D 43493

Name.....

Reg. No.....

# FOURTH SEMESTER B.Sc. DEGREE EXAMINATION, MAY 2018

(SSE)

Electronics and Computer Science

E 402 T—COMPUTER TECHNOLOGY

(1999/2000 Admissions)

Time : Three Hours Maximum : 75 Marks

*Answer any* **five** *questions.*
*All questions carry equal marks.*

1. (a) Explain the functional block diagram of a computer and explain each unit. (10 marks)

   (b) How would you differentiate between super computers and main frame computers ? (5 marks)

2. (a) Explain the various addressing modes with examples. (10 marks)

   (b) Explain the concept of branch instruction. (5 marks)

3. (a) Explain how the main memory is accessed to store or retrieve information. (10 marks)

   (b) What are the basic operations of the main memory to execute an instruction ? (5 marks)

4. Explain with logic circuits, the design of fast adders in computers. (15 marks)

5. (a) Explain how multiplication of positive numbers is done in computers. (10 marks)

   (b) What are the limitations of the n-bit binary adder cum substractor logic network ? (5 marks)

6. (a) What are static memories ? Explain different types of SRAMs. (8 marks)

   (b) Compare SRAMs and DRAMs. (7 marks)

7. (a) Explain general motherboard architecture. (10 marks)

   (b) Explain the various buses available with their speeds in a motherboard. (5 marks)

8. (a) Explain the concept of optical storage devices. (8 marks)

   (b) Explain how data is organised in a HDD. (7 marks)

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# FOURTH SEMESTER B.Sc. DEGREE EXAMINATION, MAY 2018

(SSE)

Electronics and Computer Science

E 404 T—PROGRAMMING LANGUAGE C

(1999/2000 Admissions)

Time : Three Hours Maximum : 75 Marks

*Answer any* **five** *questions.*
*Each question carries* 15 *marks.*

1. (a) What are flow charts ? Why are they important ? (5 marks)

   (b) Draw a flow chart to find the smallest number from a set of N data. (10 marks)

2. (a) Why do we need to use comment statements in programs ? (6 marks)

   (b) List and explain the arithmetic operators in C. What are the relative priorities of arithmetic operators ? (9 marks)

3. (a) Write a C program to print the multiples of 3 from 1 to 100. (8 marks)

   (b) Explain looping statements with suitable examples. (7 marks)

4. (a) Give the structure of switch statement with example. (7 marks)

   (b) Write a C program to get the Fibonacci series 1, 1, 2, 3, ..... for $n$ terms. (8 marks)

5. (a) Explain how multi - dimensional arrays can be initialised in C. (6 marks)

   (b) Write a C program to add two matrices. (9 marks)

6. (a) Distinguish between global variables and local variables. (7 marks)

   (b) Enumerate the rules that apply to a function call. (8 marks)

7. (a) Describe typical applications of pointer in developing C programs. (8 marks)

   (b) What are the arithmetic operators that are permitted on pointers ? (7 marks)

8. Write short notes on any *three* :

   (a) Logical operators. (b) If statements.

   (c) Recursive function. (d) Escape characters.

   (e) Goto statement.

(3 × 5 = 15 marks)

C 3529 (Pages : 2) Name.....

Reg. No.....

# FOURTH SEMESTER (CBCSS—UG) DEGREE EXAMINATION APRIL 2021

Electronics

ELE 4C 05—COMMUNICATION ELECTRONICS

Time : Two Hours Maximum : 60 Marks

## Section A

*Answer at least* **eight** *questions.*
*Each question carries* 3 *marks.*
*All questions can be attended.*
*Overall Ceiling* 24.

1. How many characteristics of a sine wave are variable for modulation ?
2. What is modulation index of an AM wave ?
3. How does the bandwidth of an AM signal relate with information signal ?
4. Define frequency modulation.
5. What is pre-emphasis ?
6. List any *two* comparisons of frequency and phase modulation.
7. State Sampling theorem.
8. Distinguish between pulse modulation and analog modulation.
9. What is quantization ?
10. Define Entropy.
11. Distinguish between bit rate and baud rate.
12. How does AM differ from ASK ?

(8 × 3 = 24 marks)

## Section B

*Answer at least* **five** *questions.*
*Each question carries* 5 *marks.*
*All questions can be attended.*
*Overall Ceiling* 25.

13. Explain with a block diagram a communication system.
14. With neat diagrams, explain a method of FM generation.
15. What are the advantages of FM over AM ?
16. Describe the generation of pulse width modulation.
17. Explain pulse code modulation.
18. Explain coherent BPSK generation with block diagram.
19. Explain coherent detection of binary FSK.

(5 × 5 = 25 marks)

## Section C

*Answer any* **one** *question.*
*Each question carries* 11 *marks.*

20. Explain in detail FDM and TDM.
21. Explain the generation and demodulation of QPSK signals.

(1 × 11 = 11 marks)

C 3528 (Pages : 2) Name.....

Reg. No.....

# FOURTH SEMESTER (CBCSS—UG) DEGREE EXAMINATION
# APRIL 2021

Electronics

ELE 4B 06—ANALOG INTEGRATED CIRCUITS

Time : Two Hours Maximum : 60 Marks

## Section A

*Answer at least* **eight** *questions.*
*Each question carries* 3 *marks.*
*All questions can be attended.*
*Overall Ceiling* 24.

1. Define : a) Input offset voltage ; and b) Gain-bandwidth product
2. Draw the circuit of a non-inverting summing amplifier.
3. What is a voltage to current converter ? Mention its applications.
4. What do you mean by order of a filter ?
5. What is a notch filter and what are its applications ?
6. What are the applications of an all pass filter ?
7. What is a Schmitt trigger ? What are its applications ?
8. Draw the circuit of a half-wave rectifier.
9. What are the applications of astable multivibrator ?
10. How are LAPB, LAPD and LAPM different from each other ?
11. What is Collision ?
12. What are the advantages of double heterostructure ?

(8 × 3 = 24 marks)

## Section B

*Answer at least* **five** *questions.*
*Each question carries* 5 *marks.*
*All questions can be attended.*
*Overall Ceiling* 25.

13. Draw and explain the circuit of a current to voltage convertor.

14. Explain how an integrator circuit is designed using IC 741.

15. Explain the characteristics and features of various active filters.

16. Explain the circuit of an astable multivibrator.

17. Explain the circuit and operation of positive and negative comparators. Also explain the working and circuit of a zero crossing detector.

18. Draw the internal architecture of 555 Timer IC.

19. Explain the features of fixed IC voltage regulators.

(5 × 5 = 25 marks)

## Section C

*Answer any* **one** *question.*
*The question carries* 11 *marks.*

20. Explain how an instrumentation amplifier is constructed. Explain the applications of instrumentation amplifier.

21. Explain the working of PLL. Explain how a PLL can be used as a frequency multiplier.

(1 × 11 = 11 marks)

C 2182 (Pages : 3) Name.....

Reg. No.....

# FOURTH SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION
# APRIL 2021

Electronics

ELE 4B 05—MICROPROCESSORS

(2014 Admissions)

Time : Three Hours Maximum : 80 Marks

## Part A

*Answer* **all** *questions.*
*Each question carries* 1 *mark.*

1. The program counter of 8085 microprocessor is a 16-bit register because ————.
2. The flags in 8085 are designated as ————.
3. The speed of the microprocessor depends on its ————.
4. In 8085 which addressing mode is called inherent addressing ?
5. How many T- states are required for the execution of OUT 80H instruction ?
6. The instruction to rotate the content of the accumulator one bit along with carry is ————
7. Which stack is used in 8085 microprocessors ?

   a) FIFO. b) FILO.

   c) LIFO. d) LILO.
8. The block of 8237 that decodes the various commands given to the 8237 by the CPU is ————.
9. Port C of 8255 can function independently as ————.
10. In 8279, the sensor RAM acts as 8-byte first-in-first-out RAM in ———— mode.

(10 × 1 = 10 marks)

## Part B

*Answer any* **five** *questions.*
*Each question carries* 2 *marks.*

11. Define instruction cycle, machine cycle and T states.
12. What are the control and status signals of 8085 MPU ?
13. What are the functions of the accumulator ?
14. Mention the purpose of SID and SOD pins.
15. Explain STA, LDA and DAA instructions.
16. What is ADC and DAC ?
17. What are the different types of write operations used in 8253 ?

(5 × 2 = 10 marks)

## Part C

*Answer any* **six** *questions.*
*Each question carries 5 marks.*

18 List out the five categories of 8085 instructions. Give examples of the instruction for each group
19. What are Interrupts ? Explain the different priority interrupts of 8085.
20. What are the steps involved when a CALL instruction is executed by 8085 ?
21. What are the basic modes of operation of 8255 ?
22. Distinguish between memory mapped I/O and I/o mapped I/O.
23. Explain the major components of the keyboard/display interface.
24. Write an assembly language program to find the sum of two numbers stored at memory locations 4100H and 4101H and store the result at 4200H and carry at 4201H
25. What are Subroutines ? Explain how delay programs are made ?

(6 × 5 = 30 marks)

## Part D

*Answer any two questions*

*Each question carries 15 marks*

a) Describe the functional pin diagram of 8085.

b) With neat block diagram explain PPI.

c) With neat block diagram explain the functions of 8253.

d) Write the program to count from 0 to 9 with a one second delay between each count. At the count 9 the counter should reset itself to 0 and repeat the sequence continuously. Use register pair HL and display each count at one of the output ports. Assume clock frequency of the microprocessor as 1MHz.

(2 × 15 = 30 marks)