S.R. FATEPURIA COLLEGE
Beldanga, Murshidabad
Semester-II

Internal assessment Examination-2020 (BLENDED MODE)
Course Name: CHEMHT-3
(Inorganic-1B + Physical-IB)

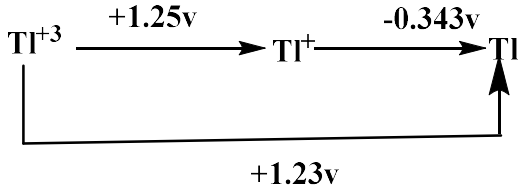
F.M. - 10Time- 1 Hour

The figures in the right-hand margin indicate marks. Candidates are required to give their answers in their own words as far as practicable.

Inorganic-IB

Answer the following questions:

1. Explain the reaction symbiosis concept. **1**
   a) $BF_3H^- + BH_3F^- \rightarrow BF_4^- + BH_4^-$
   b) $CF_3H + CH_3F \rightarrow CF_4 + CH_4$
2. Comment on the following reaction by HSAB principle. **1**
   a) $LiI + CsF \rightarrow LiF + CsI$
   b) $HgF_2 + BeI_2 \rightarrow BeF_2 + HgI$
3. Draw the Frost diagram from the Latimer diagram: **3**



Explain whether a species will disproportionate or not from an inspection of the Latimer diagram?

Physical-IB

Answer the following questions:

1. What is Carnot engine? Establish work efficiency equation of a reversible Carnot cycle.**3**
2. Establish a second order rate constant equation for equal concentration of reactant. Calculate the half-life of this reaction**.** **2**

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Internal assessment Examination-2020 (BLENDED MODE)
Course Name: CHEMHT-4
(Organic-II)

F.M. - 10Time- 1 Hour

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Organic-II

Answer the following questions:

1. Write short notes on following: **2**
   (i) Atropisomerism
   (ii) Buttressing effect
2. Draw the conformational energy diagram of 2-methylbutane. Comment on stability of its different form. **3**
3. (+)PhCOOCH(Me)Ph on hydrolysis in presence of dilute acid gives and alcohol with loss of optical activity. Explain $\mathbf{2\frac{1}{2}}$
4. Phenoxide ion reacts with benzyl chloride very slowly but the rate increases in presence of a small amount of sodium iodide. Explain. $\mathbf{2\frac{1}{2}}$