

**Course Name: (1) : Selective Course (2) (Compilers)**

**Program:** Computer and Control Eng. (CCE 389) Program

**Academic Year:** 2022-2023

**Level:** Third Year

**Semester:** Second term

**Sheet No. (1)**

**Subject: Compiler Design**

**Q1:** What is Compiler ?

**Q2:** What is the difference between a compiler and an interpreter?

**Q3:** What are Language Processors?

**Q4:** What are compiler phases ?

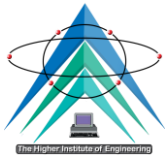
**Q5:** Explain Language Processing system in details.

**Q6:** Define token, pattern, and lexeme.

**Q7:** Determine token and lexeme in this program

Count number of tokens :

```
int main()
{
    int a = 10, b = 20;
    printf("sum is :%d",a+b);
    return 0;
}
```



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Q7: Determine token and lexeme in this program

```
#include<iostream>
// example
int main(){
    int a, b;
    a = 7;
    return 0;
}
```

Q8: Describe the languages denoted by the following regular expressions:

•  $\Sigma = \{a, b\}$

1.  $a|b$  denotes .....

2.  $(a|b)(a|b)$  denotes .....

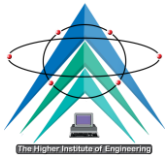
3.  $a^*$  denotes .....

4.  $(a|b)^*$  denotes.....

5.  $a|a^*b$  denotes .....

6.  $a^*|a^*b$  denotes .....

7.  $(ab^*)^+$  denotes .....



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Q9: Describe the languages denoted by the following regular expressions:

- a)  $a(a|b)^*a$ .
- b)  $((\epsilon|a)b^*)^*$ .
- c)  $(a|b)^*a(a|b)(a|b)$ .
- d)  $a^*ba^*ba^*ba^*$ .

Q10:

- a) All strings of a's and b's with an even number of a's.
- b) All strings of a's and b's with an odd number of b's.
- c) All strings of a's and b's that contain at least two b's.
- d) All strings of a's and b's that contain at most two b's.
- e) All strings of a's and b's that contain just two or three b's