**University of Asia Pacific**

**Department of Computer Science & Engineering**

**Mid-Semester Examination Spring 2021**

**Program: B. Sc. Engineering (3rd Year/ 1st Semester)**

Course Title: Microprocessors & Assembly Language. Course No. CSE 311 Credit: 3.00 Time: 1.00 Hour. Full Mark: 60 There are **Three** Questions. **Answer All.**

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| 1. | a. | Define a microprocessor and discuss the importance of a microprocessor. If you design a microprocessor what will be characteristics you will incorporate? | **[10]** |
|  | b. | How can you relate the address and data bus to find out the capacity of memory? Evaluate the capacity of 8086 considering the size of address and data bus in 8086. | **[10]** |
| 2. | a. | Explain the special role of CX and DX registers. Define signed and unsigned numbers with appropriate scale. | **[10]** |
|  | b. | ‘Queue operates in FIFO and Stack operates in LIFO’ - explain their operations according to this phenomena. | **[10]** |
| 3. | a. | Write an assembly program to solve the following expression  X= 2A-B  [Note: Consider and define three word type variables.] | [10] |
|  | b. | Using the different functions of DOS Interrupt routine INT 21h do the followings:   1. Display a prompt message “Welcome to CSE-UAP” 2. Display the first character of your name. 3. Input a character. | [10] |
|  |  | OR |  |
|  | a. | Consider three variables, A, B and C, where A= 08H, B= last two digits of your registration number in Hex and C= 1FH. Then write the active code to do the followings:   1. Add first two variables 2. Swap last two variables 3. Negative last variable | **[10]** |
|  | b. | For the above operations (Q-a) find out the status of six conditional Flags  CF, PF, ZF, SF, AF and OF. | **[10]** |