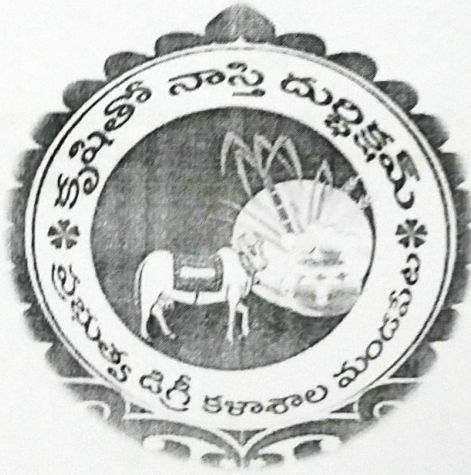


REPORT
on
GUEST LECTURE

Topic: Respiration in Mammals

26-09-2022



Organised by

DEPARTMENT OF ZOOLOGY

From

Date: 25-09-2022

The principal

Government Degree College

Mandapeta

To

The principal

PR Government Degree College

Ravulapalem

Sir,

Sub: Government Degree College Mandapeta – Guest Lecture on “Respiration in Mammals” Request for sparing the service of Smt.A.S.S.Sowjanya Lecturer in Zoology of your College on 26-09-2022-reg.

<<<>>

I would like to bring your kind notice that we propose to organise a Guest lecture on “Respiration in Mammals” on 26-09-2022. In this context I request you to depute Smt.A.S.S.Sowjanya Lecturer in Zoology of your College on 26-09-2022.

Thanking you Sir


Your Sincerely

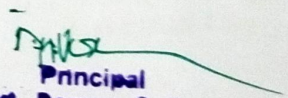
Copy to

Smt.A.S.S.Sowjanya

Lecturer in Zoology

GDC Ravulapalem.


IQAC Coordinator.
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MANDAPETA.


Principal
Govt. Degree College
MANDAPETA - 533308



GOVERNMENT DEGREE COLLEGE

located in B.B. Amboli, Rajamahendravaram Dist, A.P.

Accredited with NAAC 'B' Grade


(Affiliated to Adikavi Nannaya University, Rajamahendravaram)
www.demandapeta.ac.in jkerjyee.demandapet@gmail.com

Date: 26-09-2022


ATTENDANCE CERTIFICATE

This is to certify that Smt. A.S.S SOWJANYA, Lecturer in Zoology, Government Degree College Ravulapalem has attended in our college on 26-09-2022 and delivered Guest Lecture on "Respiration in Mammals" for II B.Sc students of this college.

PRINCIPAL


IQAC Coordinator
GOVERNMENT DEGREE COLLEGE
MANDAPETA.



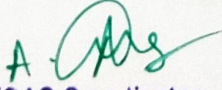

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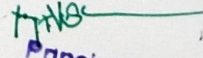
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AIMS AND OBJECTIVES OF THE PROGRAMME

Learning Objectives:

- **Oxygen Supply:** The primary goal of respiration is to provide a continuous supply of oxygen (O_2) to the cells and tissues. Oxygen is essential for cellular respiration, the process by which cells produce energy (ATP) from nutrients.
- **Carbon Dioxide Removal:** Respiration also helps in removing carbon dioxide (CO_2), a metabolic waste product of cellular respiration, from the bloodstream. CO_2 removal is crucial for maintaining the acid-base balance (pH) in the body.
- **Acid-Base Balance:** By regulating the levels of CO_2 , respiration helps maintain the blood pH within a narrow range (typically around 7.35-7.45). This balance is vital for proper enzymatic functions and overall metabolic processes.
- **Thermoregulation:** Breathing plays a role in regulating body temperature. In mammals, the process of breathing out (exhalation) helps to release heat generated by metabolic processes.
- **Voice Production:** In many mammals, respiration is involved in voice production. The flow of air through the vocal cords in the larynx (voice box) allows for sound production and communication.
- **Défense Mechanism:** The respiratory system helps protect the body from inhaled pathogens and particulate matter. The mucociliary escalator, consisting of mucus and cilia, traps and removes foreign particles and microbes from the respiratory tract.


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- **Gas Exchange Efficiency:** Respiration ensures efficient gas exchange by optimizing the exchange of oxygen and carbon dioxide between the alveoli in the lungs and the blood.
- This efficiency is crucial for meeting the metabolic demands of the body.

Learning Outcomes:

- **Understand the Basic Anatomy of the Respiratory System:**

Identify and describe the main components of the mammalian respiratory system, including the nasal cavity, pharynx, larynx, trachea, bronchi, bronchioles, and alveoli.

Explain the structure and function of each component in the context of resp

- **Explain the Mechanics of Breathing:**

Describe the process of ventilation, including the role of the diaphragm and intercostal muscles in inhalation and exhalation.

Understand the concepts of tidal volume, inspiratory reserve volume, and expiratory reserve volume.

- **Describe Gas Exchange and Transport:**

Explain the process of gas exchange that occurs in the alveoli and how oxygen and carbon dioxide are transported in the blood.

Understand the roles of haemoglobin and plasma in oxygen and carbon dioxide transport.

DETAILS OF THE GUEST AND SYNOPSIS OF THE LECTURE

NAME: A.S.S SOWJANYA

OCCUPATION : Lecturer in Zoology in GDC RAVULAPLEM

1. Introduction: Respiration in mammals is a critical physiological process involving the exchange of gases—oxygen (O_2) and carbon dioxide (CO_2)—between the environment and the body's cells. This process supports cellular metabolism, maintains homeostasis, and facilitates various bodily functions.

2. Anatomy of the Respiratory System:

Upper Respiratory Tract: Includes the nasal cavity, pharynx, and larynx. It functions to filter, warm, and humidify incoming air.

Lower Respiratory Tract: Consists of the trachea, bronchi, bronchioles, and alveoli. The trachea branches into the bronchi, which further divide into smaller bronchioles leading to the alveoli, where gas exchange occurs.

Mechanics of Breathing:

Inhalation: The diaphragm and intercostal muscles contract, expanding the thoracic cavity and creating a negative pressure that draws air into the lungs.

Exhalation: The diaphragm and intercostal muscles relax, the thoracic cavity decreases in volume, and air is expelled from the lungs.

4. Gas Exchange:

At the Alveoli: Oxygen diffuses from the alveoli into the blood, while carbon dioxide diffuses from the blood into the alveoli.

In the Bloodstream: Oxygen binds to hemoglobin in red blood cells for transport to tissues, while carbon dioxide is transported either as bicarbonate ions or bound to hemoglobin.

5. Regulation of Respiration:

Central Regulation: The medulla oblongata and pons in the brainstem regulate the rate and depth of breathing based on CO_2 levels, pH, and O_2 levels in the blood.

Peripheral Regulation: Chemoreceptors in the carotid arteries and aorta monitor blood gas levels and send signals to adjust respiratory activity.

6. Functions of Respiration:

Oxygen Supply: Delivers oxygen to tissues for cellular respiration and energy production.

Carbon Dioxide Removal: Eliminates CO_2 , a metabolic waste product, to maintain acid-base balance.

Acid-Base Balance: Helps regulate blood pH by adjusting CO_2 levels.

Thermoregulation: Assists in temperature regulation through heat loss during exhalation.

Voice Production: Facilitates sound generation through the vocal cords.

7. Common Respiratory Disorders:

Asthma: Characterized by inflammation and constriction of the airways, leading to difficulty breathing.

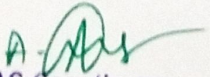
Chronic Obstructive Pulmonary Disease (COPD): Includes conditions like emphysema and chronic bronchitis, causing long-term airflow obstruction.

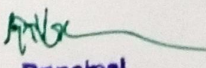
Pneumonia: An infection leading to inflammation of the alveoli, affecting gas exchange.

8. Conclusion: Respiration in mammals is an intricate process that is vital for sustaining life. It involves a coordinated system of anatomical structures and physiological mechanisms that ensure effective gas exchange, regulation of blood pH, and overall homeostasis. Understanding the details of respiration helps in diagnosing and managing respiratory disorders and highlights the importance of maintaining respiratory health.

REPORT OF THE PROGRAMME

The Departments of Zoology are conducted one Guest Lecture on "Respiration in Mammals" dated 26th sep, 2022 in GDC, Mandapeta. The program was started at 11:00 am in Zoology Class Room. Special Chief guest Smt A.S.S Sowjanya. Principal and President of the programme Sri Dr.T.K.V. Srinivasa Rao sir and Vice Principal sir and Head of the department Sri


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A. Ananda Rao Lecturer in Zoology, Sri CH. Abhinay, Lecturer in Botany and all B.Sc BZC Students participated in this programme.

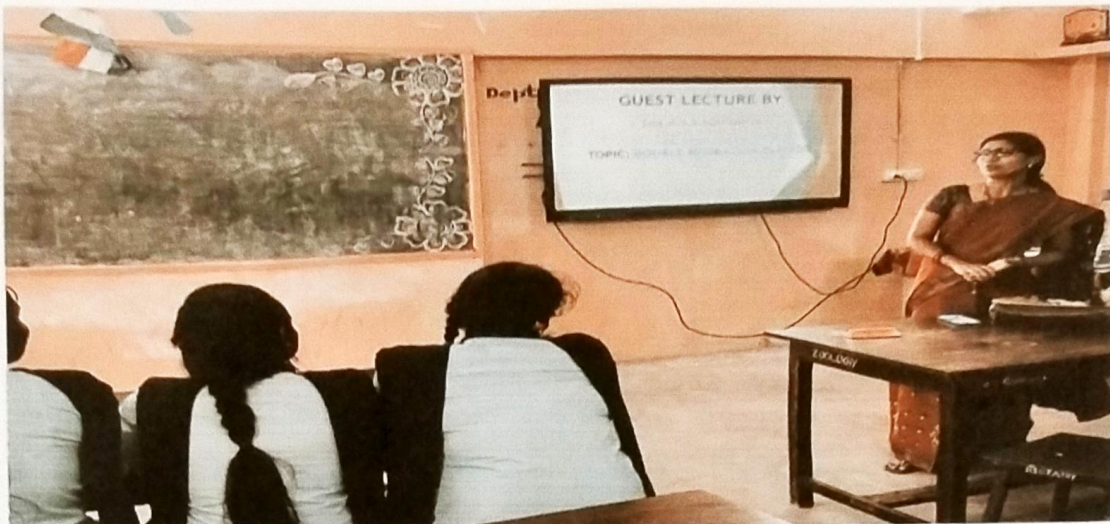
Principal and President of the programme Sri Dr.T.K.V. Srinivasa Rao sir welcome wishes and details of the Program . Vice Principal A. Ananda Rao gave a short message to the students about the importance of Respiration in mammals.. Sri CH. Abhinay, Lecturer in Botany explain brief details of the program and introduce our Special Chief guest Smt A.S.S.Sowjanya, ,Lecturer in Zoology in GDC Ravulapalem. Taxonomy. All Dignitaries and Students are felicitating to Special Chief guest Sri K. Shiva Prasad Varma.

Finally vote of thanks was given by Sri Abhinay Chapala to all the members for participating in this program and Chif guest of this Guest lecture Smt A.S.S.Sowjanya. Later interact with the students. All Students are so Inspired this Programme and particularly Biology students are heartul thanks and also requested to beloved principal sir we are so inspired by the Guest and please conduct many more programmes like this.

PHOTOGRAPHS



Guest Lecture by Smt.A.S.S.Sowjanya Lecturer in Zoology GDC Ravulapalem.



To felicitate honorable chief guest

A. R. S.
 IQAC Coordinator,
 GOVERNMENT DEGREE COLLEGE
 MANDAPETA.

T. R. K.
 Principal
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Group photo with Chief Guest


SIGNATURES OF THE STUDENTS:

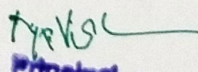
S.No	NAME OF THE STUDENT	CLASS	SIGNATURE
1	BADUGU SANDHYA		B. Sandhya
2	DEVAGALLA RAMYA VIGNESWARI		Devagalla Vigneswari
3	GANESHULA PARVATHI DEVI		G. Parvathi devi
4	GUNTURU SANDHAYA		G. Sandhaya
5	MEDISETTI SRI KAVYA		M. Sri Kavya
6	NILLA RAMESH		N. Ramesh
7	PYKETI MADHAVI SUNUTHA DEVI		P. Madhavi Sunutha Devi
8	SURAMPUDI GAYATRI		S. Gayatri
9	VALLURI RANI		V. Rani
10	D.SREE RAMYA		D. Sree Ramya

A. [Signature]
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11	D. BALA MANIKANTA		D. Bala manikanta
12	G. NAGA SANJAY		G. Naga Sanjay
13	G. PAUL SUDHAKAR BABU		G. Paul Sudhakar Babu
14	P. FLORENCE		P. Florence
15	P. RAJEEV		P. Rajeev
16	R. GOWTHAMI		R. Gowthami
17	T. REVATHI		T. Revathi
18	U. SATYA DURGA		U. Satya Durga
19	V. KONDABABU		V. Kondababu
20	Y. ISWARYA		Y. Iswarya


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