?

3. Explain CALL instruction and stack?

4. Write an ALP program for division of two 8-bit numbers?

5. Write a short note on Subroutine?

6. Explain about Time delay generation and calculation?

7. Draw the pin diagram of DAC.

8. Explain briefly about 160CXX PIC controllers?

SECTION - B

Answer any **ONE** of the following from each Unit. **(5×10=50)**

UNIT - I

9. Explain the difference between microprocessor and microcontroller.

(OR)

10. Draw the pin diagram of 8051 and explain each pin in details.

UNIT - II

11. Define instruction and explain instruction set in detail?

(OR)

12. Write an ALP

    i) addition ii) multiplication of two 8 bit nos?

UNIT - III

13. Explain Jump and CALL program for bit jumps?

(OR)

14. Explain the timer programming in Mode 1 ?

UNIT - IV

15. Describe the interfacing of ADC with 8051 Microcontroller?

(OR)

16. Describe the interfacing of stepper motor and explain?

UNIT - V

17. Explain about Embedded systems?

(OR)

18. Explain about 180FXX series in detail?

Roll No. _____ [Total No. of Pages : 2

6003ELE15-A2

B.Sc. DEGREE EXAMINATIONS, JULY/AUGUST - 2022

(Examination at the end of Sixth Semester)

Power Electronics

(Regulation 2015-16)

Time : 3 Hours **Maximum Marks : 75**

SECTION - A

Answer any FIVE questions. **(5×5=25)**

1. Mention the Merits and Demerits of Power Electronics.
2. What are different turn-ON methods of an SCR and Explain.
3. Write the advantages and Disadvantages of MOSFETs.
4. Draw the block diagram of DC chopper and expalin its principles of operation.
5. Explain the Morgan Chopper.
6. Explain the various Performance parameters of an Inverter.
7. Explain the Principle of RF Induction heating and its applications.
8. Explain the working of Emergency Light System.

SECTION - B

Answer any ONE of the following each unit. **(5×10=50)**

UNIT - I

9. Explain the basic structure and Static V-I characteristics of an SCR.

(OR)

10. Explain the turn-ON mechanism of a SCR using two transistor model. Derive the expression for Anode current in terms of transistor parameters.

UNIT - II

11. Explain the basic structure and V-I characteristics of TRIAC.

(OR)

12. Explain the construction and V-I characteristics of IGBT.

UNIT - III

13. Explain the Operation of step-down (Buck) DC chopper circuit with analysis.

(OR)

14. Explain the Operation of a Step down-up (Buck-Boost) DC chopper circuit.

UNIT - IV

15. Explain the Working of Single phase Full Bridge inverter with R load.

(OR)

16. Explain the Working of a Series inverter with circuit diagram.

UNIT - V

17. Draw the block diagram of SMPS system and Explain its working.

(OR)

18. Explain the Operation of a static circuit breakers used in AC circuits and DC circuits.

Roll No. _____ [Total No. of Pages : 2

6003ELE15-A

B.Sc. DEGREE EXAMINATIONS, JULY/AUGUST - 2022

(Examination at the end of Sixth Semester)

Microcontrollers and Applications

(Regulation 2015-16)

Time : 3 Hours Maximum Marks : 75

SECTION - A

Answer any FIVE of the following: (5×5=25)

1. Write and explain counters and Timers.
2. Write a short note on External Memory.
3. Explain the operation of increment and decrement instructions of Arithmetic operations.
4. Write a short note on simulator and Debugger.
5. What is embedded system? Explain its applications.
6. Write an ALP for Addition of two 8- bit numbers.
7. Explain the interfacing of seven segment display.
8. Explain keyboard interfacing briefly.

SECTION - B

Answer ONE of the following from each unit. (5×10=50)

UNIT - I

9. What are the differences between microprocessor and microcontroller.

(OR)

10. Draw the block diagram of 8051. Explain each block.

UNIT - II

11. Explain the classification of 8051 Instructions set. Give an example of each.

(OR)

12. Write an assembly language program for the Division of two - 8 bit numbers.

UNIT - III

13. Explain the timer programming in Mode I.

(OR)

14. Explain Jump and call program for bit jumps.

UNIT - IV

15. Draw the interfacing diagram of stepper motor and explain.

(OR)

16. Describe the interfacing of DAC with 8051 Microcontroller.

UNIT - V

17. Explain about 180FXX series in detail.

(OR)

18. Explain about 160 CXX-PIC controllers.

Roll No. _____ [Total No. of Pages : 2

6003ELE20-A1

B.Sc. (CBCS) DEGREE EXAMINATIONS, JUNE/JULY - 2023

(Examination at the end of Sixth Semester)

Part : Electronics

INDUSTRIAL ELECTRONICS

(Regulation 2015-16)

Time : 3 Hours **Maximum Marks : 75**

SECTION - A

విభాగం - ఎ

Write any **FIVE** of the following questions: **(5×5=25)**

1. Explain transistor series voltage regulator.
ట్రాన్సిస్టర్ సిరీస్ వోల్టేజ్ రెగ్యులేటర్‌ను వివరించండి.

2. Explain about L-section filter.
L సెక్షన్ ఫిల్టర్ గురించి వివరించండి.

3. Draw the block diagram of regulated power supply.
నియంత్రిత విద్యుత్ సరఫరా యొక్క బ్లాక్ రేఖా చిత్రాన్ని గీయండి.

4. Write the applications of voltage multiplier.
వోల్టేజ్ గుణకం యొక్క అనువర్తనాలను వ్రాయండి.

5. Explain the working of SCR as parallel inverter circuit.
SCR యొక్క పనిని సమాంతర ఇన్వర్టర్ సర్క్యూట్‌గా వివరించండి.

6. Write the mathematical analysis for resistive load.
రెసిస్టివ్ లోడ్ కోసం గణితం విశ్లేషణ వ్రాయండి.

7. Explain the heating effects of resistance.
ప్రతిఘటన యొక్క తాపన ప్రభావాన్ని వివరించండి.

8. Explain briefly voltage tripler circuit diagram.
వోల్టేజ్ ట్రిపుల్ సర్క్యూట్ రేఖా చిత్రాన్ని క్లుప్తంగా వివరించండి.

SECTION - B
విభాగం - బి

Write Answer for the following **Five** questions. **(5×10=50)**

9. a) Explain the construction and working of full wave rectifier with circuit diagram. Calculate the efficiency and ripple factor.
సర్క్యూట్ రేఖా చిత్రంతో పూర్తి వేవ్ రెక్టిఫైయిర్ నిర్మాణం మరియు పనిని వివరించండి. సామర్థ్యం మరియు అలల కారకాన్ని లెక్కించండి.

(OR/లేదా)

b) Explain with circuit diagram transistor shunt voltage regulator. Explain three terminal regulators.(78XX and 79XX).
సర్క్యూట్ రేఖా చిత్రంతో వివరించండి ట్రాన్సిస్టర్ షంట్ వోల్టేజ్ రెగ్యులేటర్. మూడు టర్మినల్ రెగ్యులేటర్లను వివరించండి. (78XX మరియు 79XX).

10. a) Explain the principle and working of switch mode power supply (SMPS).
స్విచ్ మోడ్ విద్యుత్ సరఫరా యొక్క సూత్రం మరియు పనిని వివరించండి.

(OR/లేదా)

b) Explain the circuit and working of simple regulated transistorized power supply.
సాధారణ నియంత్రిత ట్రాన్సిస్టరైజ్డ్ విద్యుత్ సరఫరా యొక్క సర్క్యూట్ మరియు పనిని వివరించండి.

11. a) Explain with circuit diagram the construction and working of half wave voltage doubler.
సగం వేవ్ వోల్టేజ్ రెట్టింపు నిర్మాణం మరియు పనిని సర్క్యూట్ రేఖా చిత్రంతో వివరించండి.

(OR/లేదా)

b) Explain with circuit diagram the construction and working of full wave voltage doubler.
పూర్తి వేవ్ వోల్టేజ్ రెట్టింపు నిర్మాణం మరియు పనిని సర్క్యూట్ రేఖా చిత్రంతో వివరించండి.

12. a) Explain the construction and working of SCR half wave rectifier circuit with wave forms.
తరంగ రూపాలతో SCR హాఫ్ వేవ్ రెక్టిఫెయర్ సర్క్యూట్ నిర్మాణం మరియు పనిని వివరించండి.

(OR/లేదా)

b) Explain construction and working of SCR full wave rectifier along with waveforms.
SCR పూర్తి నిర్మాణం మరియు పనిని వివరించండి వేవ్ రూపాలతో వేవ్ రెక్టిఫైయర్ సర్క్యూట్.

13. a) Explain the principle and operation of inductance heating effects in detail.
ఇండక్టెన్స్ హీటింగ్ ఎఫెక్ట్ యొక్క సూత్రం మరియు ఆపరేషన్ గురించి వివరంగా వివరించండి.

(OR/లేదా)

b) Explain in detail about the heating effects of dielectric heating with principle and operation.
ప్రధాన మరియు ఆపరేషన్తో విద్యుద్వాహక తాపన యొక్క తాపన ప్రభావాల గురించి వివరంగా వివరించండి.

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6003ELE15-A

B.Sc. DEGREE (CBCS) EXAMINATIONS, AUGUST - 2021

(Examination at the end of Sixth Semester)

MICROCONTROLLERS AND APPLICATIONS

(Regulation : 2015-16)

Time : 3 Hours **Maximum Marks : 75**

SECTION - A

Answer any **FIVE** of the following. **(5×5=25)**

1. Write about evolution of microcontrollers?

2. List and explain 8051 16-bit registers?

3. Explain CALL instruction and stack?

4. Write an ALP program for division of two 8-bit numbers?

5. Write a short note on Subroutine?

6. Explain about Time delay generation and calculation?

7. Draw the pin diagram of DAC.

8. Explain briefly about 160CXX PIC controllers?

SECTION - B

Answer any **ONE** of the following from each Unit. **(5×10=50)**

UNIT - I

9. Explain the difference between microprocessor and microcontroller.

(OR)

10. Draw the pin diagram of 8051 and explain each pin in details.

UNIT - II

11. Define instruction and explain instruction set in detail?

(OR)

12. Write an ALP

    i) addition ii) multiplication of two 8 bit nos?

UNIT - III

13. Explain Jump and CALL program for bit jumps?

(OR)

14. Explain the timer programming in Mode 1 ?

UNIT - IV

15. Describe the interfacing of ADC with 8051 Microcontroller?

(OR)

16. Describe the interfacing of stepper motor and explain?

UNIT - V

17. Explain about Embedded systems?

(OR)

18. Explain about 180FXX series in detail?
