ROLL NO 652606

GOVERNMENT COLLEGE UNIVERSITY, FAISALABAD

External Semester Examination Spring-2022

Degree/ Discipline: BSCS (4th Semester) | Subjective Part:
Course Code: CSI-403 | Time: 02:30 Hours | Marks: 80
Course Title: Computer Organization and Assembly Language | Cr. Hr.: 4(3-1)

Note: Attempt all questions. All questions carry equal marks.

Question # 2:

What is Assembly Language? Also describe why we learn it, discuss some benefits and its translator Assembler.

Question # 3:

a. What are intrinsic data types in assembly language?

b. What is symbolic constant? Also write the formulae for calculating the size, and number of elements of an array DATA for two symbolic constants ASIZE and ANOE.

c. What will be the value in EAX after the following lines execute?

```
MOV EAX, 1002FFFFH
INC AX
```

a. Use the following data definitions

```
.data
Mybytes byte 10h, 20h, 30h, 40h
```

i. Write a single instruction that moves the first two bytes in **Mybyte** to the DX register. The resulting value will be 2010h.

ii. Write an instruction that moves last byte from **Mybytes** to the EAX register with zero extension.

Question # 4:

a. Write a short note on CMP instruction. Also discuss its effects on flag registers for signed and unsigned data.

b. Write a program in Assembly Language to find the smallest value among three integer values.

Question # 5:

a. What are String Primitive Instructions? Also discuss MOV STRING DATA (MOVSB, MOVSW) and Compare String (SCASB, SCASW) Primitive Instructions

b. Write a program in Assembly Language to convert a small case letter into upper case letter. The letter may be scanned from user.

GOVERNMENT COLLEGE UNIVERSITY, FAISALABAD
SUB CAMPUS EXAMINATIONS (Spring Semester 2021-2022)

Roll No

Mid Term Examination
Course: Computer Organization Assembly language (CSI-403)
Session: 2020-2024
Marks: 18

Department: Computer Scienc
Class: BSCS, ADP (CS)
Semester: 4th
Times Allowed: 60 Minutes

Note:

Important instructions:-

- Time is a precious commodity, therefore, don't waste it doing cheating
- Question understanding is part of examination, therefore, don't bother the invigilators by asking questions
- Provide your time effectively by keeps of marks assigned to the question. No extra time will be granted
- Try to solve all the parts of a question in one place. Partial Solutions will not be graded
- No any electronic data storage device, mobile phone, or any other helping material allowed in the examination Hall

Attempt All Questions.

1) How the processor users the address bus, the data bus, and the control bus to communicate with the system? [3]

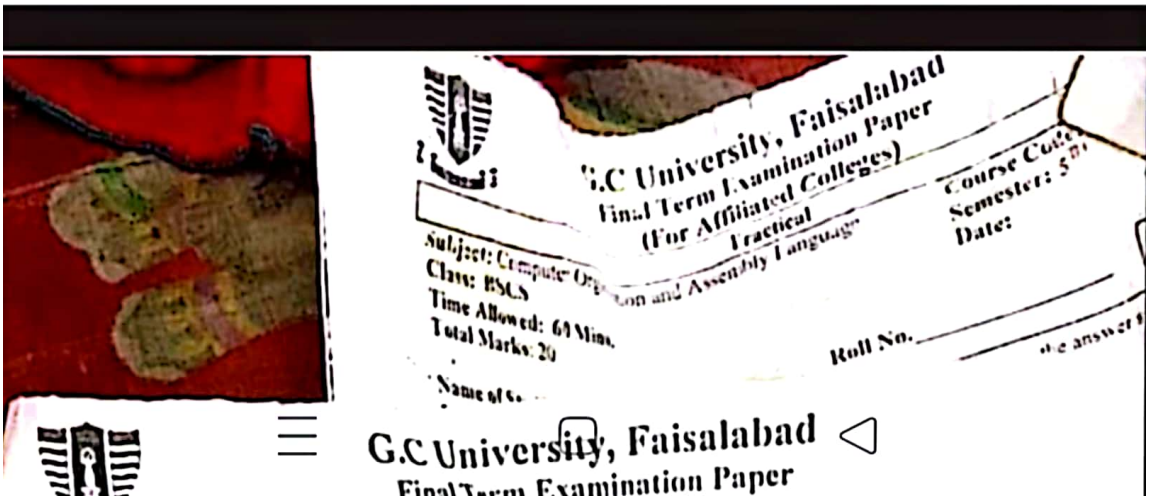
2) What are registers and what are the specific features of the accumulator Index registers, program counter, and program status word? [3]

3) What flags are defined in the 8088 FLAGS register? Describe the function of the zero flags, the carry flag the sign flag, and the overflow flag [3]

4) Write a program to add three numbers using registers [3]

5) List down the 14 registers of the 8088 architecture and briefly describe their user. [3]

6) Describe the instructions groups with details. [3]



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...inal Term Examination Paper
(For Affiliated Colleges)
Practical

Sub ...r Organization and Assembly Language
Cla...
Tir... 60 Mins.
To... 20

Course Code: CSI-505
Semester: 5TH
Date:

Name of Students: _____ Roll No._____ Group - IV

Instructions:

- Write down the Code / procedure of problem(s) given in question paper on the answer script
- All questions must be answered
- Make sure your Name, Roll No. and Attendance are properly written for each answer sheet

Question No.1

Write an assembly program that uses a loop to calculate the first seven values of the Fibonacci number sequence,described by the following formula: Fib(1) = 1, Fib(2) = 1, Fib(n) = Fib(n - 1) + Fib(n - 2).

Question No.2

Write an assembly program to read age of a person, If age is below 20 then display the message "you are in teenage", if age is between 20 and 50 then show the message "you are adult", otherwise display "you are going to be old".

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G.C University, Faisalabad
Final Term Examination Paper, Fall – 2018
(For Affiliated Colleges)

Subject: Computer Organization and Assembly Language | Course Code: CSE-401
Class: BSCS | Semester: 3rd
Time Allowed Min | Date:
Total Marks 30

Name of Students: M Waris | Roll No.

Instructions:
- Please read the question carefully, each question carries equal marks
- All questions must be answered
- Make sure your Name, Roll No and Attendance are properly written for each answer sheet

Question No 1

a. What are general purpose and segment registers?
b. What are the x86 processor's three basic modes of operation?

Question No 2

a. In a short note on the followings:
   i. Differentiate between instruction and directive
   ii. Why might you use a symbolic constant rather than an integer literal in your code?

Question No 3

a. What will be the value in EAX after the following lines execute?
```
MOV EAX, 1002FFFFH
NEG AX
```
b. Write a sequence of statements that use only PUSH and POP instructions to exchange the values in the EAX and EBX registers
c. Write a logical shift instruction that multiplies the contents of EAX by 16.

Question No 4

The formula for converting a Fahrenheit to a Celsius temperature is C = (5/9) * (F -32)
Write a complete assembly language program to prompt for a Fahrenheit temperature and display the corresponding Celsius temperature.

Question No 5

Write a program in assembly language to calculate a power of a number using a separate procedure to calculate power. The base and power values will be scanned from user.

GOVERNMENT COLLEGE UNIVERSITY, FAISALABAD
SUB CAMPUS EXAMINATIONS (Spring Semester 2021-2022)

Roll No _____

Mid Term Examination
Course: Computer Organization Assembly language (CSI-403)
Session: 2020-2024
Marks: 18

Department: Computer Scienc
Class: BSCS, ADP (CS)
Semester: 4th
Times Allowed: 60 Minutes

Note:

Important instructions:-

- Time is a precious commodity, therefore, don't waste it doing cheating
- Question understanding is part of examination, therefore, don't bother the invigilators by asking questions
- Divide your time effort on the basis of marks assigned to the question. No extra time will be granted
- Try to solve all the parts of a question in one place. Parted Solutions will not be graded
- No any electronic data storage device, mobile phone, or any other helping material allowed in the examination Hall

Attempt All Questions.

1) How the processor users the address bus, the data bus, and the control bus to communicate with the system" [3]

2) What are registers and what are the specific features of the accumulator, Index registers, program counter, and program status word? [3]

3) What flags are defined in the 8088 FLAGS register? Describe the function of the zero flags, the carry flag the sign flag, and the overflow flag [3]

4) Write a program to add three numbers using registers [3]

5) List down the 14 registers of the 8088 architecture and briefly describe their user. [3]

6) Describe the instructions groups with details. [3]

G.C University, Faisalabad
Final Term Examination Paper, Spring – 2017
(For Affiliated Colleges)

Subjective Part

Subject: Computer Organization and Assembly Language
Class: MSc (CS)
Time Allowed: Min
Total Marks: 20

Course Code: CSI-574
Semester: 2nd
Date:

Name of Students: _____ **Roll No.** 53436

Instructions:

- Please read the question carefully, each question carries equal marks
- All questions must be answered:
- Make sure your Name, Roll No and Attendance are properly written for each answer sheet

Question No.1

Explain the process of assembling, linking and running assembly programs with block diagram.

Question No.2

Write a short note on the followings:

a) Describe the Run time Stack.

b) Differentiate between directives and instruction.

Question No.3

Convert the following code into assembly language without using high level directives

If SALE < 10000 then BONUS is 0

Else If SALE >= 10000 and SALE <= 50000 then BONUS is 5%

Otherwise BONUS is 7%

Question No.4

Write a program in assembly language to read a number from user and then display its factorial on the screen using a separate procedure.

Question No.5

Write an assembly program to show the largest element of an array.

GOVERNMENT COLLEGE UNIVERSITY, FAISALABAD

SUB CAMPUSES EXAMINATIONS (SPRING SEMESTER 2022)

SUBJECTIVE **Class: BSCS** Roll No ----------

Course Code: CSI-403 Course Title: Computer Organization & Assembly Language
Semester: 4th
Time Allowed: 2hours *Marks:18* *Session: 2020-24*

Question No 02:

Define Stack Data Structure?

What is the programmer view of processor?

Shakir Jutah

Question No 03:

How value of stack pointer (SP) changes after every PUSH or POP instructions?

Question No 04:

Write an assembly language program for drawing a line in graphic mode of video service?

Question No 05:

With reference to the multitasking program "TSR Caller" write against each instructions what th
do.

MOV al,[chars+bx]

Move [es:40],al

INC bx

G.C University, Faisalabad
Final Term Examination Paper, Fall – 2017
(For Affiliated Colleges)

Subjective Part

Subject: Computer Organization and Assembly Language
Course Code: CSI-505
Class: BSCS
Semester: 5th
Time Allowed: Min
Date:
Total Marks: 20

Name of Students: _____ **Roll No.** _____

Instructions:

- Please read the question carefully, each question carries equal marks
- All questions must be answered;
- Make sure your Name, Roll No and Attendance are properly written for each answer sheet

Question No.1

Write the short notes on the followings:

a) Differentiate bet protected mode and real mode.

b) What are the three basic types of operands?

Question No.2

a) Find the sum A49 + 6BD

b) Declare an array of 120 uninitialized unsigned double word values

c) What is the 8 bit binary (two's complement) representation of -26 signed decimal integer

d) What will be the final value of EAX in this example?

```
mov eax,0
mov ecx,5
L1:
        mov eax,3
        add eax,5
loop L1
```

Question No.3

Write a program in assembly language to find the largest value from the three numbers which are scanned from user.

Question No.4

Write a program in assembly language to search a number from the array of ten elements.

Question No.5

Write an assembly program to scan your name from keyboard and then reverse this name and display.

G.C University, Faisalabad

Final Term Examination Paper

(For Affiliated Colleges)

Practical

Subject: Computer Organization and Assembly Language
Course Code: CSI-505
Class: BSCS
Semester: 5TH
Time Allowed: 60 Mins.
Date:
Total Marks: 20

Name of Students: _____ **Roll No.**_____ Group - II

Instructions:

- Write down the Code / procedure of problem(s) given in question paper on the answer script
- All questions must be answered
- Make sure your Name, Roll No. and Attendance are properly written for each answer sheet

Question No.1

CHAR_STRING contains uppercase letters that a program is to convert to lowercase. Access each character into a register and convert it into lower case and then store it in the string. Use indirect addressing and the LOOP instruction. The string is given below:

CHAR_STRING Byte "PAKISTAN", 0

Question No.2

Write an assembly program to convert the following C++ code.

```
f = 1, num = 5, i = 1;
do
{ f = f * i;
  i = i +1;
}while(i<=num);
cout<<"Factorial is ="<<f;
```

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Instructions:

- Please read the question carefully, each qu
- All questions must be answered.
- Make sure your Name, Roll No and Attend

Question No.1

Briefly explain the Virtual Machine concept.

Question No.2

a) Differentiate MOVZX, and MOVSX

b) Define four symbolic constants that represent integer 25 in decimal, bin hexadecimal formats

49 / 61

Question No.3

Convert the following code into Assembly language:

```
void main()
{ int n, f=1;
cout<<"enter any value : ";
cin>>n;
for(int i = 1; i <=n; i++)
f =f *i ;
cout<<"the factorial of given number is :"<<f;
getche();
}
```

Question No.4

Instructions:

- Please read the question carefully, each question
- All questions must be answered.
- Make sure your Name, Roll No and Attendance are properly

Question No.1

Briefly explain the Virtual Machine concept.

Question No.2

a) Differentiate MOVZX, and MOVSX

b) Define four symbolic constants that represent integer 25 in decimal, binary, octal, and hexadecimal formats

Question No.3

Convert the following code into Assembly language:

```
void main()
{ int n, f=1;
cout<<"enter any value : ";
cin>>n;
for(int i = 1; i <=n; i++)
f =f *i ;
cout<<"the factorial of given number is :"<<f;
getche();
}
```

Question No.4

Write a program in assembly language to read three numbers from user and then display largest number on the screen.

Question No.5

Write an assembly program to show all the odd numbers from 1 to 100 using loop.

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GOVERNMENT COLLEGE UNIVERSITY, FAISALABAD

External Semester Examination Spring-2022

.Degree/ Discipline: ADP(CS) (4th Semester) | Subjective Part:
Course Code: CSI-403 | Time: 02:30 Hours | Marks: 80
Course Title: Computer Organization and Assembly Language | Cr. Hr.: 4(3-1)

Note: Attempt all questions. All questions carry equal marks.

Question # 2:

a) Define CPU Register. Also discuss its categories General Purpose Registers, Segment Registers, and Flag Register.

b) Explain the difference between Big-Endian and Little-Endian Orders with suitable examples.

Question # 3:

a) Describe different types of operands used in Assembly Language.

b) Use the following data definitions

.data

Mybytes byte 10h, 20h, 30h, 40h

i. Write a single instruction that moves the first two bytes in Mybyte to the DX register. The resulting value will be 2010h.

ii. Write an instruction that moves last byte from Mybytes to the EAX register with zero extension.

Question # 4:

a) Write a short note on CMP instruction. Also discuss its effects on flag registers for signed and unsigned data.

b) Implement the following pseudo code in assembly language.

IF ((EAX = = 0) and (Y > 1)) then Y = Y – 1 otherwise Y = Y + 1 ;

Question # 5:

Write an Assembly Program to find the largest value from an array of ten elements. The elements will be read from keyboard.

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G.C University, Faisalabad
Final Term Examination Paper, Fall – 2018
(For Affiliated Colleges)

Subjective Part

Subject: Computer Organization and Assembly Language
Class: BSCS
Time Allowed: Min
Total Marks: 20

Course Code: CSI-505
Semester: 5th
Date: 5-4-19

Name of Students: M. Zeeshan **Roll No.** 2054

Instructions:

- Please read the question carefully, each question carries equal marks
- All questions must be answered:
- Make sure your Name, Roll No and Attendance are properly written for each answer sheet

Question No.1

What is Assembly Language? Also describe why we learn it, discuss some benefits.

Question No.2

Write short note on the followings:

a) Describe Flag register with some individual bits

b) Explain the difference between big endian and little endian

Question No.3

a) Write a single rotate instruction that exchanges the high and low halves of the DL register.

b) Implement the following pseudo code in assembly language.

IF ((EAX = = 0) and (Y > 1)) then Y = Y - 1;

Question No.4

Write an assembly program to read a number from user then find given number is even or odd.

Question No.5

Write an assembly program to find the largest value from an array of ten elements. The elements will be read from keyboard.

ROLL NO.....

GOVERNMENT COLLEGE UNIVERSITY, FAISALABAD

External Semester Examination Spring-2022

Degree/ Discipline: MSc. CS (2nd Semester) | Subjective Part:
Course Code: CSI-528 | Time: 02:30 Hours | Marks: 80
Course Title: Computer Organization and Assembly Language | Cr. Hr.: 3(2-1)

Note: Attempt all questions. All questions carry equal marks.

Question # 2:

a) Differentiate between General Purpose and Segment Registers

b) Write a short note on CMP instruction. Also discuss its effects on flag registers for signed and unsigned data.

Question # 3:

a) Describe different types of operands used in Assembly Language.

b) What is Symbolic Constant? And discuss its purpose in Assembly Language with some examples.

Question # 4:

a) What is Run-time Stack? Also discuss its various operations.

b) Write a program in Assembly Language to read your name and then show it in reverse order using Stack.

Question # 5:

a) Implement the following code in assembly language.

```
cin>>eax;
if ( eax > 0 )
        cout << "given value is positive";
else
        cout<<"given value is negative";
```

b) Write a program in Assembly language to generate the following pattern using nested loop.

```
0
0 1
0 1 2
0 1 2 3
0 1 2 3 4
```

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GOVERNMENT COLLEGE UNIVERSITY, FAISALABAD

External Semester Examination Spring-2022

Degree/ Discipline: BSCS (4th Semester) — Subjective Part

Course Code: CSI-403 — Time: 02:30 Hours — Marks: 80

Course Title: Computer Organization and Assembly Language — Cr. Hr.: 4(3-1)

Note: Attempt all questions. All questions carry equal marks.

Question # 2:

What is Assembly Language? Also describe why we learn it, discuss some benefits and its translator Assembler.

Question # 3:

a. What are intrinsic data types in assembly language?

b. What is symbolic constant? Also write the formulae for calculating the size, and number of elements of an array DATA for two symbolic constants ASIZE and ANOE.

c. What will be the value in EAX after the following lines execute?

```
MOV EAX, 1002FFFFH
INC AX
```

a. Use the following data definitions

```
.data
Mybytes byte 10h, 20h, 30h, 40h
```

i. Write a single instruction that moves the first two bytes in **Mybyte** to the DX register. The resulting value will be 2010h.

ii. Write an instruction that moves last byte from **Mybytes** to the EAX register with zero extension.

Question # 4:

a. Write a short note on CMP instruction. Also discuss its effects on flag registers for signed and unsigned data.

b. Write a program in Assembly Language to find the smallest value among three integer values.

Question # 5:

a. What are String Primitive Instructions? Also discuss MOV STRING DATA (MOVSB, MOVSW) and Compare String (SCASB, SCASW) Primitive Instructions

b. Write a program in Assembly Language to convert a small case letter into upper case letter. The letter may be scanned from user.

GOVT. COLLEGE UNIVERSITY, FAISALABAD

External Semester Examinations Spring-2023

Roll No.: _____

Degree: ADP Computer Science Semester: 4th Marks: 80

Paper: Subjective Course Title: Computer Organization & Assembly Language Course Code: CSI-406/403

Note: Attempt all questions. All the questions carry equal marks. Time allowed: 2:30 Hrs.

Question # 2:

a) What is Assembly Language? Also discuss some benefits, drawbacks of Assembly Language and what is the purpose of Assembler.

b) How is data read from memory? Explain the process with suitable diagram.

Question # 3:

a) Differentiate between MOV, MOVZX, and MOVSX with suitable examples.

b) Implement the following C++ statement in assembly language.

C = (F – 32) * 5 / 9;

Question # 4:

What is Runtime Stack? Describe its operations and explain how the CALL and RET Instructions operate.

Question # 5:

Write a program in Assembly Language to generate the table of a given number. The format of table is just like 5 x 1 = 5

5 x 2 = 10...

Department of Computer Science Govt. College University, Faisalabad	Program: BS CS	Course: CSI- 403Computer Organization & Assembly Language	Allowed Time: 30 Minutes
University Roll No:_____	Final Term Exam Semester-III	Objective part Marks: 10	

Objective Part

Note: Encircle the correct option. Cutting or filling two or more answer will result in zero mark.

Question No: 1 Translator which is used to convert codes of assembly language into machine language is termed as _____.

(a) Debugger (b) Interpreter (c) Assembler (d) Compiler

Question No: 2 English like abbreviations(Mnemonics) are used in _____ language.

(a) High Level Language (b) Assembly Language (c) Machine Language d) None of These

Question No: 3 _____ directive specifies the end of execution of a program.

(a) End(b) Return (c) Stop (d) Terminate

Question No: 4 The addressing mode which makes use of in-direction pointers is _____ Mode.

(a) Indirect addressing (b) Index addressing (c) Relative addressing (d) Offset addressing

Question No: 5 The addressing mode/s, which uses the PC instead of a general-purpose register is _____.

(a) Indexed with offset (b) Relative (c) Direct (d) Both Indexed with offset and direct

Question No: 6 The return address from the interrupt-service routine is stored on the _____.

(a) System heap (b) Processor register (c) Processor stack (d) Memory

Question No: 7 An interrupt that can be temporarily ignored is _____.

(a) Vectored interrupt (b) Non-maskable interrupt (c) Maskable interrupt (d) High priority interrupt

Question No: 8 When using the Big Endian assignment to store a number, the sign bit of the number is stored in _____.

(a) The higher order byte of the word (b) The lower order byte of the word (c) Both a & b (d) None of these

Question No: 9 To get the physical address from the logical address generated by CPU we use _____.

(a) MAR (b) MMU (c) Overlays (d) TLB

Question No: 10 When dealing with the branching code the assembler _____.

(a) Replaces the target with its address (b) Does not replace until the test condition is satisfied

(c) Finds the Branch offset and replaces the Branch target with it

(d) Replaces the target with the value specified by the DATAWORD directive

Department of Computer Science Govt. College University, Faisalabad	Program: BS CS	Course: CSI- 403 Computer Organization & Assembly Language	Allowed Time: 2Hours 30 Minutes
University Roll No:_____	Final Term Exam Semester-III	Objective part Marks: 26	

Question No: 1 Explain general Purpose Registers (AX, BX, CX, and DX).(3 Marks)

Question No: 2 Write a program to add three numbers using registers(3 Marks)

Question No: 3 What is Jump Instruction Explain Types of Jump instruction. (3 Marks)

Question No: 4 What is the difference between little endian and big endian formats? (3 Marks)

Question No: 5 What is the difference between interrupt and Interrupt Service Routine(ISR)? (3 Marks)

Question No: 6 Write a program in assembly language that calculates the square ofsix by adding six to the accumulator six times.(5 Marks)

Question No: 7 Write a program to find the maximum number and the minimumnumber from an array of ten numbers.(6 Marks)

GOVT. COLLEGE UNIVERSITY, FAISALABAD

External Semester Examinations Spring-2023

Roll No.: _____

Degree: ADP Computer Science **Semester:** 4th **Marks:** 80

Paper: Subjective **Course Title:** Computer Organization & Assembly Language **Course Code:** CSI-406/403

Note: Attempt all questions. All the questions carry equal marks. **Time allowed:** 2:30 Hrs.

Question # 2:

a) What is Assembly Language? Also discuss some benefits, drawbacks of Assembly Language and what is the purpose of Assembler.

b) How is data read from memory? Explain the process with suitable diagram.

Question # 3:

a) Differentiate between MOV, MOVZX, and MOVSX with suitable examples.

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