Reg. No.										

MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

(A constituent unit of MAHE, Manipal)

VI SEMESTER B.Tech. (CHEMICAL ENGINEERING)

MAKE UP EXAMINATION, MAY 2019

SUBJECT: O.E.: INDUSTRIAL POLLUTION CONTROL (CHE 3282)

REVISED CREDIT SYSTEM

Time: 3 Hours MAX. MARKS: 50

Instructions to Candidates: Answer ALL **the questions.**

1 A	Explain the Hydrologic cycle with a neat diagram.	**3**
1 B	Discuss **any six** parameters evaluated to assess waste water quality.	**6*0.5=3**
1 C	Explain **any two methods (each)** of collecting gaseous and particulate samples from air.	**2+2=4**
2 A	Explain i) Reverse Osmosis ii) Ion Exchange used in tertiary treatment of wastewater.	**2+2=4**
2 B	Discuss any method of Anaerobic biological (or Secondary) treatment of wastewater.	**2**
2C	Explain with neat diagrams the principle and working of **any two** methods in Primary Treatment of wastewater.	**2+2=4**
3 A	Describe how SOx emission is controlled using Froth Flotation?	**3**
3 B	Explain the principle and working of **any 1 method (each)** to control Particulate matter emission and NOx Emission.(Draw diagram wherever necessary).	**2+2=4**
3 C	The maximum CO concentrations normally measured in downtown Salt Lake City are about 3000 $\mu g/m^3$. These values occur during strong inversions during which wind speed was 0.5 m/s and mixing height was 95 m. The background concentration for this situation is estimated to be 450$\mu g/m^3$. The downtown area of Salt Lake City may be approximated as 4 km by 3 km square. Estimate the emission density (g/s. m^2) for CO for downtown Salt Lake City.	**3**
4	Explain the 5 steps involved in sludge treatment before disposal (in not more than two or three sentences per process).	**10**
5 A	Explain **any two** methods of managing e-waste in industry.	**2+2=4**
5 B	Describe methods adopted to control noise pollution in industry.	**6**

******** END ********