Total No. of Questions:-4
Class Roll No ... ...

Total No. of printed pages:-1
Enrollment No .....

BT-101

Mid-Semester Examination-II (Jan2024)

B.Tech. I Semester (CSE)

Engineering Chemistry& Life Science

Duration: 1hr 30min **Max. Marks: 20**

Note: Attempt all questions.

Q1. Describe determination of calorific value of a coal sample by Bomb calorimeter,(construction,procedure,corrections) **[CO-3 /4Marks]**

OR

c) Analyse a coal sample for its Proximate parameters with significance.

d) Apply Dulongs formula to calculate HCV &NCV of a coal sample having C-75%,H-10%,O-8%,S-2%&ash-5%**[CO-3 / 2+2 Marks]**

Q2.a) Calculate minimum amount of air required for combustion of5 kg coal having C 80%,H-5%,O-5%,& S-5%..

c) Differentiate between Octane and Cetane no**[CO-3 / 2+2 Marks].**

OR

a) If a petrol engine is giving a rattling sound analyse the phenomenon and how can you overcome the problem.Explain.

b) 1gm of coal sample kept at 100^0c for 1hr,residual wt is 0.95gm,further heat at 950^0c for 7 min.the wt was found to be 0.8gm,&then after 30 min of heating at 750^0c residual wt was 0.1gm.calculate proximate parameter.**[CO-3 / 2+2 Marks]**

Q3. Describe protein structure with diagram.and its denaturation. **[CO-4/ 4+2Marks]**

Or

a) Classify carbohydrates with examples

b) Differentiate between DNA and RNA. **[CO-4 / 3+3 Marks]**

Q4. a)Describe mendels law of inheritance

b) Explain universality and degeneracy of genetic code. **[CO-5/ 4+2 Marks]**

Or

b) A desired gene is inserted in a host cell identify the process and explain only mechanism and any 3 applications of the process.

b) Analyse and explain the genetic disorder

i)Extra 21^{st} chromosome

ii)One X sex chromosome is missing**[CO-5 / 4+2Marks]**