

S.V.K.P &Dr.K.S.RAJU ARTS & SCIENCE COLLEGE(AUTONOMOUS),PENUGONDA

Recognized by UGC as “College With Potential for Excellence”

Accredited by NAAC with “A” Grade

(Affiliated to ADIKAVI NANNAYA UNIVERSITY–Recognised by Govt. Of Andhra Pradesh)

FIRST SEMESTER END EXAMINATIONS

I B.Sc. –ELECTRONICS –CIRCUIT THEORY AND ELECTRONIC DEVICES

w.e.f 2021-22 Admitted Batch

MODEL PAPER

ELECTRONICS	CODE: 20ELE1	2020-21	B.Sc.
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Time : 3 hours

Max.Marks:75.

Answer any five questions from Section A& Section B choosing atleast two from each section. Each question carries 10 marks.

5x10=50 marks

Part – 1

Section-A

1. Derive the expressions for Average value and RMS value of AC current.
2. Explain the V-I phase relation for the circuit containing R, L and C.
3. State and prove maximum power transfer theorem?
4. State and prove Thevenin's theorem.
5. Deduce expressions for resonant frequency and Q-factor for a Series resonant circuit.

Section-B

6. Obtain the expressions for resonant frequency and Q-factor for a Parallel resonant circuit.
7. Draw and explain input and output characteristics of transistor in CE configuration.
8. Explain the working and characteristics of FET.
9. Explain the working of Full wave Bridge rectifier and find its ripple factor.
10. Explain the construction and working of LED. Mention its applications.

Part – 2

SECTION- C

Answer any five questions.

5x5=25 marks

1. A Sinusoidal voltage $e = 200 \sin 314 t$ is applied to a resistor of 10Ω . Find (i) Frequency (ii) Time period (iii) RMS value of voltage.
2. What do you know about Loop current method to analyse a circuit.
3. State and prove Superposition theorem.
4. Describe the working of RC circuit as Integrator.
5. A series LCR circuit has $R = 50\Omega$, $L = 40\text{mH}$, $C = 1\mu\text{F}$. Calculate (i) Resonant frequency (ii) Q-factor and (iii) bandwidth..
6. What are the advantages of FET over BJT?
7. Explain the working of L-section filter.
8. Explain the working of a Photo diode.

ELECTRONICS	CODE: 20ELE2	2020-21	B.Sc.
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Time : 3hours

Max.Marks:75.

Answer any five questions from Section A& Section B choosing atleast two from each section. Each question carries 10 marks.

5x10=50 marks

Part – 1

Section-A

1. Explain in detail about BCD Code
- 2.Explain the conversion of Decimal to Binary and binary to decimal with an example
- 3.Why NAND and NOR gates are universal gates? Realize AND, OR and NOT gates using NAND and NOR gates
- 4.Explain in detail about 3 variable karnaugh map method to simplify logic Expression.
5. Explain the operation of a full addercircuitwithits truth table.
- 6.Explain the working of TTL NAND Gate circuit with its truth table.
- 7.Describe the working of Master slave JK flip-flop with its truth table.
- 8.Draw the circuit diagram of decade counter and explain it's operation. Draw its timing diagram.
9. Explain the operation of ROM
- 10.Explain the operation of Dynamic RAM

Part – 2

SECTION- C

Answer any five questions.

5x5=25 marks

1. Explain Excess-3 code with an example.
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 Demorgan'slaw's.
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.

ELECTRONICS	CODE: 20ELE3	2020-21	B.Sc.
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Time : 3hours

Max.Marks:75.

Answer any five questions from Section A& Section B choosing atleast two from each section. Each question carries 10 marks. **5x10=50 marks**

Part – 1

Section-A

- 1.Draw the block diagram of OP-AMP and explain the function of each block
- 2.Explain the operation of Integrator and differentiator using Op-Amp .
3. Using OP-AMP explain the working of Square wave generator circuit.
4. Draw and explain IC-555 functional block diagram.
5. Explain Amplitude modulation and obtain an expression for an AM wave.

Section-B

- 6.Explain the need for demodulation. Explain the operation of diode detector with a neat circuit diagram.
7. Explain the working of FM modulator with a neat circuit diagram.
- 8.Explain the operation of ratio detector for FM waves with a neat circuit diagram.
- 9 .Explain the working of Supper heterodyne receiver with the help of block diagram.
- 10.Draw the block diagram of FM Receiver and explain the function of each block.

Part – 2

SECTION- C

Answer any five questions.

5x5=25 marks

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 and also express CMRR in dB.
5. Explain what is the need for modulation
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 5KHZ producing 50% modulation. Calculate the amplitude and frequency of lower and upper side frequencies.

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FOURTH SEMESTER END EXAMINATIONS
IIB.Sc. –ELECTRONICS –MICROPROCESSOR SYSTEM(4A)
w.e.f 2020-21 Admitted Batch
MODEL PAPER

ELECTRONICS	CODE: 20ELE4A	2020-21	B.Sc.
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Time : 3hours

Max.Marks:75.

Answer any five questions from Section A& Section B choosing atleast two from each section. Each question carries 10 marks. **5x10=50 marks**

Part – 1
Section-A

1. Draw the pin diagram of 8085 microprocessor and explain.
2. Explain the various Addressing Modes of 8085 Microprocessor with examples.
3. Write an ALP to find the Largest number in a given array of 8-bit Numbers in 8085
4. Write an ALP to arrange given array of 8-bit numbers in Ascending order of 8085
5. Draw the Architecture of 8086 Microprocessors and explain. .

Section-B

6. Explain the Pin Description of 8086 with neat diagram.
7. Explain in detail serial communication interfacing of 8086 Microprocessor
8. Explain DMA(8257) Controller with a neat diagram.
9. Explain the ARM architecture in detail.
10. Explain ARM instruction set.

Part – 2
SECTION- C

Answer any five questions.

5x5=25 marks

1. Explain 8085 microprocessor register organization
2. Explain logical instructions of 8085 microprocessor.
3. Write an ALP to find the the addition of Two 8-bit Numbers
4. Write an ALP to find the Multiplication of Two 8-bit Numbers
5. Describe briefly about minimum mode configuration of 8086 microprocessor
6. Write a short note on interrupt priority of 8086 microprocessor.

7. Explain about parallel communication interfacing of 8086 Microprocessor.
8. Explain the features of ARM Processor.

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FOURTH SEMESTER END EXAMINATIONS

IIB.Sc. –ELECTRONICS –MICROCONTROLLERS AND INTERFACING(4B)

w.e.f 2020-21 Admitted Batch

MODEL PAPER

ELECTRONICS	CODE: 20ELE4B	2020-21	B.Sc.
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Time : 3hours

Max.Marks:75.

Answer any five questions from Section A& Section B choosing atleast two from each section. Each question carries 10 marks.

5x10=50 marks

Part – 1

Section-A

1. Explain the difference between microprocessor and microcontroller.
2. Draw the pin diagram of 8051 and explain each pin in detail.
3. Explain the architecture of 8051 and explain each pin in detail..
4. Explain about memory organization of 8051..
5. Explain about different types of Addressing modes.

Section-B

6. Explain about (i)single bit instruction (ii)loop instruction(iii)Arithmetic instruction with one example each.
7. Write a ALP program on largest number in an array.
8. Write an ALP (i) 8-bit addition (ii) multiplication of 8-bit.
9. Briefly explain the architecture of 8255(PPI).
- 10.Explain about interfacing of stepper motor to 8051 microcontroller.

Part – 2

SECTION- C

Answer any five questions.

5x5=25 marks

11. Write about evolution of microcontrollers
12. List and explain some 8051 16-bit registers.
13. Explain CALL instruction and stack.
14. Write an ALP program for division of two 8-bit numbers..
15. How the information is displayed on LCD?

16. Write short note on microcontroller testing tools.

17. Explain about stack pointer.

18. Draw the pin diagram for DAC.

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FIFTH SEMESTER END EXAMINATIONS

III B.Sc. – ELECTRONICS – INDUSTRIAL ELECTRONICS

(w.e.f 2020-21 Admitted

Batch) Paper Code:

20ELE5A1 MODEL PAPER

Time : 3 hours

Max.Marks:75.

Answer any five questions from Section A & Section B choosing atleast two from each section. Each question carries 10 marks.

5x10=50

marks

Part – 1

Section-A

1. Draw the circuit diagram of Half wave rectifier and derive an expression for Efficiency, Ripple Factor, Voltage Regulation.
2. Draw the circuit diagrams of Transistor Series Voltage Regulator and Transistor Shunt Voltage Regulators. Explain its operations.
3. Draw the Block Diagram of Regulated Power Supply and explain the operation of each block.
4. Draw the Block Diagram of Switch Mode Power Supply and explain the operation of each block.
5. Draw the circuit diagram of Half wave voltage doubler circuit and explain its working.

Section-B

6. Draw the circuit diagram of Voltage Tripler circuit and explain its working.
7. Draw the circuit diagram of SCR Half wave rectifier circuit, explain its working with the help of waveforms. Show Mathematical analysis for resistive load.
8. Draw the circuit diagram of SCR Full wave rectifier circuit, explain its working with the help of waveforms. Show Mathematical analysis for resistive load.
9. What is Dielectric heating explain factors on which the dielectric loss in a dielectric material depends.
10. What is the difference between Induction heating and Dielectric heating

Part – 2

SECTION- C

Answer any five questions.

Each question carries 5 marks.

5x5=25 marks

11. Distinguish between Half Wave and Full Wave Rectifier.
12. Draw the circuit diagram of L-Section Filter and explain its operation.
13. Distinguish between Linear Power Supply and SMPS.
14. Draw the block diagram of Regulated Transistorized Power Supply.
15. What are different applications of Voltage Multipliers?
16. Distinguish between Half wave voltage doubler and Full wave voltage doubler.

17. Draw the circuit diagram of how SCR works as Parallel Inverter and explain its operation.
18. Draw the circuit diagram of how SCR works as Series Inverter and explain its operation.

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FIFTH SEMESTER END EXAMINATIONS

III B.Sc. – ELECTRONICS – Electronic Instrumentation

(w.e.f 2020-21 Admitted

Batch) Paper Code:

20ELE5A2 MODEL PAPER

Time : 3 hours

Max.Marks:75.

Answer any five questions from Section A & Section B choosing atleast two from each section. Each question carries 10 marks.
5x10=50 marks

Part – 1

Section-A

1. Draw the Block diagram of Analog Multimeter and explain its Construction and Working.
2. Draw the Block diagram of Digital Multimeter and explain its Construction and Working.
3. Draw the Block Diagram of Cathode Ray Oscilloscope and explain the function of each block.
4. Draw the Block Diagram of Cathode Ray Tube and explain the operation of each block.
5. Draw the circuit diagram of Linear Variable Differentiable Transformer LVDT and explain its operation.

Section-B

6. Draw the circuit diagram of Piezoelectric Transducer and explain its working.
7. Explain the Construction and Operation of Seven Segment Displays with neat Diagram.
8. Explain the Construction and Operation of LED Displays with neat diagram.
9. Draw the Block diagram of Stethoscope and explain its Operating Principle.
10. Explain Basic Operating Principles and Uses of Clinical Thermometer.

Part – 2

SECTION- C

Answer any five questions.

Each question carries 5 marks.

5x5=25 marks

11. What types of Voltmeters are used for DC Measurements?
12. What is difference between AC Voltmeter and DC Voltmeter?
13. What are the Uses of CRO?
14. What are different types of Oscilloscopes?
15. What are main types of Transducers?
16. Explain about Fiber Optic Sensors.
17. What are different Applications of LCD modules?
18. How many types of SSDs are available in Seven Segment Display?

