

KATHMANDU UNIVERSITY
End Semester Examination
February/March, 2018

Marks Scored:

Level: B. Sc.
Year : II

Course : COMP 231
Semester : II

Exam Roll No. : Time: 30 mins.

F. M. : 10

Registration No.:

Date MAR 12 2018

SECTION "A"

[20 Q. × 0.5 =10 marks]

Tick [✓] the most appropriate answer from the alternatives given. All symbols have their usual meanings.

- The block of 8237 that decodes the various commands given to the 8237 by the CPU is
 Timing and control block Program command control block
 Priority block None of the mentioned
- If 'n' denotes number of clock cycles and 'T' denotes period of the clock at which the microprocessor is running, then duration of execution of loop once can be denoted by
 n+T n-T n*T n/T
- The _____ not only provides necessary signals to all the chips on the motherboard, but also goes to the expansion slot
 Expansion board Local bus System bus 74LS244
- What is the number of counters that are present in the programmable timer device 8254 is
 1 2 3 4
- The number of PUSH instructions and POP instructions in a subroutine must be
 PUSH instructions must be greater than POP instructions
 POP instructions must be greater than PUSH instructions
 Both must be equal
 Instructions may be any kind
- Whenever a large memory is required in a microcomputer system, the memory subsystem is generally designed using
 Static RAM Dynamic RAM
 Both static and dynamic RAM ROM
- If 'n' denotes the number of rows that are to be refreshed in a single refresh interval, 'td' denotes the range of time it may take then, refresh time (tr) can be defined as
 n*td td/n n/td tdⁿ
- In the instruction set:
MOV CX, BA03H
WAIT: DEC CX
NOP
JNZ WAIT
RET

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Level : B. Sc.
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Time : 2 hrs. 30 mins.

SECTION "B"

[6Q. × 4 = 24 marks]

Attempt *ANY SIX* questions.

1. What is Microprocessor? Mention Harvard Architecture. How this architecture is different than Von-Neumann Architecture? [1+2+1]
2. Explain addressing modes of 8086 microprocessor with suitable examples.
3. Describe functional block diagram of Intel 8085. What are the Control and status signals in 8085? [3+1]
4. What are the categories of instruction in microprocessor? Explain 8288 bus controller with diagram. [1+3]
5. Define Instruction Queue and Instruction Pointer. Describe pin diagram of 8254 programmable interval timer. [1+3]
6. What is Interrupt types and explain the Interrupt processing sequence in Interrupt controller 8259 A.
7. Define Machine Cycle. Describe memory organization in 8086. [1+3]

SECTION "C"

[2Q. × 8 = 16 marks]

Attempt *ANY TWO* questions.

8. Show comparative study of SAB 8282A and 8283A. Explain operation modes of 8254 with pulse diagram. [3+5]
9. What are the steps of events in 8259A? Explain its functional block diagram. [3+5]
10. Explain DMA transfer modes. Explain 8237 block diagram. What are 8237 registers? [2+4+2]

