



RAN-1241

B.Sc. (Environmental Science) Semester - VI Examination

March / April - 2019

Industrial wastewater analysis and treatment

Time: 2 Hours]

[Total Marks: 50

સૂચના : / Instructions

નીચે દર્શાવેલ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fill up strictly the details of signs on your answer book

Name of the Examination:

B.Sc. (Environmental Science) Semester - VI

Name of the Subject :

Industrial wastewater analysis and treatment

Subject Code No.: 1 2 4 1

Seat No.:

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Student's Signature

Instructions:

1. Figures to the right indicate full marks of the question.
2. Draw neat and labelled diagram whenever necessary.

Q.1 Give specific answers of the following :

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- 1 What is ion exchange? Give an example.
- 2 Why we are adding NaN_3 during the BOD determination ?
- 3 Give the definition of grab and composite sampling of waste water.
- 4 Write the permissible limit for COD and ammonical nitrogen for disposal of treated effluent.
- 5 Write the reaction of Chemical Oxygen Demand.
- 6 What is chemical precipitation in wastewater treatment ?

Q.2 Explain the following: (any two)

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- 1 How is the preservation of water samples done? Give any two problems observed during preservation.
- 2 Method of determination of Al^{+3} and Cr^{+6} in industrial wastewater.

- 3 Method of determination of nitrate and ammonical nitrogen in industrial wastewater.

Q.3 Answer the following : (any two) 16

- 1 Manufacturing process of alcohol from molasses describing the characteristics of waste generated.
- 2 Physical methods of treatment of water.
- 3 Explain sources and characteristics of wastes in pharmaceuticals industry.

Q.4 Write Short Notes (Any Two) 10

- 1 Basis and advantages of CETP.
 - 2 Activated sludge process and its merits.
 - 3 Electro-dialysis method.
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