

# Peer-Peer Mentoring Program

Student Learning Center, Hansraj College

**Month and Year: March, 2022**

**Department:** Botany Department

**Name of the Departmental Program Coordinator:** Dr. Satyakam Guha

S. No	Name of the Mentor	Semester	Number of sessions	Date and Time (of each session)	Topics covered (in each session)	No. of Mentees attended (per each session)
1.	Josemon Biju	VI	4	March 12, 2022 4:00-4:30 p m.	General introduction about the mentoring	18
				March 19, 2022; 11:00-12:10	Respiration- Glycolysis, Anaerobic respiration	15
				March 19, 2022; 2:10-3:00	The Cell- Cell as a unit of structure and function; Characteristics of prokaryotic and eukaryotic cells; Origin of eukaryotic cell (Endosymbiotic theory).	7
				March 26, 2022; 11:00-11:40	Respiration- Transition reaction, Krebs cycle/TCA cycle	8

## Mentor 1: Mr. Josemon Biju

**Course:** B.Sc (H) Botony

**Current Sem:** VI

**Email id:** [josephbiju150@gmail.com](mailto:josephbiju150@gmail.com)



**March 19, 2022:** Topics covered: Glycolysis and Anaerobic respiration from the unit Respiration and students from Botany were taught the topics Cell as a unit of structure and function, Characteristics of Prokaryotic and Eukaryotic cells, Origin of Eukaryotic cells (Endosymbiotic theory) from the unit The Cell.

Full Name	User Action	Timestamp
josemon	Joined	3/19/2022, 11:01:16 AM
yuvant14743	Joined before	3/19/2022, 11:01:16 AM
harshita14731	Joined	3/19/2022, 11:01:47 AM
prerna14653	Joined	3/19/2022, 11:03:29 AM
prerna14653	Left	3/19/2022, 11:04:50 AM
prerna14653	Joined	3/19/2022, 11:07:31 AM
naitik14723	Joined	3/19/2022, 11:06:01 AM
riya14682	Joined	3/19/2022, 11:07:19 AM
chandni14683	Joined	3/19/2022, 11:08:04 AM
ashish14673	Joined	3/19/2022, 11:12:03 AM
ashish14673	Left	3/19/2022, 11:13:37 AM
bhumika14664	Joined	3/19/2022, 11:12:16 AM
neha14709	Joined	3/19/2022, 11:16:06 AM
neha14709	Left	3/19/2022, 11:16:36 AM
mohima14656	Joined	3/19/2022, 11:16:55 AM
vaibhavi3105	Joined	3/19/2022, 11:32:50 AM
vaibhavi3105	Left	3/19/2022, 11:33:03 AM
harsh14698	Joined	3/19/2022, 11:38:55 AM
shweta14734	Joined	3/19/2022, 11:39:19 AM
shweta14734	Left	3/19/2022, 12:01:18 PM
harsh14696	Joined	3/19/2022, 11:41:27 AM
harsh14696	Left	3/19/2022, 11:42:41 AM
aditi14716	Joined	3/19/2022, 11:43:20 AM

Full Name	User Action	Timestamp
josemon	Joined	3/19/2022, 2:10:50 PM
anudeepti3187	Joined	3/19/2022, 2:11:03 PM
anudeepti3187	Left	3/19/2022, 2:27:08 PM
anudeepti3187	Joined	3/19/2022, 2:28:17 PM
ayushi3121	Joined	3/19/2022, 2:11:14 PM
kabir3176	Joined	3/19/2022, 2:11:18 PM
vaibhavi3105	Joined	3/19/2022, 2:11:51 PM
aanchal3138	Joined	3/19/2022, 2:12:09 PM

## Photographs:

**WHAT IS A CELL?**

- A CELL IS THE SMALLEST, BASIC UNIT OF LIFE RESPONSIBLE FOR ALL OF LIFE'S PROCESSES. THE WORD CELL COMES FROM A LATIN WORD "CELL" MEANING ROOMS.
- IT IS THE BUILDING BLOCK OF LIFE. WHY? IT CAN REPLICATE ITSELF INDEPENDANTLY.
- STRUCTURAL AND FUNCTIONAL UNIT OF LIFE.
- STRUCTURAL? BECAUSE ALL CELLS ARE MADE UP OF CELLS
- FUNCTIONAL? BECAUSE ALL THE VITAL FUNCTIONS OF LIFE CAN BE CARRIED OUT IN A CELL. CELLS CONTAIN ALL THE ORGANELLES FOR VARIOUS VITAL FUNCTIONS.
- EXAMPLE- RESPIRATION IS CARRIED OUT BY MITOCHONDRIA, DIGESTION BY LYSOSOME, REPRODUCTION BY NUCLEUS.

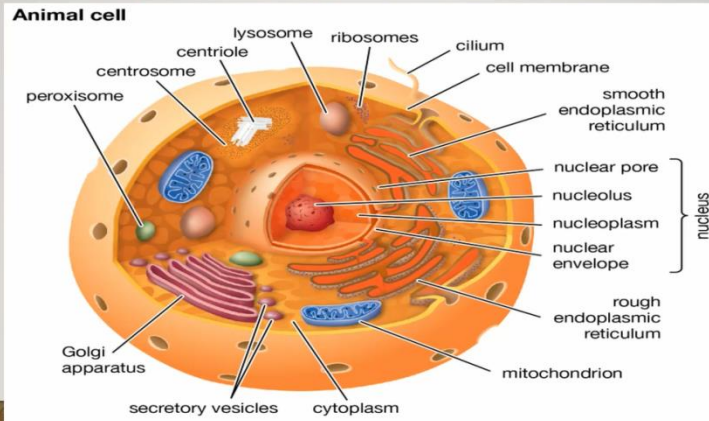
The screenshot shows a Zoom meeting interface with a Windows taskbar at the bottom. The taskbar includes a search bar, several application icons (Edge, File Explorer, Amazon, Mail, PowerPoint, Chrome, Teams), system tray icons (temperature 34°C, volume, network), and the date/time (ENG IN 2:20 PM 3/19/2022). The Zoom participant bar at the bottom shows icons for anudeepti3187, kabir3176, aanchal3138, vaibhavi3105, ayushi3121, josemon, and another josemon.

**FACTORS FOR SIZE OF CELLS**

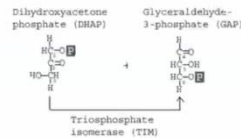
- Nucleo- cytoplasmic ratio- Nucleus controls the fuctions of the cell. Nucleus should be capable enough to take care of the cell.
- Rate of Metabolism
- Surface area to volume ratio- we normally assume the cell to be cubical in shape
- Area of cube-  $6a^2$  square
- Area: volume ratio decreases as size of the cell increases.
- So size of the cells remain small so that they are efficient.

The screenshot shows a Zoom meeting interface with a Windows taskbar at the bottom. The taskbar includes a search bar, several application icons (Edge, File Explorer, Amazon, Mail, PowerPoint, Chrome, Teams), system tray icons (temperature 34°C, volume, network), and the date/time (ENG IN 2:28 PM 3/19/2022). The Zoom participant bar at the bottom shows icons for anudeepti3187, kabir3176, aanchal3138, vaibhavi3105, ayushi3121, josemon, and another josemon.

# EUKARYOTIC CELLS- AN ANIMAL CELL



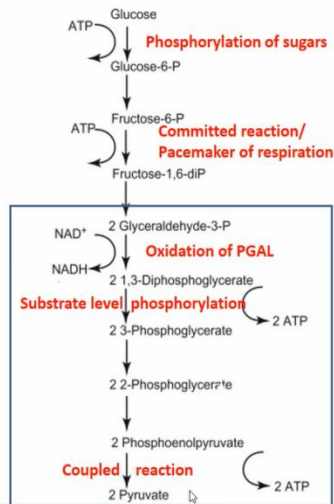
- The enzyme **triosephosphate isomerase** rapidly interconverts the molecules dihydroxyacetone phosphate (DHAP) and glyceraldehyde 3-phosphate (GAP). Glyceraldehyde phosphate is removed / used in next step of Glycolysis.
- GAP is the only molecule that continues in the glycolytic pathway. As a result, all of the DHAP molecules produced are further acted on by the enzyme Triosephosphate isomerase (TIM), which reorganizes the DHAP into GAP so it can continue in glycolysis. At this point in the glycolytic pathway, we have two 3-carbon molecules, but have not yet fully converted glucose into pyruvate.

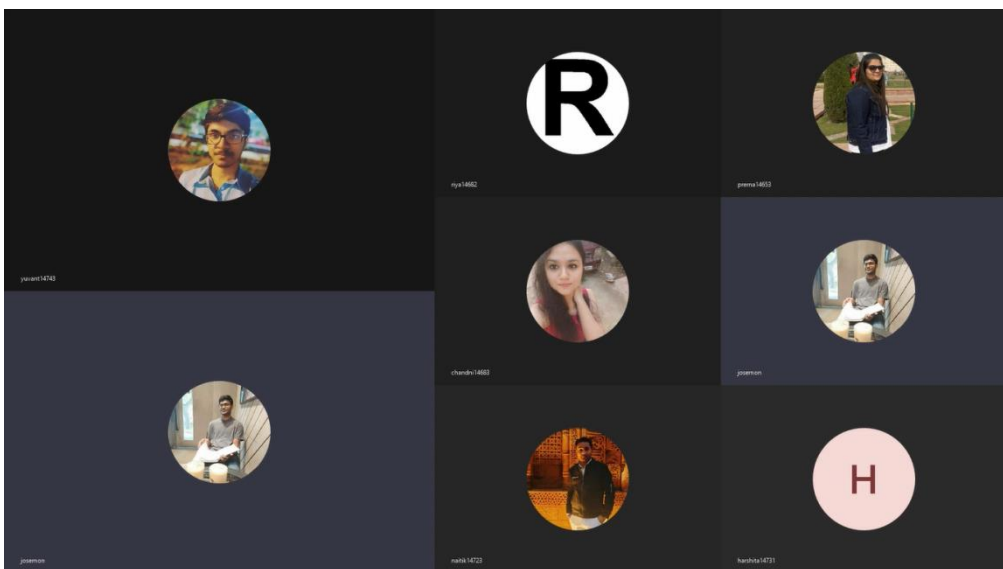
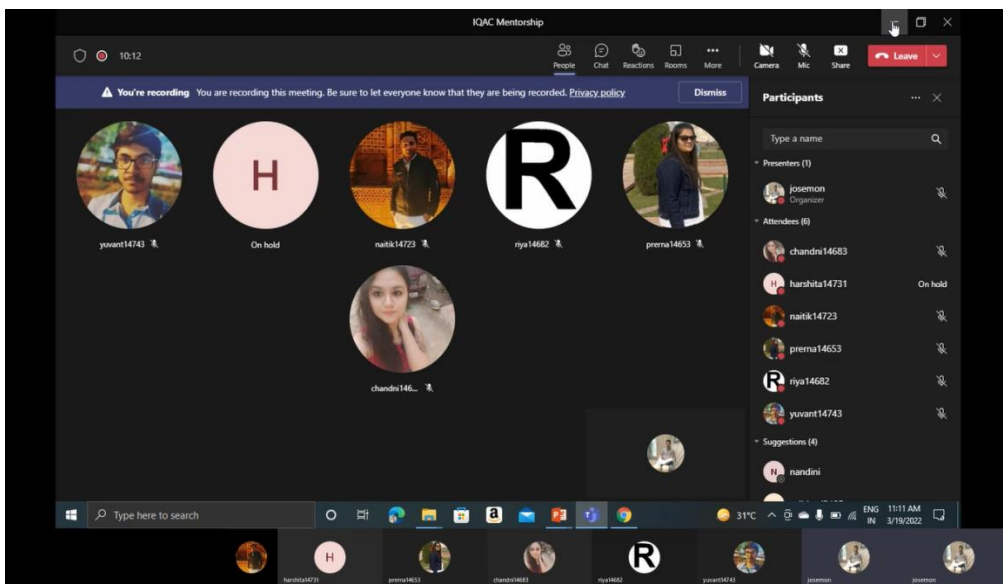
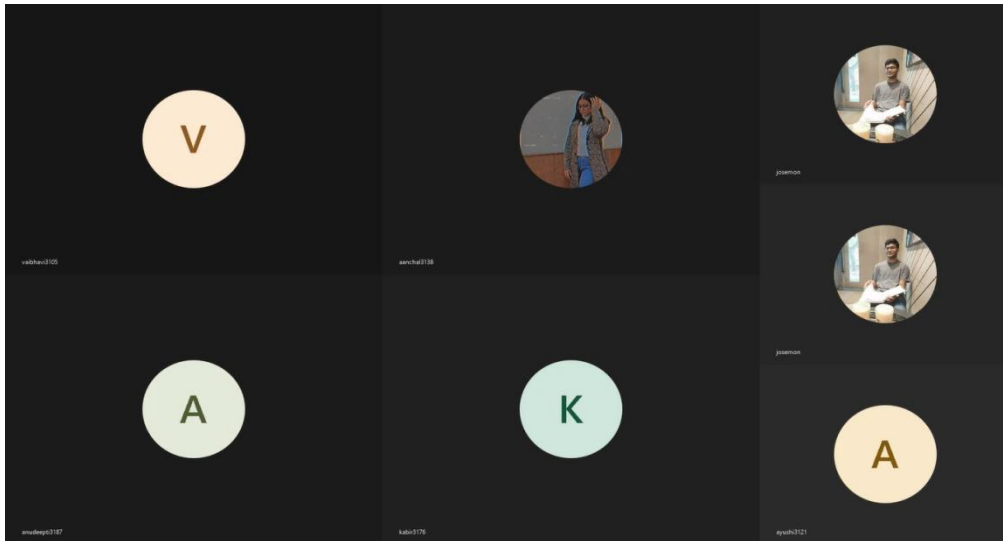


## Summary

Products of Glycolysis:

- 2ATP
- 2 NADH
- 2 Pyruvate



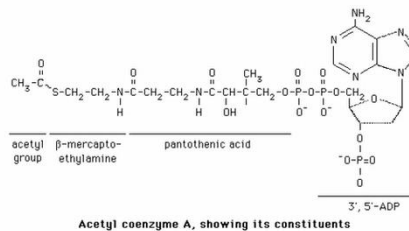


**March 26, 2022:** The topics covered were Transition Reaction, Aerobic respiration and Krebs cycle/ TCA cycle

Full Name	User Action	Timestamp
josemon	Joined	3/26/2022, 11:13:14 AM
prerna14653	Joined	3/26/2022, 11:14:05 AM
prerna14653	Left	3/26/2022, 11:14:09 AM
prerna14653	Joined	3/26/2022, 11:23:40 AM
prerna14653	Left	3/26/2022, 11:44:30 AM
prerna14653	Joined	3/26/2022, 11:44:37 AM
aditi14716	Joined	3/26/2022, 11:14:31 AM
aditi14716	Left	3/26/2022, 11:14:37 AM
bhumika14664	Joined	3/26/2022, 11:16:58 AM
garima14659	Joined	3/26/2022, 11:17:31 AM
garima14659	Left	3/26/2022, 11:26:28 AM
riya14682	Joined	3/26/2022, 11:20:06 AM
mohima14656	Joined	3/26/2022, 11:23:53 AM
mohima14656	Left	3/26/2022, 11:32:48 AM
mohima14656	Joined	3/26/2022, 11:38:59 AM
neha14709	Joined	3/26/2022, 11:27:04 AM
neha14709	Left	3/26/2022, 11:27:23 AM
mitali14738	Joined	3/26/2022, 11:36:13 AM
mitali14738	Left	3/26/2022, 11:36:32 AM

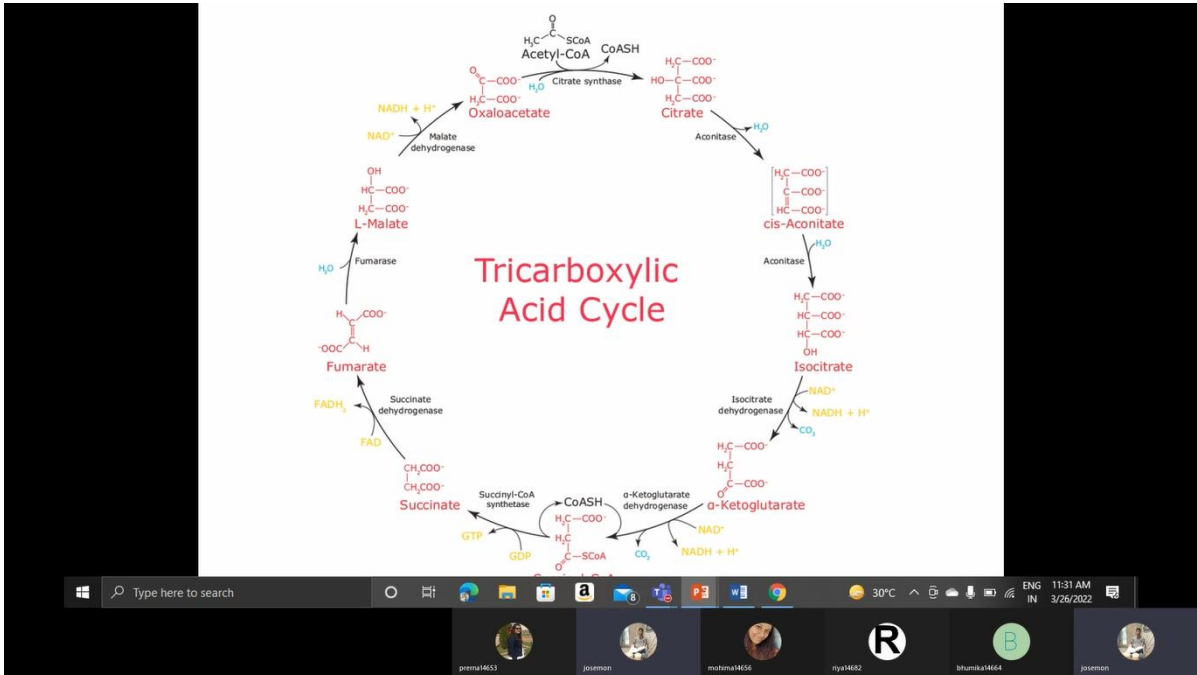
## Products of Transition reaction

- 2 acetyl CoA



- 2 NADH<sub>2</sub>
- 2 CO<sub>2</sub>

Windows taskbar at the bottom of the screen shows the search bar, system tray with temperature (30°C), and time (11:28 AM, 3/26/2022). The taskbar also displays several application icons and user avatars for participants in the session: prerna14653, josemon, mohima14656, riya14682, bhumika14664, and josemon.



RESPIRATION - PowerPoint (Desktop Application Failed)

IQAC MENTORSHIP

11:11

People Chat Reactions Rooms More Camera Mic Share Leave

Slide 26 of 69 English (United States) Notes Comments 65%

Type here to search

11:24 AM IN 3/26/2022