



DDA-003-20103012

Seat No. _____

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

August - 2022

BSIC - 301 : Industrial Chemistry

Faculty Code : 003

Subject Code : 20103012

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

[Total Marks : 70

Instructions :

- (1) Question paper carries total 16 questions.
- (2) All the questions have general option & carry 14 marks each.
- (3) Answer any 5 questions out of total 10 questions.
- (4) Draw labeled diagrams wherever necessary & Assume suitable data.

1 (A) Answer the following questions : 4

- (1) Non-living components involve _____ organism.
(Biotic/Abiotic)
- (2) Plants are an example of producers. True/False?
- (3) Global warming is also known as _____.
- (4) The scientific study of the relationship of living organism with each other and with their environment is called _____.

(B) Answer in brief : 2

Draw only diagram of oxygen cycle.

(C) Answer in detail : 3

Enlist classification of pollution according to pollutant.

(D) Write a note on : 5

Explain components of an ecosystem in detail.

2 (A) Answer the following questions : 4

- (1) Stratosphere is extended up to _____ km from earth surface.
- (2) In which layer of atmosphere, ozone is available?
- (3) Nitrogen dioxide is responsible for acid rain. True/False?
- (4) Log Angeles smog is also known as _____ smog.

- (B) Answer in brief : 2
Define: Air pollution with example.
- (C) Answer in detail : 3
Write a brief note on Ionosphere.
- (D) Write a note on. 5
Discuss nitrogen cycle with neat diagram.
- 3 (A) Answer the following questions : 4
(1) Which chamber is used to remove large, abrasive particles usually $>50\mu\text{m}$ from gas stream?
(2) Give full form of FID.
(3) _____ decreases rate of sulfonation reaction?
(4) When naphthalene is sulfonated at 165°C , the principal product formed is _____.
- (B) Answer in brief : 2
Write various hydrolyzing agents.
- (C) Answer in detail : 3
Give a brief account of fluorination.
- (D) Write a note on : 5
Explain chemical and physical factors affecting to sulfonation.
- 4 (A) Answer the following questions : 4
(1) _____ group increases rate of sulfonation reaction.
(2) Conversion of starch into glucose and maltose by _____ enzyme.
(3) Give full form of NDIR.
(4) Baghouse is also known as _____.
- (B) Answer in brief : 2
Explain analysis of nitrogen oxides in brief.
- (C) Answer in detail : 3
Explain centrifugal scrubber with neat diagram.
- (D) Write a note on : 5
Discuss cyclone separator with diagram.
- 5 (A) Answer the following questions : 4
(1) In preparation of chloral from ethanol, _____ catalyst is more suitable.
(2) $\text{Benzene} + \text{Br}_2 \rightarrow \text{Bromo benzene} + \text{_____}$.
(3) For production of monochloroacetic acid from acetic acid and acetic anhydride, which catalyst is suitable?

- (4) Liquid phase oxidation method is used for thermally unstable substance. True/False?
- (B) Answer in brief : 2
Write any two oxidation reactions.
- (C) Answer in detail : 3
Explain brominating agent in detail.
- (D) Write a note on : 5
Explain continuous process for hydrogenation of oil with neat diagram.
- 6** (A) Answer the following questions : 4
- (1) V_2O_5 is used as _____ agent.
- (2) Ortho and Para Isomer of dichlorobenzene is separated by which method?
- (3) Silica-Alumina is support used for hydrogenation catalyst system. True/False?
- (4) _____ Unit process is involved in converting naphthalene to phthalic anhydride.
- (B) Answer in brief : 2
Write hydrogenation methods.
- (C) Answer in detail : 3
Discuss factors affecting to the hydrogenation.
- (D) Write a note on : 5
Explain manufacturing process of chloral with diagram.
- 7** (A) Answer the following questions : 4
- (1) Chromium is added in to steel formation to decrease ____.
- (2) Bronze is an alloy of _____ and _____ metals.
- (3) Corrosion is caused due to water and air. True/False?
- (4) The property of metal which can be hammered down to sheet is called _____.
- (B) Answer in brief : 2
What is dry corrosion?
- (C) Answer in detail : 3
Explain wear resistance & its application in industries.
- (D) Write a note on : 5
Discuss prevention of corrosion in detail.

- 8 (A) Answer the following questions : 4
- (1) Au is noble metal known. True/False?
 - (2) Which two metals are joined to form brass in form of alloy?
 - (3) The property of metal by which it can be drawn in to wire is called _____.
 - (4) There are dry and _____ type of corrosion.
- (B) Answer in brief : 2
- Define hardness with example.
- (C) Answer in detail : 3
- Explain classification of corrosion in brief.
- (D) Write a note on : 5
- Explain steel alloy in detail.
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- 9 (A) Answer-the following questions : 4
- (1) Natural cement is also known as Portland cement. True/False?
 - (2) Ceramics are _____ material. (Organic/Inorganic)
 - (3) Quartz can be used as _____ material in ceramics manufacturing. ,
 - (4) Tube mill is useful _____ equipments. (Crushing/ Grinding)
- (B) Answer in brief : 2
- Enlist various types of cement.
- (C) Answer in detail : 3
- Write various uses of cement.
- (D) Write a note on : 5
- Discuss rotary kiln with neat diagram.
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- 10 (A) Answer the following questions : 4
- (1) Cement is _____ material. (Organic/Inorganic)
 - (2) Write formula of gypsum.
 - (3) Acidic ceramic is also known as
 - (4) TiO_2 is useful coloring agent in ceramics. True/False?
- (B) Answer in brief : 2
- Write raw materials used for ceramics.
- (C) Answer in detail : 3
- Explain silica refractories in brief.
- (D) Write a note on : 5
- Write a detailed note on glazing process of ceramics.