

B.Sc- ELECTRONICS-SYLLABUS

SEMESTER: V

PAPER V - MICROPROCESSORS (INTEL 8085) (60 OURS)

Work load:60 hrs per semester

4 hrs/week

UNIT- I (12 hrs)

ARCHITECTURE OF 8085 MICROPROCESSOR

Functional block diagram of Intel 8085-Register structure- multiplexing & Demultiplexing of address / data bus - Control Signal Generation and status signals - 8085 pin-out diagram & functions - Interrupts - Priority Concept

INSTRUCTION SET OF 8085 -Instruction set classification - addressing modes

UNIT - II (12 hrs)

MEMORY-Instruction cycle - machine cycle - T-state -Timing diagrams for Opcode Fetch Cycle Memory Read, Memory Write, I/O Read, I/O Write, - Functional explanation for RAM, ROM, EPROM

UNIT- III (12 hrs)

PROGRAMMING 8085- addition & subtraction(16-bit), multiplication, division, largest, smallest(all 8-bit data), Binary to BCD, BCD to Binary(all 8-bit data) - Stack & Subroutines Concept - Debugging program.

UNIT- IV (12 hrs)

INTERFACING MEMORY - 2K X 8 ROM, RAM to 8085, Interfacing an I/O port in Memory Mapped I/O and I/O Mapped I/O - Difference between I/O mapped and Memory Mapped I/O.

UNIT - V (12 hrs)

MICROPROCESSOR APPLICATIONS - Programmable peripheral device (8255)-Pin functions, Different Modes & Block Diagram - Keyboard and Display Interface 8279 (Architecture) - Simple temperature controller- stepper motor control interface.

TEXTBOOKS

- 1.Ramesh S. Gaonakar, Microprocessor Architecture, Programming and Application with the8085-PenramLnternational Publishing, Mumbai.
2. Ram, Fundamentals of microprocessors and microcomputers - Dhanpat Rai Publications, New Delhi

3. Microprocessors & Microcontrollers by N .Senthilkumar, M. Saravanan& S. Jeevananthan, 1st edition, Oxford press(Helpful for interfacing applications)
4. Microprocessors & Microcontrollers by B.P.Singh, Galgotia publications Pvt.Ltd.

REFERENCE BOOKS

- 1.Mathur A.P., Introduction to Microprocessors. (3rd edn., Tata McGraw, New Delhi,
- 2.Leventhal L.A., Microprocessor Organisation and Architecture, Prentice Hall India.
- 3.Microprocessor lab premier by K.A.Krishnamurthy

ELECTRONICS LAB -5 (MICROPROCESSORS LAB)

Work load: 30 hrs per semester

2 hrs/week

(Any six experiments should be done)

Programs using Intel 8085

1. Addition & Subtraction (8-bit)
2. Addition & Subtraction (16-bit)
- 3 Multiplication & Division (8 - bit)
- 4 Largest & Smallest number in the given array.
- 5 Ascending & Descending order.
- 6 Binary to BCD and BCD to binary
- 7 Waveform generation using DAC interface.
- 8 Stepper motor interface.

LAB MANUAL

1. Zbar, Malvino and Miller, Basic Electronics, A Text Lab Manual, Tata McGraw Hill.
2. Sugaraj Samuel R., Horsley Solomon, B.E.S. Practicals.
3. Vijayendran V., Fundamentals ofmicroprocessor-8085, S.Viswanathan publishers Chennai.

B.Sc- ELECTRONICS-SYLLABUS

SEMESTER: V

PAPER VI - CONSUMER ELECTRONICS (60 HOURS)

(w. e .f. 2015-16 ab)

Work load: 60 hrs per semester

4 hrs/week

UNIT-I (12 hrs)

MICROWAVE OVENS - Microwaves (Range used in Microwave Ovens) – Microwave oven block diagram -LCD timer with alarm - Single-Chip Controllers - Types of Microwave oven - Wiring and Safety instructions -Care and Cleaning.

UNIT-II (12 hrs)

WASHING MACHINES - Electronic controller for washing machines - Washing machine hardware and software- Types of washing machines - Fuzzy logic washing machines Features of washing machines.

UNIT-III (12 hrs)

AIR CONDITIONERS AND REFRIGERATORS - Air Conditioning - Components of air conditioning systems -All water air conditioning systems - All air conditioning systems - Unitary and central air conditioning systems -Split air conditioners.

UNIT-IV (12 hrs)

HOME/OFFICE DIGITAL DEVICES - Facsimile machine - Xerographic copier - Calculators - Structure of a calculator - Internal Organization of a calculator - Digital clocks - Block diagram of a digital clock.

UNIT-V (12 hrs)

DIGITAL ACCESS DEVICES - Digital computer -Internet access - Online ticket reservation - Functions and networks - Barcode Scanner and decoder - Electronic Fund Transfer - Automated Teller Machines (ATMs) - Set-Top boxes - Digital cable TV - Video on demand.

TEXT BOOKS

1. S.P. Bali, Consumer Electronics - Pearson Education, New Delhi, 2005.
2. R. G. Gupta Audio and Video systems Tata McGraw Hill (2004)

ELECTRONICS LAB -6(B)
CONSUMER ELECTRONICS LAB

Work load: 30 hrs per semester
hrs/week

2

(At least two Activities should be done)

- I. Study of PA systems for various situations - Public gathering, closed theatre /Auditorium, Conference room, Prepare Bill of Material (Costing)
- 2.Installation of Audio /Video systems - site preparation, electrical requirements, cables and connectors
- 3.Market Survey of Products (at least one from each module)
- 4.Identification of block and tracing the system. Assembly and Disassembly of system using Toolkit
- 5.Assembly and Disassembly of system& printer

NOTE: One activity as directed in practical course is equivalent to 4 experiments

Model paper

ADIKAVI NANNAYA UNIVERSITY, RAJAHMUNDRY
CBCS/Semester System (w.e.f. 2015-16 Admitted Batch)
B.Sc., (THREE YEAR EXAMINATIONS)
SEMESTER-V – **ELECTRONICS**
Paper-V: MICROPROCESSORS (INTEL 8085)

Time: 3 Hrs
75

Max. Marks:

PART – A

Answer any **FIVE** questions.
Marks

5 X 5 = 25

1. Explain about flags of 8085.
2. Write data transfer group instructions.
3. Explain instruction cycle of 8085.
4. Explain about debugging a program.
5. Write an assembly language program to add two 16-bit numbers.
6. What are the differences between I/O mapped and memory mapped I/O?
7. How 8085 controls temperature?
8. Briefly explain EPROM.

PART – B

Answer **ALL** questions.
Marks

5 X 10 = 50

9. Draw and explain the pin diagram of 8085.
or
Explain various addressing modes of 8085.
10. Explain the timing diagram for op-code fetch cycle of memory read and memory write.
or
Give the functional explanation of RAM and ROM.
11. Write a program to find the largest number among given numbers using 8085.
or
Write a program to convert binary numbers to BCD numbers using 8085.
12. Explain the interfacing of 2K X 8 ROM with 8085.
or
How an I/O port is interfaced in memory mapped I/O ?
13. Explain the block diagram and modes of PPI 8255?
or
How a stepper motor is interfaced with 8085 microprocessor?

Model paper
ADIKAVI NANNAYA UNIVERSITY, RAJAHMUNDRY
CBCS/Semester System (w.e.f. 2015-16 Admitted Batch)
B.Sc., (THREE YEAR EXAMINATIONS)
SEMESTER-V – **ELECTRONICS**
Paper-VI – CONSUMER ELECTRONICS

Time: 3 Hrs
75

Max. Marks:

PART – A

Answer any **FIVE** questions.
Marks

5 X 5 = 25

1. Explain the properties and applications of micro waves.
2. What are the wiring and safety instructions taken in microwave oven ?
3. What are the features of washing machines?
4. What are the components of air conditioning systems?
5. Explain the structure of a calculator.
6. Briefly explain facsimile machine.
7. Explain about set-top boxes.
8. Write about video on demand.

PART – B

Answer **ALL** questions.
Marks

5 X 10 = 50

9. Draw the block diagram of microwave oven and explain its working.
or
Explain the function of LCD timer with alarm in microwave oven.
10. Explain the block diagram of washing machine.
or
Explain Fuzzy logic washing machines.
11. Explain central air conditioning systems.
or
Explain the working of split air conditioner.
12. Explain the working of xerographic copier.
or
Draw the block diagram of a digital clock and explain its working.
13. Explain the working of a digital computer.
Or
Explain the working of automated teller machine (ATM) ?