

## B.Sc Semester IV (Hons) Practical Examination' 2021

(Under CBCS system)  
Gurudas College Centre  
Subject: Physical Chemistry  
Paper – CC-4-9 Pr

Time: 1hr 30 min

F.M.- 30

1. Write the theory/ principle behind the given experiment.
2. Represent the experimental data (supplied) in tabular form according to the given experiment.
3. Calculate the rate constant. [6+4+6]

Experiment:

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**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: +0.2°  
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 (°)	12.9	11.4	10.4	9.5	8.7	8.1	7.6	-3.8

### LAB-QUIZ

*Each question carries 2 marks. Answer any seven.*

1. What do you mean by optical activity?
2. Explain whether there is any role of ionic strength in the kinetic study of inversion of cane sugar?
3. The intensity of incident radiation does not affect the value of optical density----true or false?
4. Name a system having only a lower CST.
5. Which concentration unit is temperature independent?
6. Name a system which has both upper & lower CST.
7. What do you mean by plane polarized light?
8. How many phases would you expect at 80 °C for a system with 35% phenol & 65% water?
9. What do you mean by partition co-efficient?
10. What is the normality of a 1M KMnO<sub>4</sub> solution? Calculate.