

## B.Sc Part-III (Hons) Practical Examination' 2021

(Under 1+1+1 system)  
Gurudas College Centre  
Subject: Physical Chemistry  
Paper – VIIB

Time: 2 hr 30 min

F.M.- 50

1. Write the theory/ principle behind the given experiment.
2. Represent the experimental data (supplied) in proper tabular form according to the given experiment.
3. Calculate the result of the given experiment according to the supplied experimental data. [10 + 10 + 15]

Experiment:

**Determination of the rate constant of acid catalyzed mutarotation of sucrose polarimetrically**

Data:

- a. Temperature: 25°C
- b. Data regarding measurement of angle of rotation:

Instrumental error: +0.4°

Set: 25 ml supplied catalyst + 25 ml sucrose solution

Time of half-discharge: 0:0 min

Time to time the angle of rotation varied as follows:

Time (min)	5	10	15	20	25	30	35	infinite
Angle of rotation (°)	13.9	12.4	11.4	10.8	9.5	8.7	8.0	-5.8

### Lab-Quiz:

*Q.1 to Q.8 each carries 2 marks and Q.9 to Q.12 each carries 1 mark. Answer total 15 marks.*

- Q1.Name a system which has both upper & lower CST.
- Q2.What do you mean by plane polarized light?
- Q3.How many phases would you expect at 80 °C for a system with 35% phenol & 65% water?
- Q4.What are the different components of a polarimeter?
- Q5.What do you mean by optical activity?

- Q6.Explain whether there is any role of ionic strength in the kinetic study of inversion of cane sugar?
- Q7.The intensity of incident radiation does not affect the value of optical density----true or false?
- Q8.Name a system having only a lower CST.
- Q9.Which concentration unit is temperature independent?
- Q10. Write down the dimension of surface tension.
- Q11. Define surface tension.
- Q12. Write down the cgs unit of viscosity coefficient.