

**National Institute of Technology Silchar**  
**Minor Test II, May' 2022**

Subject Code: CS-306,  
Semester: 8<sup>th</sup>,  
Duration: 20 min(Upload time included),

Subject: Principles of Programming Languages  
Department: Computer Science and Engineering  
Total Marks: 10

*Figure in the right hand margin indicates full marks for the question.*  
*All questions are compulsory.*

1. Choose the correct option:

- (a) Activation records are created
  - (A) During execution time only.
  - (B) During translation time only.
  - (C) One during translation and rest during execution time.
  - (D) Execution or translation time as instructed by the programmer.
- (b) Garbage collection
  - (A) Throws away garbage blocks from memory.
  - (B) Cannot remove dangling references.
  - (C) Concerned with unused memory blocks of a program.
  - (D) None of the above.

(1 × 2)

2. Choose the best option for the following:

- (i) Inheritance best associates with the property of
  - (a) Encapsulation   (b) Abstraction   (c) Polymorphism   (d) Hierarchy
- (ii) Encapsulation is not
  - (a) Information Hiding   (b) Inheritance   (c) Data abstraction   (d) Subprogram implementation

(2)

3. Fill in the blanks

- (a) In an activation record  
the static link is \_\_\_\_\_  
the dynamic link is \_\_\_\_\_
- (b) The \_\_\_\_\_ of an auto variable in C declared in main is the entire program execution time. Although its \_\_\_\_\_ is only the main function.

(2 × 2)

4. Consider the following code: 

```
int main() {  
    int a = 10, fact;  
    fact = factorial (a) ;  
}
```

How many activation record will be active for factorial function if it is

- (a) iterative
- (b) recursive

(1 × 2)