



JAM-003-1013012

Seat No. _____

B. Sc. (Sem. III) (CBCS) Examination

November - 2019

BS-IC-301 : Industrial Chemistry

Faculty Code : 003

Subject Code : 1013012

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

- Instructions :**
- (1) Question paper carries total 5 questions.
 - (2) All the questions are compulsory and carry 14 marks each.
 - (3) Draw labelled diagram wherever necessary.
 - (4) Assume suitable data.

- 1 (a) Answer the following questions. 4
- (1) Biotic components include _____ organism.
(living/non-living)
 - (2) Ecology is a part of an environment.
True/False ?
 - (3) Stratosphere is extended up to _____ km above
from earth surface.
 - (4) Los Angeles smog is also known _____ smog.
- (b) Answer in brief : (any one out of two) 2
- (1) Enlist various segments of environment.
 - (2) Draw only diagram of sulphur cycle.
- (c) Answer in detail : (any one out of two) 3
- (1) Enlist classification of pollution according to types
of pollutant.
 - (2) Write a detailed note on lithosphere.

- (d) Write a note on : (any one out of two) 5
- (1) Discuss phosphate cycle on land and under water with diagram.
 - (2) Explain source, reaction and effects of NO_x on men, plants and materials.
- 2 (a) Answer the following questions : 4
- (1) Fabric filter system is also known as bag house. True/False ?
 - (2) Give full form of FID.
 - (3) Any chemical process by which the sulfonic acid group introduced in compound is known as _____.
 - (4) NaOH is most widely used alkali for alkali hydrolysis process. True/False ?
- (b) Answer in brief : (any one out of two) 2
- (1) Draw only diagram of venturi scrubber.
 - (2) Enlist various sulfonating agents.
- (c) Answer in detail : (any one out of two) 3
- (1) Discuss spray tower with diagram.
 - (2) Explain physical and chemical factors affecting hydrolysis in brief.
- (d) Write a note on : (any one out of two) 5
- (1) Discuss electrostatic precipitator with diagram.
 - (2) Explain continuous sulfonation of benzene with neat diagram.
- 3 (a) Answer the following questions. 4
- (1) Peroxide can be used as oxidizing agent. True/False ?
 - (2) Water gas is used to produce _____ alcohol.
 - (3) The process where by one or more halogen atoms are introduced into an organic compound is known as _____.
 - (4) Trichloroacetaldehyde is also known as _____.

- (b) Answer in brief : (any one out of two) 2
- (1) Write any two oxidation reactions.
 - (2) Enlist hydrolyzing agents.
- (c) Answer in detail : (any one out of two) 3
- (1) Write any three halogenation reactions.
 - (2) Discuss manufacturing of acrolein with net diagram.
- (d) Write a note on : (any one out of two) 5
- (1) Discuss production of acetic acid via liquid phase oxidation.
 - (2) Discuss manufacturing of vegetable oil by hydrogenation process with diagram.
- 4 (a) Answer the following questions. 4
- (1) Enlist mechanical properties of metal and alloys.
 - (2) Define: Elasticity.
 - (3) Give any five metals and chemical structures of their corroded forms.
 - (4) Define: Sacrificial anode for prevention of corrosion.
- (b) Answer in brief : (any one out of two) 2
- (1) Enlist factors affecting mechanical properties of metal and explain any one in brief.
 - (2) Enlist different methods to avoid corrosion in industries.
- (c) Answer in detail : (Any one out of two) 3
- (1) Write a note on steel, its use, properties and alloying materials.
 - (2) Write factors influencing corrosion with examples.

- (d) Write a note on : (any one out of two) 5
- (1) Write a detailed note on alloys of copper and its properties.
 - (2) Explain different class of corrosion with examples.
- 5 (a) Answer the following questions. 4
- (1) _____ increases initial setting time of cement.
 - (2) Write chemical formula of silica and alumina.
 - (3) Write chemical formula for kaolinite.
 - (4) Copper oxide gives _____ colour to ceramic.
- (b) Answer in brief : (any one out of two) 2
- (1) Draw only diagram of ball mill used for cement.
 - (2) Write uses of ceramic materials with their ingredients and properties.
- (c) Answer in detail : (Any one out of two) 3
- (1) Write a brief note on typed of cement.
 - (2) Explain properties of refractory in detail.
- (d) Write a note on : (any one out of two) 5
- (1) Write a note on wet process for manufacturing of cement with diagram.
 - (2) Write a note on preparation of refractory with applications and properties.
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