

# Step Academy official

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STUDENT NAME	
PAPER CODE	42739
TIME ALLOWED	40
Paper Date	24-02-2026



CLASS	New 1st Year (FSC/ICS)
SUBJECT	Chemistry
TOTAL MARKS	25
Paper Type	

**Q1. Choose the correct answer.**

**5X1=5**

1. Which gas is used in separating hard water from normal water?

- (A)  $\text{SO}_2$                       (B)  $\text{H}_2\text{S}$                       (C)  $\text{NH}_3$                       (D)  $\text{NO}_2$

2. The oxidation state of sulfur in  $\text{H}_2\text{SO}_4$  is

- (A) +1                      (B) +2                      (C) +4                      (D) +6

3. PAN formation starts when \_\_\_\_\_ reacts with the hydrocarbon.

- (A) NO                      (B)  $\text{NO}_2$                       (C)  $\text{O}_3$                       (D)  $\text{HO}^\bullet$

4. The most stable species in an acidic environment is

- (A)  $\text{SO}_4^{2-}$                       (B)  $\text{SO}_2$                       (C)  $\text{H}_2\text{S}$                       (D) S

5. The drug omeprazole contains \_\_\_\_\_ group.

- (A) Thiol                      (B) Sulfoxide                      (C) Bisulfide                      (D) Sulfone

**Q2. Write short answers of the following questions.**

**5X2=10**

1 . What is the structure and bonding nature of the ammonia molecule?

2 . Why is NO considered a neutral oxide?

3 . What are the environmental conditions needed for denitrification?

4 . Why can't plants use nitrogen directly from the atmosphere?

5 . What is the importance of disulfide bridges?

**Q3. Write detailed answers of the following questions.**

**2X5=10**

1 . Explain the preparation and basicity of ammonia.

2 . Give flowsheet diagram and equations involved in the contact process.