



BAHRIA UNIVERSITY

ISLAMABAD CAMPUS

Serial #

7875

ANSWER BOOK

STUDENT'S NAME (IN FULL): MUHAMMAD ABDULLAHREG NO: _____ ENROLMENT NO: 01-134222-086 CLASS: 3BCOURSE TITLE: COAL SHIFT: (MORNING/EVENING)

EXAM: (Midterm/Final) SEMESTER (Spring/Summer/Fall) DATE: _____

TEACHER'S NAME: RESPECTED SIR DR. ASFAND-E-YAR

1. Write your full name and other particulars clearly and legibly. Write on both side of the paper. No page to be torn and taken out of examination venue.
2. Read the instructions on question paper and answer book carefully and understand.
3. Paper will commence at exact time. Be punctual and be inside the examination hall at least 15 minutes before paper start time.
4. Be seated as per seating plan depicted in the Examination Admit Slip.
5. Students after start of paper will not be permitted to go to washrooms/toilets or any other place outside the examination venue.

N.B: Read carefully the instructions given overleaf

HALL NO: XL-7 INVIGILATOR'S SIGN: INVIGILATOR'S NAME: MAAM AYESHA NOREEN MEHWISH PERVEZ

Please enter the serial # of extra sheets taken, if any.

No. of Extra Sheets	Serial No.
1	18256
2	27754
3	

NOTICE FOR EXAMINER	
1.	Please mark the paper with Red Ink
2.	Fill in the column below properly with Red Ink

Q. No.	MARKS ASSIGNED	MARKS OBTAINED	Q. No.	MARKS ASSIGNED	MARKS OBTAINED
1	16	14	1	1	/
2	12	7	1	1	/
3	11	11	1	1	/
4	5	4	1	1	/
5	6	3+1=4	1	1	/

MAXIMUM MARKS 50 TOTAL MARKS OBTAINED 40 % AGE MARKSEXAMINER'S SIGN an

INSTRUCTIONS FOR STUDENTS

- No student would be allowed to sit in the Examination venue without showing Examination Admit Slip to the invigilator. No student should allow any one to impersonate him/her. This may result in serious consequences even to the extent of cancellation of registration from Bahria University.
 - Students prior entering the Examination venue should ensure that they are in possession of written material of any sort. All such material is to be left outside the venue of Examination. Any written material found in possession of a student, whether that material is related or unrelated to the paper, will result in grade 'F' in the relevant paper.
 - Writing on palm, arm or anywhere on the candidate's body/clothing is considered enough proof of cheating, which will result in award of grade 'F' in the paper.
 - Any attempt to copy/take or give help in examination is an offence, punishable to the extent of expulsion from the institution.
 - Books and notes are not to be brought inside the examination hall except in case of open book exam.
 - Bring your own pen, pencils, erasers, scales and calculators. Borrowing at the place of examinations is not permitted. Special/programmable calculators (except where permitted), electronic notebooks, mobile phones, PDAs and any other electronic accessories are prohibited at the examination venues.
 - All rough work is to be done on right side of the answer book, opposite the same question.
 - Additional sheets or graph sheet etc, if used, are to be properly tagged. Serial number of extra book(s) taken (if any) should be entered in specified box on the main Answer book.
 - Do not ask for any help from the invigilators in solving questions. This may be taken as an act of academic dishonesty and dealt accordingly. You may seek invigilator's assistance regarding misprinting. How and what to write should not be asked. Any query related to the question paper is to be clarified by concerned faculty member within first thirty minutes of the paper only. The query is to be addressed to all the students loudly by the concerned faculty.
 - Possession of firearms, knives etc, inside and in the vicinity of Examination Hall is a punishable crime under the country's law.
 - Disrupting the Examination venue by shouting or by rowdy acts, will be considered as serious punishable act under the country's law.
 - You are required to be respectful and polite towards the invigilation and admin staff. Show of temper, anger misbehavior, misconduct or disrespectful utterances will be dealt with serious punishment.
 - Eatables, beverages and smoking is not permitted at Examination Venue.

Certified that I have read and understood the instructions for compliance in the Examination hall/venue and I hereby undertake to abide by these in their true letter and spirit. I also declare on oath/affirm that I shall not challenge any penalty imposed on me by the Competent Authority for violating any of the instruction.

Signature of the Student: 

Q#01

7825

1A

11

Generally, call and end

Proc and Endp are the keywords used to determine that the function definition are inside these labels.

End keyword is written at the end of procedure which indicates that end of the program, if there is no value to be return by function, so it will move FIP to the "end main" statement.

(1)

Arithmetically shift left insert zeros
at the LSB (Least significant bit).
Which is also use for multiplication.

10100100

(e)

mov ah, 01100101 11 000001
xor ah, ah

PF = 0

FINAL XOR INSTRUCTION: 10100100.11

(F)

cmp instruction uses subtraction to perform the comparison. It subtracts operand 1 with operand 2.

For example.

eax - ebx

cmp eax, ebx

Using jump you will control the execution of cmp instruction.

O.10 = DATA + (PC)

L = DATA + PC

1 - 0 : .1001 011
1010 0001
12-1 10000001
X

-128, -1 -1,
~~SCHE~~ -128, 1

7825

(g)

mov al, A7h
and al, B1h

After this instruction.

Jump sign ~~will be taken~~
because msb is 01 which indicate sign.

(h)

First operand will be greater

cmp op1, op2 11 op1=1, op2=1

so ~~op1~~ ⁽¹⁾ will be greater $11 - 1 = 9$
 $11SF=0, DF=0$

QH02

Code:

```
include Irvine32.inc
.data
    c-size dword 4
    A$ byte A1h 23h 34h 46h
    B$ byte B9h C6h D7h E8h
    C$ byte 9Ch 4Dh 780h 16h
    D$ byte 86h F7h 3AH B2H
    r-num dword ?
    Cnum dword ?
    r-size dword #4
    a$ *byte[words]  ; a$ byte coh
.code
    call ReadInt
    mov r-num, eax
    call ReadInt
    mov Cnum, eax
    mov ebx, offset a$ ; offset arr
    mov esi, type a$, type arr
    mov edi, row-size
    mul edi
    mov edi, r-num
    mul edi
```

DONE AT LAST STREET

SIR

mov esi, 0

add esi, eax

add esi, c-num

mov [ebut+esi], a

; moved value to that location

; Now pointing using column major order.

mov r-num, 0

mov Cnum, 0

mov ebx, offset arr

mov ecx, r-size ; in column order
; row-size is used.

L1:

push ecx

mov ecx, c-size

mov esi, c-num

L2:

mov eax, r-size

mov edi, type arr

mul edi

add esi, eax

mov eax, byte PTR [ebut+esi]

call WriteInt

INC. IN SA INC

Rough work

sw-size * type

mov edi, s-size

ret

mov edi, type ase

mul ecu,

row, size

3, 2

3, 2 6x24

fixed * row size 3x4 12

cout row, inden

2

(b) 8 00 0

1000 0 0 0 2200 0 0 0 0

32

loop L2

inc cnum

Pop ecu

loop L1

exit

main endp

end main

220187 count:

main 2' apie on:

last value at 0:

benzid :

Q#03

include Irvine32.inc Irvine32.inc

• data
array dw 5d : 1, 2, 3, 4, 5

• code

main proc

mov esi, offset array

mov ecu, length of array
dec ecu

L1:

mov esi, offset array
push ecu

L2:

mov ea, [esi]

= mov ed, [esp+4]

cmp ea, ed

JL go

; Jump if less
; no sign is given

jmp next

; so taken it as

go:

; signed.

mov [esi], ed

mov [esi+4], ea

next:

add esi, 4

; incremented esi

dec ecu

loop L2

pop ecu

loop L1

exit

main endp

end main

sidemethod

Time says Main is also procedure.

main

sidemethod

sidemethod

sidemethod

Q#04

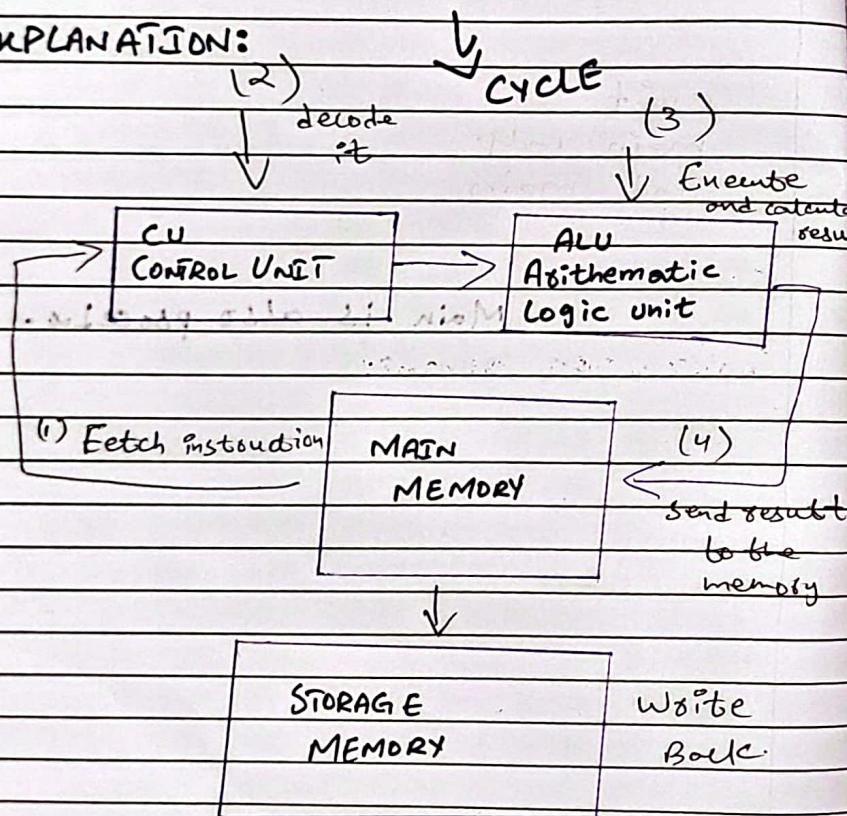
GIVEN:

Hexadecimal of Sub = "0000 000A"

Hexadecimal of Ebu "0000 0008"

VARIABLE Address "0001 00C8"

EXPLANATION:



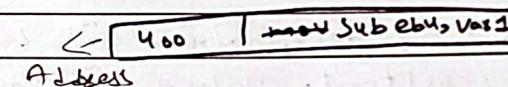
(1)

IF (Instruction Fetch):

This instruction is the first cycle of 5 cycles. This will fetch data or address of the expression from main memory where it is stored.

It will push the address to the IR/EP registers and at the same time the address of next instruction will be placed there.

e.g.



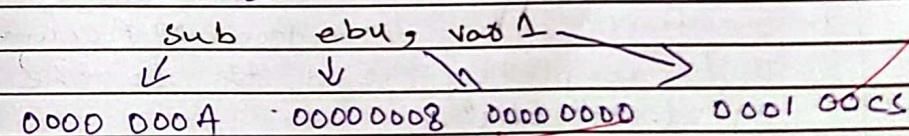
PC?

(2)

Instruction decode:

In this part we will decode the instruction in parts.

As we know



↑
This will be stored in the Address of var1 will be stored in (MAR)

This decoded instruction will be passed to the Arithmetic logic unit for execution.

3rd cycle

(3) ALU

This will receive the instruction from control units.

It will prepare the hardware for the execution. As we know subtraction is done by addition so address will be active.

As the destination is register so the resultant value is moved to the ~~area~~ MDR. Then, ~~MDR~~ will send the resultant to the ~~Accumulator~~ registers EAX.

(4) Memory :: Execution

In the fourth cycle, Value from ~~the~~ Accumulator will be completely sent to the registers "EBU".

Memory is the port of ALU where transfer of result is done.



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ADDITIONAL ANSWER SHEET

Serial #

18256

Please write down the serial number of this sheet on your main Answer Book

STUDENT'S NAME (IN FULL) M. Abdullah.

ENROLMENT NO. BL134227-026 CLASS 3B SECTION 1A

SUBJECT Computer INVIGILATOR'S SIGN /

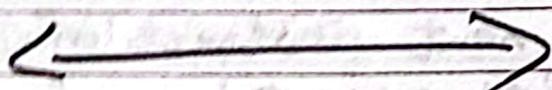
DATE: _____

(5) Storage Memory

Write back cycle 5th.

As the destination is registers, so these will be no writing of data held in this phase.

(W/B)



Q#05

Pipelining:

- Pipelining is the process in which multiple command or statement execute in cycles.

It help the PC to increase the speed of CPU.

DATA HAZARD:

When one instruction depend on the next or other instruction execution then data hazard is cause.

For example:-

add

~~mov~~ eax, ebx $\Rightarrow i_1$

add ecx, eax $\Rightarrow i_2$

In this instruction i_2 depend on the execution of result of i_1 , so it may cause hazards.

These are solutions for these:

Forwarding

(3/6)

Sequential pipelining

Not all the problems are solved by Forwarding

For example:-

mov eax, ebx

add ecx, eax

So mov instruction doesn't pass previous memory to arithmetic operation.

So the output will be corrupted.