

KATHMANDU UNIVERSITY
End Semester Examination [C]
June, 2018

Marks Scored:

Level : B. E.

Year : III

Exam Roll No. :

Time: 30 mins.

Registration No.:

Course : EEEG 314

Semester : I

F. M. : 20

Date :

JUN 19 2018

SECTION "A"

[20 Q. × 1 = 20 marks]

Encircle the most suitable answer to the following questions:

1. _____ is the basic steps of execution of an instruction.
a) Fetch → Decode → Execute b) Decode → Fetch → Execute
c) Fetch → Execute → Decode d) Execute → Fetch → Decode
2. Start and Stop bits in an asynchronous serial transfer are introduced at the start and end of _____.
a) every block of characters b) every character
c) every bit d) every byte
3. _____ Interrupt is not a vectored interrupt.
a) INTR b) TRAP c) RST 7.5 d) RST 3
4. The CPU sends out a _____ signal to indicate that valid data is available on data bus.
a) read b) write c) ALE d) INTR
5. NMI is a _____ interrupt.
a) Type 0 b) Type 1 c) Type 2 d) Type 3
6. Output of the assembler in machine codes is referred to as _____.
a) Object Program b) Source Program c) Macro instruction d) Symbolic Addressing
7. 8085 has _____ programmable registers.
a) 7 b) 8 c) 9 d) 10
8. Which of the following logic instructions can be used to complement a specific bit using a mask.
a) AND b) OR c) XOR d) NOT
9. Data storage in stack is designed in _____ method.
a) FIFO b) LILO c) FILO d) LIFO
10. Which among these is a 4-bit microprocessor.
a) 8085 b) 8086 c) 8088 d) 4004

11. Which among these memory types cannot be re-written after once.
a) PROM b) EPROM c) EEPROM d) EAROM
12. _____ cycle is required to fetch and execute an instruction in a 8085 microprocessor.
a) clock b) machine c) memory d) instruction
13. _____ does not belong to 8085 flag register.
a) Carry Flag b) Sign Flag c) Zero Flag d) One Flag
14. _____ Instruction sets the carry flag.
a) CY set b) STR c) STC d) Set CY
15. The _____ chip is a latch.
a) 74LS138 b) 74LS373 c) 74LS244 d) 74LS245
16. Mode 2 is a bidirectional mode of operation of the 82C55 for _____.
a) PORT A b) PORT B
c) PORT A and PC4-PC7 d) PORT B and PC0-PC3
17. _____ is a 16 bit register in 8085.
a) Stack pointer b) Accumulator c) Register B d) Flag
18. _____ is an 8085 hardware interrupt.
a) TRAP b) RST 6.5 c) RST 7.5 d) all of the above
19. _____ is the instruction that avoids unnecessary Jumps to terminate the program.
a) HLT b) NOP c) RET d) EI
20. An 8254 is decoded at ports 40h-43h. To which port must the control word be written?
a. 40h b) 41h c) 42h d) 43h

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SECTION "B"

- ✓ *Attempt ANY FIVE questions*
- ✓ *Assume any suitable data if necessary*
- ✓ *Figures in margin indicate full marks for each questions*

1. a. Explain the differences between microprocessor and a microcomputer. Define assembler. [3+1]
b. Define Instruction and how can we classify instruction. [4]
c. Write an ALP to read data and then count number of odd and even numbers. Store them in memory. [3]
2. a. Explain the machine cycle of **OUT 01H** instruction when it is executed? [4]
b. The memory map of a 4K (4096) byte memory chip begins at the location 2000 H. Specify the address of the last location on the chip and the number of pages in the chip. [2]
c. Draw a detailed functional block diagram of 8085 architecture. [5]
3. a. Define Subroutine. Explain the program execution and its data transfer process for CALL instruction. [4]
b. What are the control signals necessary in memory mapped IO? Explain in detail with an example. [3]
c. What are different types of logic operations in 8085? Explain their operation. [4]
4. a. Interface an ADC 0801 converter with 8085 MPU using memory mapped I/O and the interrupt RST 6.5. [4]
b. A 12 bit D/A converter is calibrated over the range 0 to 10V Calculate the outputs if the input is 01H and 82H. [3]
c. Write instructions to clear the CY flag, to load number FFH in register B, and increment (B). If the CY flag is set, display 01 at the output port; otherwise, display the contents of register B. Explain your results? [4]
5. a. Design a square wave generator with a pulse width of 100us by using the 8155 timer. Set up the timer Mode 1 if the clock frequency is 3 MHz. The decode logic interfacing circuit for 8155A programmable device with PORT Address 20H, 21H, 22H, 23H, 24H, 25H for port Control or Status Register, A, B, C, Timer (LSB) and Timer (MSB) respectively. [6]
b. How does 8085 process interrupt? Explain its operation in points. [5]
6. a. What are various methods to check errors in data during transmission? [5]
b. Write a program to convert a binary to BCD. (**Flow chart is mandatory**) [6]

