

2023

Time - 3 hours

Full Marks - 60

*Answer all groups as per instructions.
Figures in the right hand margin indicate marks.
Candidates are required to answer
in their own words as far as practicable.*

GROUP – A

1. Answer all questions and fill in blanks as required. [1 × 8]
- (a) What is the composition of photosensitive glass ?
- (b) What is the proportionate formula of cement ?
- (c) Percentage of nitrogen in urea is _____.
- (d) What is cullet ?
- (e) What is fuel cell ?
- (f) What is the meaning of eco-friendly paint ?
- (g) What are enamels ?
- (h) Give two examples of non-ferrous alloys.

P.T.O.

[2]

GROUP – B

2. Answer any eight of the following questions within two to three sentences each. [1½ × 8

- (a) What is a Primary Battery ?
- (b) Is CAN a mixed fertilizer ? (True / False)
- (c) What is Batch ?
- (d) What is stainless steel ?
- (e) Discuss the composition of white cement.
- (f) RDX stands for _____.
- (g) What are carbon fibres ?
- (h) Give one example of Azodye with formula.
- (i) Alizarin is a natural dye. (True / False)
- (j) Name two retardant paints.

GROUP – C

3. Answer any eight of the following questions within 75 words each. [2 × 8

- (a) Explain the term : High technology ceramics.
- (b) Discuss the composition of photosensitive glass.
- (c) Explain setting of cement.

[3]

- (d) Discuss the working of solid state electrolyte Battery.
- (e) How is ammonium phosphate manufactured ?
- (f) Give two examples of thinners.
- (g) What is plastic paint ?
- (h) Discuss decarbonization of steel.
- (i) Discuss pigments formulation.
- (j) How is potassium sulphate manufactured ?

GROUP – D

4. Answer any four of the following questions within 500 words each.

(a) Discuss the various stages involved during the process of glass-making with chemical reactions. [6]

(b) Write a note on : [6]

Carbon nanotubes

OR

Carbon fibres

(c) Discuss the manufacture of – [6]

(i) Triple super phosphate

(ii) Urea

P.T.O.



[4]

- (d) What are primary and secondary Batteries ? Discuss the components of a primary Battery. [6]
- (e) What is coating of surfaces ? Why is it required ? Discuss treatment of surface. [6]
- (f) Discuss heat retardant and fire retardant paints. [6]
- (g) Discuss preparation of PETN and its explosive property. [6]
- (h) Write notes on any two : [3 + 3]
- (i) Rocket propellant
 - (ii) Solar cell
 - (iii) Nitriding of steel