

Reg. No. :

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Question Paper Code : 60027

I YEAR

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2022

First Semester

Civil Engineering

CY 3151 – ENGINEERING CHEMISTRY

(Common to: All Branches (Except Marine Engineering))

(Regulations 2021)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Give a brief note on BOD and COD.
2. Write the reasons for the caustic embrittlement in boilers.
3. Write about the important categories of nano-materials.
4. Give a brief description about the sol-gel principle.
5. State about the requisites of composite materials.
6. Write the concept of hybrid composites.
7. Give a brief note on power alcohol and bio diesel.
8. Write about the spontaneous ignition temperature.
9. List out the important applications of solar cells
10. Give a brief note on the microbial fuel cell.

PART B — (5 × 16 = 80 marks)

11. (a) Explain the process of desalination of brackish water by the reverse osmosis method.

Or

- (b) Write the detailed description about the municipal water treatment process.

12. (a) Write in detail about the preparation of nano-materials by electro spinning technique.

Or

(b) Explain on the application of nano-materials in electronics and catalysis.

13. (a) Explain the properties and applications of metal matrix composites.

Or

(b) Explain the properties and applications of polymer matrix composites.

14. (a) Explain the manufacturing method of synthetic petrol by Bergius process.

Or

(b) Explain the flue gas analysis by the Orsat method.

15. (a) Give the detailed description about the recent development in the solar cell materials.

Or

(b) Explain the principle and the working process of lithium-ion battery.