Seat No. _____

# HM-003-2014012

## B. Sc. (Sem.-IV) (CBCS)

## (W.E.F. 2019) Examination

**April - 2023**

## BS-IC-401 : Industrial Chemistry

**Faculty Code : 003**

**Subject Code : 2014012**

Time : $2\frac{1}{2}$ Hours / Total Marks : **70**

**Instructions** :

(1) Question paper carries 5 questions.
(2) All the questions are compulsory.
(3) All questions carry 14 marks each.
(4) Figures to the right indicate maximum marks.
(5) Draw labeled diagram wherever necessary.
(6) Assume suitable data.

**1** (A) Answer the following questions : **4**

(1) Write full form of COD.
(2) Any undesirable change in water in the form of physical, chemical or biological is known as _____ pollution.
(3) Enlist sources of solid waste.
(4) Enlist sources of liquid waste.

(B) Answer in brief (any one out of two) : **2**

(1) Discuss nitrogen test for sewage in brief.
(2) Discuss open dumping process in brief.

(C) Answer in detail (any one out of two) : **3**

(1) Discuss recycling of plastic in brief.
(2) Explain method of collection for solid waste.

(D) Write a note on (any one out of two) : **5**

(1) Describe zigzag separator with neat diagram.
(2) Write a detailed note on analysis of sewage water.

2 (A) Answer the following questions : 4

(1) Air pollution is global whereas noise pollution is ____.

(2) Preparation of p-nitro acetanilide from acetanilide, temperature maintained at 3-5 $^{o}$C to prevent which reaction ?

(3) What is the full form of DVS ?

(4) Which compound has rose like odor ?

(B) Answer in brief (any one out of two) : 2

(1) Enlist types of radiation.

(2) Define :

(a) Nematicides

(b) Rodenticides

(C) Answer in detail (any one out of two) : 3

(1) Discuss cooling ponds in brief.

(2) Write six types of alkylating reactions.

(D) Write a note on (any one out of two) : 5

(1) Write a detailed note on nitration of toluene.

(2) Explain the production of phenyl ethyl alcohol with neat diagram.

3 (A) Answer the following questions : 4

(1) In manufacturing of vinyl acetate from acetylene, catalyst used is ____.

(2) Acid + Alcohol = ___.

(3) The molecular formula of cyanic acid is _____.

(4) Glycine can be synthesised from chloroacetic acid using ___.

(B) Answer in brief (any one out of two) : 2

(1) Define Esterification with example.

(2) What is effect of agitation on amination by reduction?

(C) Answer in detail (any one out of two) : 3

(1) Write any three reducing methods for producing amines.

(2) Write any three ammonolysis reaction using ammonia.

(D) Write a note on (any one out of two) : 5

(1) Discuss manufacturing of vinyl acetate with diagram.

(2) Describe manufacturing of aniline by continuous fixed bed vapour phase reduction of nitrobenzene with diagram.

4 (A) Answer the following questions : **4**

(1) Whatever quantities is being measured which is directly obtain from the instrument is known as ____.

(2) Most clocks are known as _____ instrument.

(3) Pneumatic means in presence of _____.

(4) The thermal well is made up of ____.

(B) Answer in brief (any one out of two) : **2**

(1) What is accuracy ?

(2) Give two examples of orifice viscometer.

(C) Answer in detail (any one out of two) : **3**

(1) Discuss various criteria for resistance wire.

(2) Write a note on recording instrument.

(D) Write a note on (any one out of two) : **5**

(1) Discuss vacuum thermocouple with diagram.

(2) Explain rotational viscometer with neat diagram.

5 (A) Answer the following questions : **4**

(1) Write unit of pressure.

(2) _____ pressure can never be negative.

(3) Hydrometer is used to measure _____.

(4) Ultra sound waves are also known as _____.

(B) Answer in brief (any one out of two) : **2**

(1) Draw only diagram of bubbler system.

(2) What is density ? Write its unit.

(C) Answer in detail (any one out of two) : **3**

(1) Write a short note on diaphragm box system with neat figure.

(2) Write a short note on barometer.

(D) Write a note on (any one out of two) : **5**

(1) Describe float type level indicator with schematic diagram.

(2) Explain hydrometer with neat and clean diagram.

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