

# Ajay Kumar Garg Engineering College, Ghaziabad

## Department of Applied Sciences and Humanities

### Sessional Test-1

Course: B.Tech  
 Session: 2024-25  
 Subject: Engg. Chemistry  
 Max Marks: 25

Semester: I  
 Section: S-11 to S-20  
 Sub. Code: BAS 102  
 Time: 1 hour

**OBE Remarks:** All questions are related to CO1.

Q.No	1	2	3	4	5	6	7
CO No.	CO1	CO1	CO1	CO1	CO1	CO1	CO1
Bloom's Level* (L1 to L6)	L2	L1	L1	L3	L1	L1	L2

\*Bloom's Level: L1: Remember, L2: Understand, L3: Apply, L4: Analyze, L5: Evaluate, L6: Create

**Note :** Answer all the sections.

#### Section-A

(3x2 = 6)

A. Attempt all the parts.

1. How the atomic orbitals get combine to give different energy molecular orbitals, differentiate them.
2. Explain conductive behavior and slippery nature of Graphite.
3. Write two properties of CNT with relevant applications.

#### Section-B

(3x4 = 12)

B. Attempt all the parts.

4. Draw MO diagram of N<sub>2</sub> and CO. Also find bond order and magnetic behaviour.
5. What are Fullerenes? Discuss preparation, structure and application.
6. Write the four principles of green chemistry. Give synthesis of Adipic acid via conventional and green route.

#### Section-C

(1x7 = 7)

C. Attempt all the parts.

7. What are mesomorphic crystals, how they are resembles with solid and liquid. Classify them with examples. Also write their applications.

*Shiwai*  
 Faculty Sign

*[Signature]*  
 HOD Sign