**Objective Type Question Paper**

**Subject:** SDLC & Algorithm, GitHub, and T-SQL  
**Total Marks:** 60  
**Time:** 30 Minutes

**Section A: SDLC & Algorithm (20 Marks)**

*(Each question carries 2 marks)*

1. Which of the following is NOT a phase in the Software Development Life Cycle (SDLC)?  
   a) Planning  
   b) Designing  
   c) Compilation  
   d) Maintenance
2. What is the main purpose of the feasibility study in SDLC?  
   a) To develop the software  
   b) To check whether the project is viable  
   c) To maintain the software  
   d) To test the software
3. Which SDLC model is also known as the Verification and Validation model?  
   a) Waterfall model  
   b) V-model  
   c) Spiral model  
   d) Agile model
4. The Agile model is best suited for:  
   a) Small projects with clear requirements  
   b) Large, complex projects with evolving requirements  
   c) Projects with no deadlines  
   d) One-time projects with fixed scope
5. An algorithm must have the following characteristics EXCEPT:  
   a) Input  
   b) Infinite steps  
   c) Output  
   d) Definiteness
6. The time complexity of an algorithm is measured based on:  
   a) Number of iterations  
   b) Number of variables used  
   c) Number of statements executed  
   d) Amount of memory allocated
7. In Big-O notation, O(1) represents:  
   a) Constant time complexity  
   b) Linear time complexity  
   c) Logarithmic time complexity  
   d) Exponential time complexity
8. A recursive algorithm must have:  
   a) A loop statement  
   b) A base case and a recursive call  
   c) Only iterative statements  
   d) Infinite recursion
9. The best sorting algorithm in terms of average-case time complexity is:  
   a) Bubble Sort  
   b) Selection Sort  
   c) Merge Sort  
   d) Quick Sort
10. In a flowchart, the **diamond** symbol represents:  
    a) Input/Output  
    b) Decision-making  
    c) Process execution  
    d) Looping

**Section B: GitHub (20 Marks)**

*(Each question carries 2 marks)*

1. What is GitHub mainly used for?  
   a) Cloud storage  
   b) Version control  
   c) Database management  
   d) Web hosting
2. What is the default branch in a Git repository?  
   a) develop  
   b) main  
   c) master  
   d) feature
3. The command to clone a Git repository is:  
   a) git copy  
   b) git clone  
   c) git fetch  
   d) git pull
4. Which command is used to check the status of files in a Git repository?  
   a) git check  
   b) git fetch  
   c) git status  
   d) git verify
5. Which command stages all changes in the working directory for commit?  
   a) git add .  
   b) git commit -m "message"  
   c) git push  
   d) git init
6. What is a **fork** in GitHub?  
   a) Creating a new branch  
   b) Copying a repository to your account  
   c) Merging branches  
   d) Deleting a repository
7. How do you undo the last Git commit without losing the changes?  
   a) git reset --soft HEAD~1  
   b) git revert HEAD  
   c) git rm -last  
   d) git checkout -b HEAD
8. What is the purpose of a **pull request** in GitHub?  
   a) To pull code from a remote repository  
   b) To merge changes into another branch  
   c) To delete a branch  
   d) To update local repository
9. What does the .gitignore file do?  
   a) Ignores unnecessary Git commands  
   b) Tracks files in a repository  
   c) Excludes files from being committed  
   d) Encrypts repository files
10. Which Git command is used to create a new branch?  
    a) git branch new\_branch  
    b) git checkout new\_branch  
    c) git commit -b new\_branch  
    d) git merge new\_branch

**Section C: T-SQL (20 Marks)**

*(Each question carries 2 marks)*

1. What does T-SQL stand for?  
   a) Technical Structured Query Language  
   b) Transactional Structured Query Language  
   c) Total Structured Query Language  
   d) Temporary Structured Query Language
2. Which T-SQL statement is used to retrieve data from a table?  
   a) GET  
   b) FETCH  
   c) SELECT  
   d) RETRIEVE
3. The primary key in a table must be:  
   a) Unique and Not Null  
   b) Only Unique  
   c) Only Not Null  
   d) Auto-generated
4. Which clause in SQL is used to filter the results of a query?  
   a) ORDER BY  
   b) WHERE  
   c) GROUP BY  
   d) HAVING
5. What will the following query return?

SELECT COUNT(\*) FROM Employees;

a) Number of employees  
b) Total salary of employees  
c) Maximum salary of employees  
d) Employee names

1. The difference between **INNER JOIN** and **OUTER JOIN** is:  
   a) INNER JOIN returns only matching records, OUTER JOIN returns all records  
   b) INNER JOIN is faster than OUTER JOIN  
   c) OUTER JOIN is always better  
   d) They both return the same result
2. Which command is used to delete all records from a table without deleting the structure?  
   a) DELETE  
   b) TRUNCATE  
   c) DROP  
   d) REMOVE
3. The function GETDATE() in T-SQL returns:  
   a) The current system date and time  
   b) The system start time  
   c) The current date only  
   d) The current time only
4. Which of the following is used to create a stored procedure in T-SQL?  
   a) CREATE PROCEDURE  
   b) MAKE PROCEDURE  
   c) ADD PROCEDURE  
   d) DEFINE PROCEDURE
5. The primary purpose of **indexes** in SQL is to:  
   a) Speed up queries  
   b) Store additional data  
   c) Encrypt records  
   d) Reduce storage