

Total No. of Question : [4]

Registration No. :

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Programme Name : Bachelor of Chemical Engineering

Regular T.Y.B.Tech. ESE (A.Y. 2023-24) Sem.V Nov.2023

V SEMESTER (2021 BATCH)

201CHL305-Environmental Engineering and Plant Utilities(TH)

Duration : [11:00 AM - 01:00 PM]

Date : 01 Dec, 2023

Day : Friday

Marks : 50

Instructions :

1.Read questions carefully.

(Q1) All questions are compulsory. [20.0]

CO :- C305.1, C305.2, C305.3

Blooms Taxonomy :- Understand, Apply

(1.1) What is photo-catalytic reaction? Discuss their principle of operation. [7.0]

(1.2) What is grit chamber? Write a short note on neutralisation process in waste water treatment. [7.0]

(1.3) What is air pollution? write its sources ad their effects. [6.0]

(Q2) All questions are compulsory. [10.0]

CO :- C305.4

Blooms Taxonomy :- Remember

(2.1) What dose the hardness of water mean? discuss their types? [6.0]

(2.2) Why the pretreatment of industrial water is necessary? [4.0]

(Q3) All questions are compulsory. [10.0]

CO :- C305.5

Blooms Taxonomy :- Understand

(3.1) Describe the various properties and types of steam. [3.0]

(3.2) Find out the efficiency of the boiler by **DIRECT** method with the data given below: [7.0]

Type of boiler: Coal fired; Quantity of steam (dry) generated: 8 TPH; Steam pressure (gauge) / temp: 10 kg/cm²(g)/ 180°C; Quantity of coal consumed: 1.8 TPH; Feed water temperature: 85°C; GCV of coal: 3200 kCal/kg; Enthalpy of steam at 10 kg/cm²pressure is 665 kCal/kg (saturated); Enthalpy of feed water: 85 kCal/kg, (where GCV means Gross Calorific Value).

(Q4) Attempt any two out of three questions. [10.0]

CO :- C305.6

Blooms Taxonomy :- Understand

- (4.1) What do you mean by compressed air? Why is compressed air necessary for industry? [5.0]
- (4.2) What is the application of refrigeration in industries? Describe various refrigeration systems. [5.0]
- (4.3) What is the principle of cooling tower? Discuss its types. [5.0]
