

**PROVIDED BY  
SHAHZAD AHMAD  
bc020400591@VU.EDU.PK  
SHAHZAD\_591@YAHOO.COM  
MODRATOR BHOLA GROUP  
Mob: 0321-9737313**

## **CS401 Computer Architecture & Assembly Language**

**Mid Term Examination – Spring 2005**

**Time Allowed: 90 Minutes**

**Please read the following instructions carefully before attempting any question:**

1. The duration of this examination is 60 minutes.
2. This examination is open Handouts.
3. Answer all questions.
  - a. There is no choice.
  - b. You will have to answer correctly all questions in this examination to get the maximum possible marks.
4. Do not ask any questions about the contents of this examination from anyone.
  - a. If you think that there is something wrong with any of the questions, attempt it to the best of your understanding.
  - b. If you believe that some essential piece of information is missing, make an appropriate assumption and use it to solve the problem.
5. You have been provided with all assembly tools so you can use assembly tools also.
6. Your paper contains 4 questions.

**All Coding questions should be answered using the Assembly language syntax.**

**Best of Luck**

**\*\*WARNING: Please note that Virtual University takes serious note of unfair means. Anyone found involved in cheating will get an `F` grade in this course.**

**Total Marks: 35**

**Total Questions: 04**

**Question No. 1**

**Marks : 08**

Calculate the physical address generated by the following segment offset pairs

- a. ABCD:0100
- b. 12BC:BC20
- c. FFFF:FFFF

d. 0002:52B7

**Question No. 2**

**Marks : 10**

Answer the following Questions.

- a. If number in DX:AX is divided by BX then where the remainder will be stored?
- b. Write formula for physical address calculation?
- c. What is the range of short jump?
- d. How many bits are used to store attribute values while printing string?
- e. What is the base address of display memory?

**Question No. 3**

**Marks : 08**

Suppose that AX=0x1234, BX=0x5678, CX=0x9ABC and SP=0x0100.

Give contents of AX, BX, CX and SP after executing following instructions:

Push AX

Push BX

XCHG AX,CX

Pop CX

Push AX

Pop BX

**Question No. 4**

**Marks : 09**

Write a program to move the top 3 words from stack in AX, BX, and CX without changing the stack and then put the biggest among these in CX register.

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