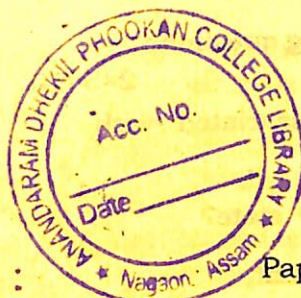


2026



CHEMISTRY

(Major)

Paper : CHE0600404

(Industrial Chemistry)

Full Marks : 45

Time : 2 hours

*The figures in the margin indicate full marks
for the questions.*

1. Answer the following questions : 1×5=5

- (a) Which industrial gas is produced via Haber process?
- (b) Name the key raw material used in the contact process for sulphuric acid manufacture.
- (c) Which type of glass contains boron oxide (B_2O_3)?
- (d) What is the primary component of urea fertilizer?
- (e) Name one phase transfer catalyst commonly used in industry.

2. Answer any *five* of the following questions :

2×5=10

- (a) Mention one hazard associated with chlorine gas.
- (b) What is meant by glassy state?
- (c) Define quick setting cement.
- (d) Give one example of a non-ferrous alloy.
- (e) What is the role of fillers in paints?
- (f) State one application of hydrogen peroxide.
- (g) What is electroless plating?
- (h) Define catalyst deactivation.
- (i) What is superphosphate fertilizer?
- (j) Name one component used in firecracker composition.

3. Answer any *four* of the following questions :

5×4=20

- (a) Describe the large-scale production and storage hazards of hydrogen gas.
- (b) Explain the manufacture of nitric acid (Ostwald process).
- (c) Discuss the composition and properties of borosilicate glass.

- (d) Explain the manufacture and setting process of cement.
- (e) Describe the manufacture of urea fertilizer with reactions.
- (f) Discuss the formulation and components of paints.
- (g) Explain the properties and composition of stainless steel.
- (h) Describe the industrial applications of zeolite catalysts.

Answer any *one* of the following questions : 10

- (a) Discuss the industrial production, applications and hazards of any two major industrial gases.
- (b) Give a detailed account of the silicate industries, including glass manufacture, types and ceramic materials.
- (c) Explain the classification, manufacture and environmental impact of fertilizers.
- (d) Discuss surface coating in detail, including types of paints, pigments, and metallic coating techniques.
