

WEEK 4 OF

SPRING 2021

FIRST YEAR STUDIES OVERVIEW

17th March To 4th April 2021

Dr. Atharuddin Kazi | **Dean**
MPT (Cardio- Respiratory Sciences)



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**BHAUSAHEB MULAK
PHYSIOTHERAPY COLLEGE**

PARENT NOTE

Dear Parents,

*We believe that **BHAUSAHEB MULAK PHYSIOTHERAPY COLLEGE** is a Community built together by its people of which the core is its students and the parents. As we progress into week 4 of the 1st Academic Year attached is a quick glimpse of the work that the students are achieving with the academic mentors.*

Regards

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PREAMBLE

Physiotherapy or Physical Therapy (P.T.) is a Movement Science with an established theoretical and scientific base and widespread clinical applications in the Prevention, Restoration & Rehabilitation, Maintenance and Promotion of optimal physical function. Physiotherapists diagnose and manage movement dysfunction and enhance physical and functional abilities. This physical dysfunction may be the sequelae of involvement of any of the systems like Musculoskeletal, Neurological, Cardiovascular, Respiratory or other body systems.



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FRAMEWORK OF THE CURRICULUM

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COURSE DURATION:

Four years and Six months of Internship.

IB.P.Th.

a. Deals with the basic foundation in medical as well as physiotherapy subjects. The foundation of human body structure & function & energy utilization is achieved by studying the subjects Human Anatomy, Physiology, and Biochemistry.

b. Students knowledge of Physics i.e. – Mechanics, Electricity, Water , Sound & Light is recalled to apply it on human body in understanding movements and the various physiotherapeutic modalities under the subject of Fundamentals of Electrotherapy & Fundamentals of Kinesiology & Kinesiotherapy



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FACULTY DETAILS



Name : Dr. Shaima Farheen Mohammad Saleem
Qualification : MPT - Ortho (Musculoskeletal & Sports)
Designation : Assistant Prof.

SUBJECT: FUNDAMENTALS OF ELECTROTHERAPY

Didactic 95 hrs+ Practical 105hrs [TOTAL-200HRS]

COURSE DESCRIPTION:

This course will cover the basic principles of Physics that are applicable in medical equipments used in Physiotherapy. It will also help to understand the fundamentals of currents, sound waves, Heat & its effects, electromedical radiations and their effects as well as their application in physical therapy. It covers the skill of application of superficial thermal agents and Cryotherapy.



TOPIC	DIDACTIC HOURS	TOTAL HOURS
A.Magnetism: a) Nature and Types b) Molecular theory of Magnetism c) Property of Magnet d) Magnetic effect of electric current – Electro Magnets e) Meters for measuring A.C.	2	2
B. Electro Magnetic Spectrum 5 - 5 i. Laws of transmission Reflection – Refraction Absorption – Attenuation ii. Electro Magnetic Radiation iii. Laws Governing E.M.R. iv. Laws of Reflection, Refraction, Absorption, Attenuation, Cosine Law, Inverse Square Law, Grothus Law	5	5
C. Static Electricity: a) Theory of Electricity b) Production of Electric Charge c) Characteristics of charged electrical body and capacitor and inductance: types & uses d) Potential difference	3	3
D.Current electricity a) EMF b) Resistance: Combination of resistance in series and parallel c) Ohms Law d) D.C., A.C. e) Devices for regulating current: Identification, functioning & Uses Rheostat, Potentiometer, Ammeters, Oscilloscopes, Voltmeter f) Voltage and Power g) Thermal effects of electric current Joule's Law.	6	12



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TOPIC	DIDACTIC HOURS	TOTAL HOURS
E. Electrical Skin Resistance: a) Skin Resistance b) Factors affecting Skin resistance: types of electrodes used, electrode gels, skin threshold, skin type, skin temperature, exercises c) Methods to reduce skin resistance	2	2
F. Electro Magnetic Induction: a) Production b) Direction of induced EMF c) Strength of induced EMF d) Type – Self & Mutual induction e) Inductive Reactance f) Eddy currents	3	3
G. Basic Physics: Structure of atom, Isotopes, States of matter; Compound formation-(covalent formation), Properties of Electric lines of forces, Conductors, Non-conductors, Latent heat, Transmission of heat	3	3
H. Condenser a) Principles b) Capacity c) Types & construction d) Electric field e) Charging and discharging of the condenser f) Duration of Discharge g) Discharge through inductance h) Capacitive reactance & uses of condenser	3	3

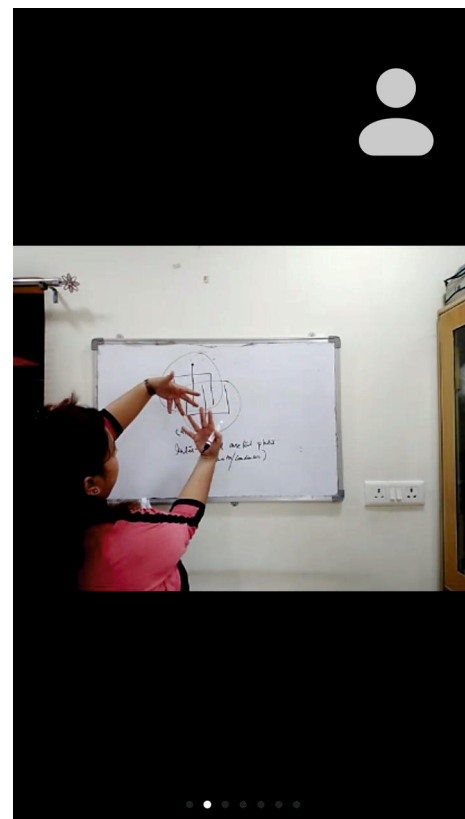
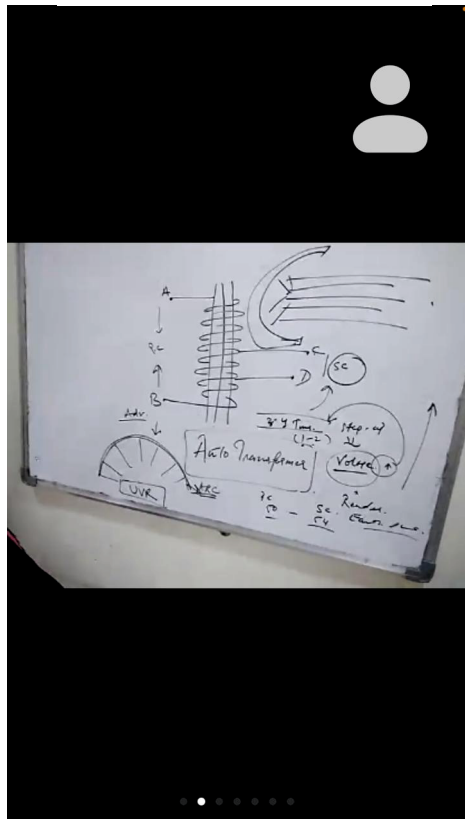
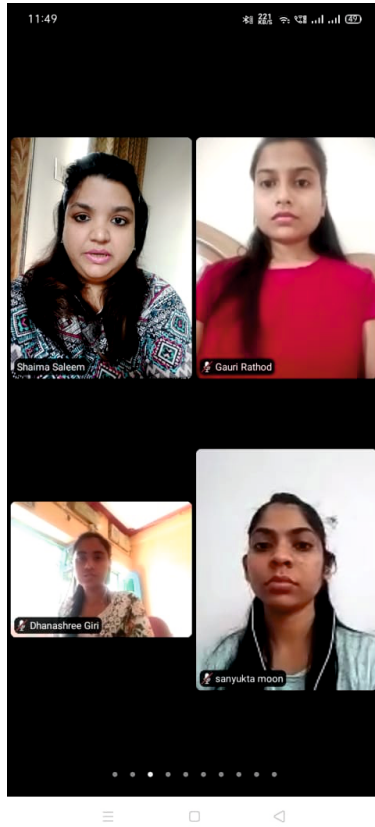


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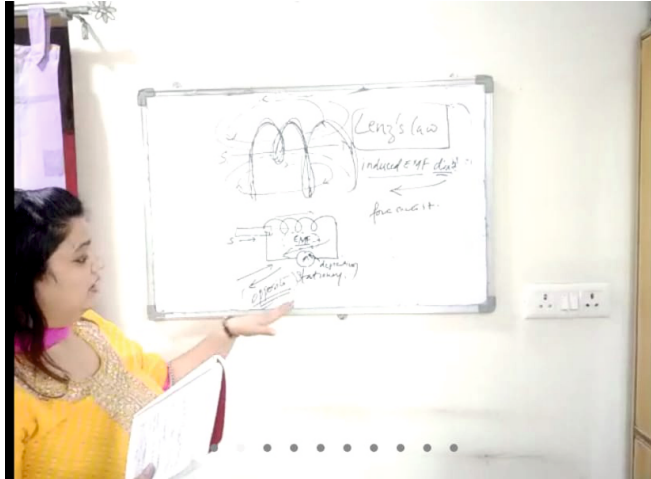


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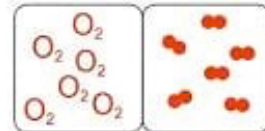
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Elements

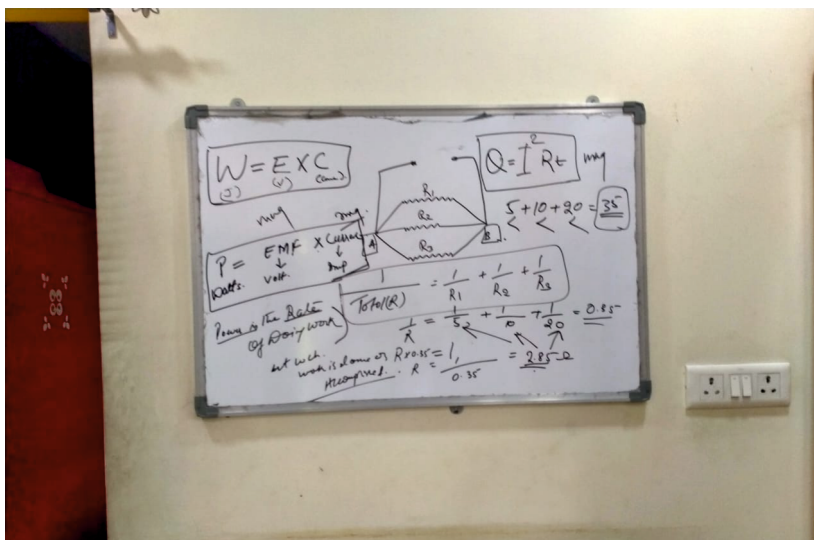
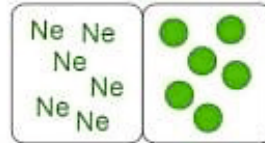
Elements are composed of **only 1 type of atom**.

Example #1

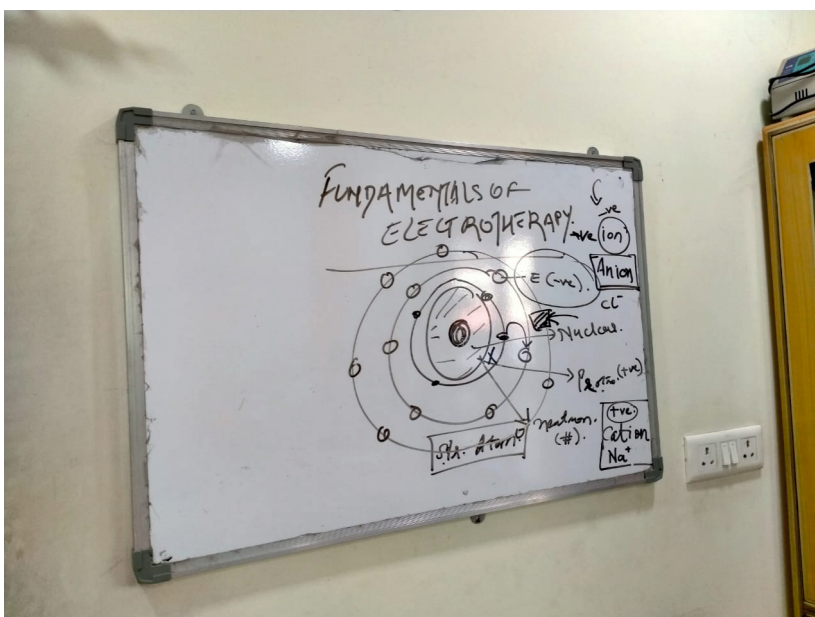
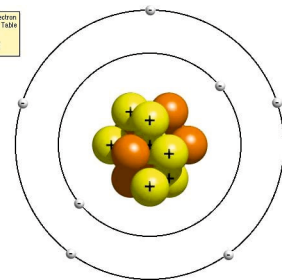


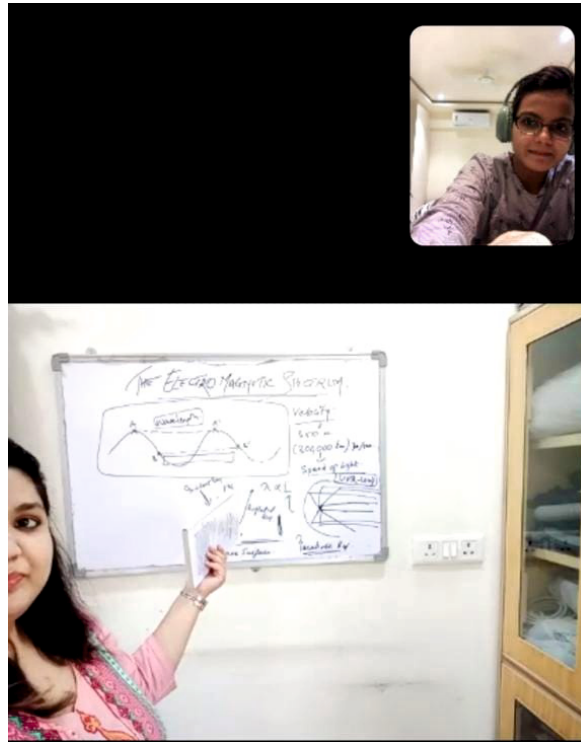
Notice that two oxygen atoms are bonded (stuck) together. But there is still only 1 type: Oxygen.

Example #2



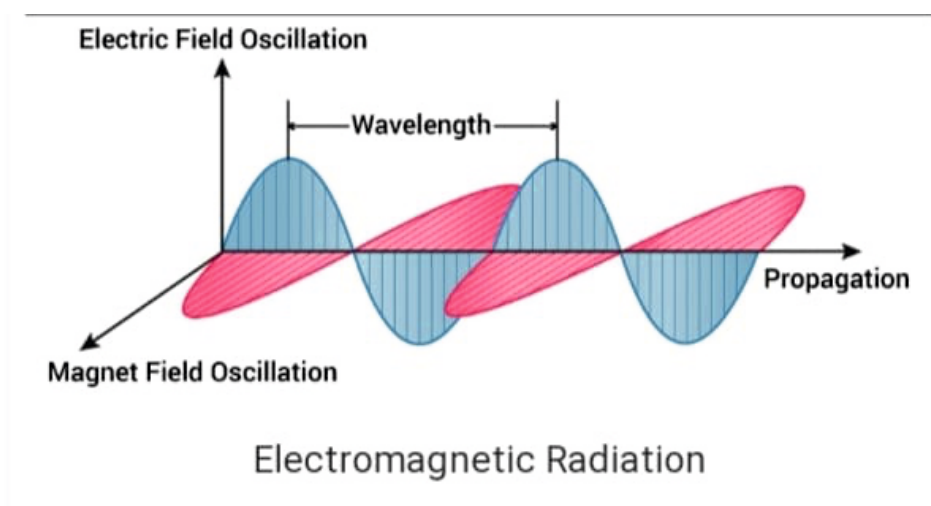
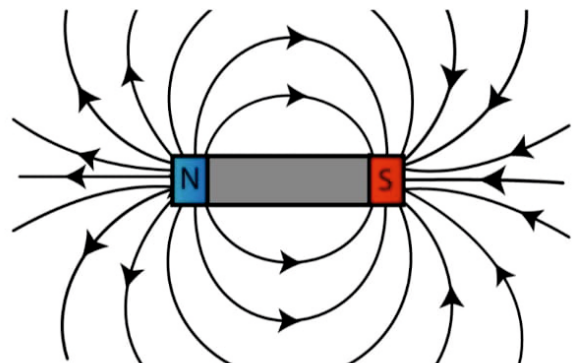
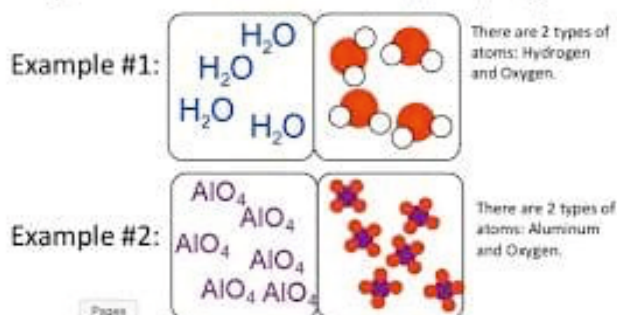
Nitrogen's Electron Configuration Table





Compound

- Compounds are composed of **more than 1 type of atom** that are bonded (stuck) together



FACULTY DETAILS



Name : Dr. Parveen Pathan
Qualification : MPTTh (Neuro)
Designation : Assistant Prof.

SUBJECT: FUNDAMENTALS OF KINESIOLOGY & KINESIOTHERAPY

(Didactic – 100 Hrs & Practical / Laboratory – 150 Hrs) TOTAL 250 HRS

COURSE DESCRIPTION:

This course covers the definition of various terms used in mechanics, biomechanics kinesiology as well as its importance in physical therapy. It applies the mechanical principles to simple equipments of therapeutic gymnasium and familiarizes the candidate to its use. It covers the types of human motions as well as planes and relative axes of motion. It also explains the inter-relationship among kinematic variables and utilizes this knowledge to describe and analyze motion. It covers the classification of the joints and muscles along their distinguishing characteristics and skill of measurement of its ranges in various planes and axes. This course additionally covers therapeutic principles and skills of application of massage, yoga, aerobic exercise and use of suspension therapy. It also enhances the skill of evaluation of vital parameters & sensory system.

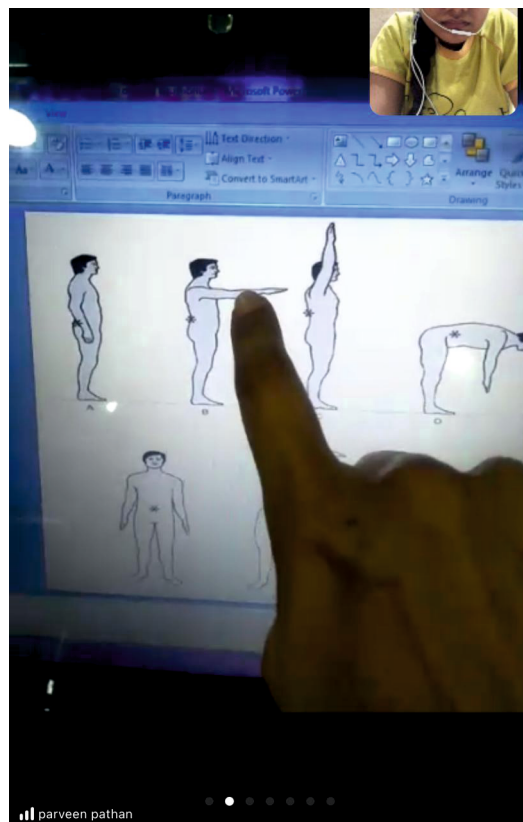
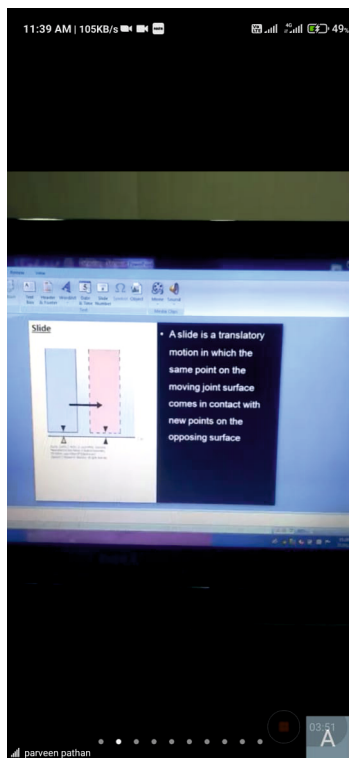
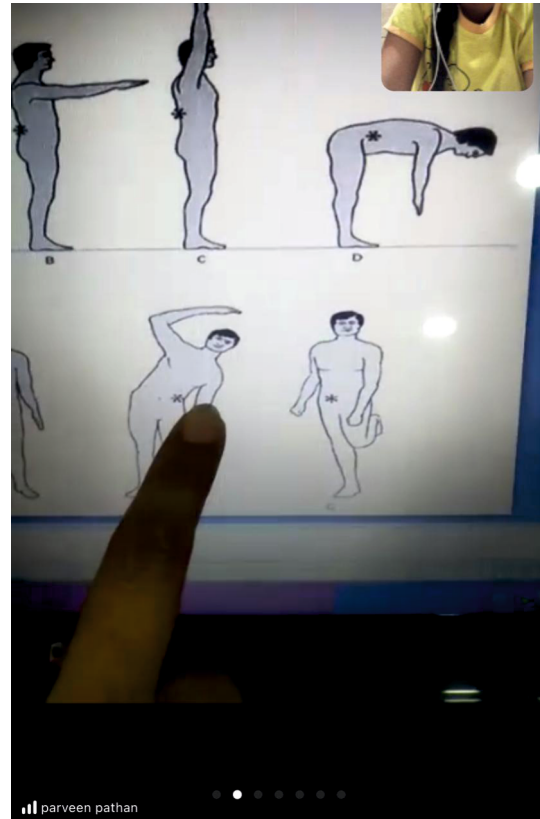
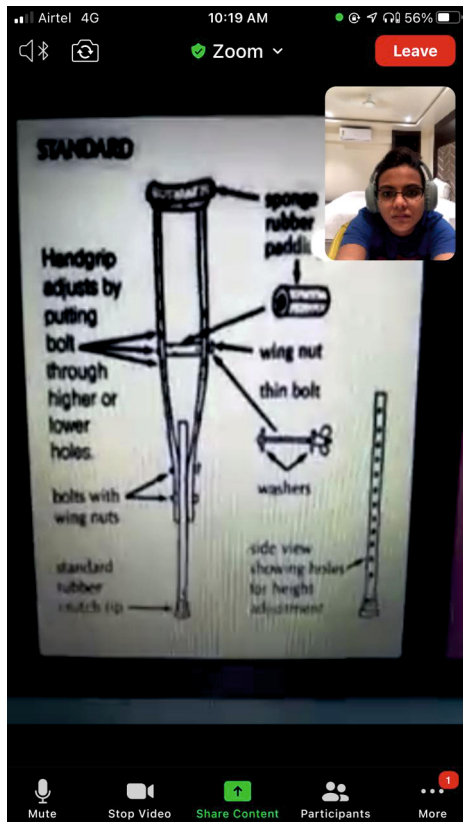


TOPIC	DIDACTIC HOURS	TOTAL HOURS
a. Mechanics & Application to human body i. Definition and terminologies: Mechanics (Statics & Dynamics), Biomechanics, Kinetics, Kinematics (Osteokinematics, Arthrokinematics, Open Chain & Closed Chain kinematics) ii. Axes / planes, iii. Laws of inertia & motion, iv. Gravity, C.O.G., L.O.G. and B.O.S. v. Equilibrium – Types and affecting factors vi. Mechanics of Forces Work, Energy, Power, Friction, Momentum, Parallelogram of Forces vii. Torque viii. Pendulum ix. Mechanical and Anatomical pulleys x. Levers xi. Fluid mechanics related to Hydrotherapy (physics, statics & dynamics)	20	20
b. Therapeutic Gymnasium i. Use of accessories such as Pulleys Springs, Shoulder wheel, Walking aids, ii. Finger ladder, Therapeutic balls, Weights, Resistance bands, tubes, & wands iii. Applied mechanics of all above accessories	5	10



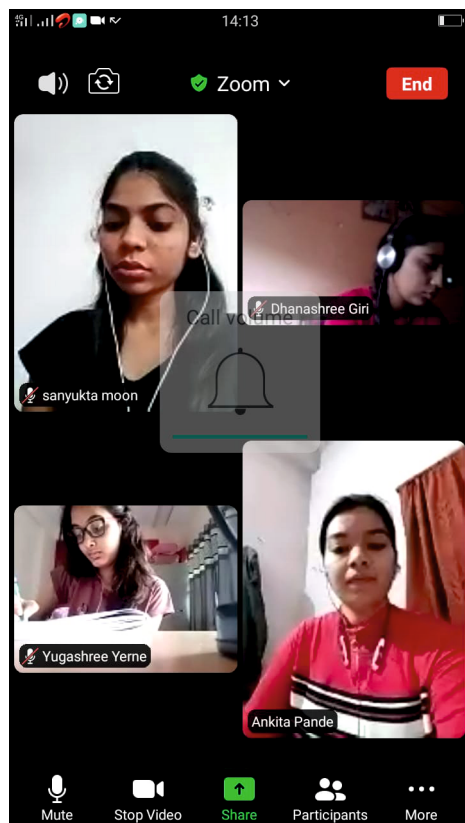
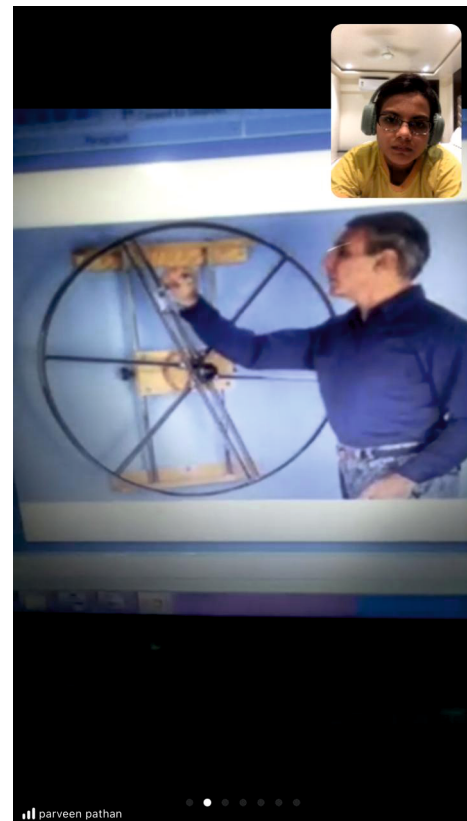
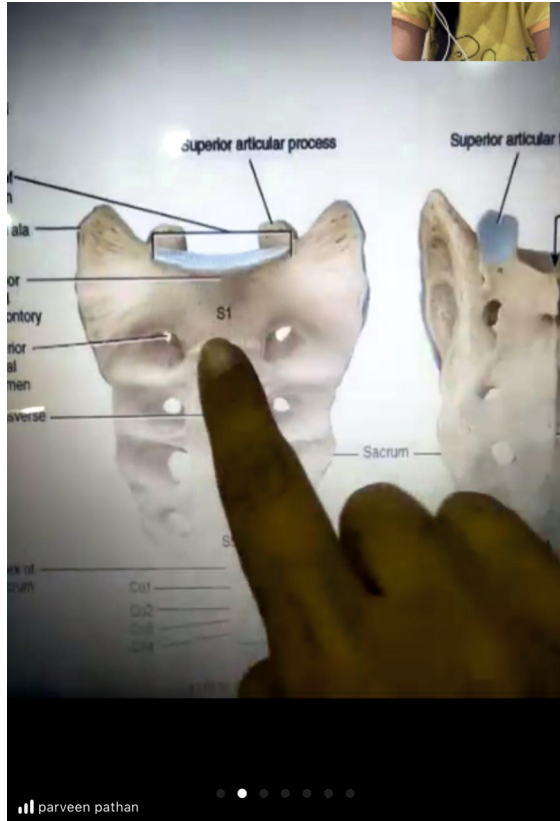


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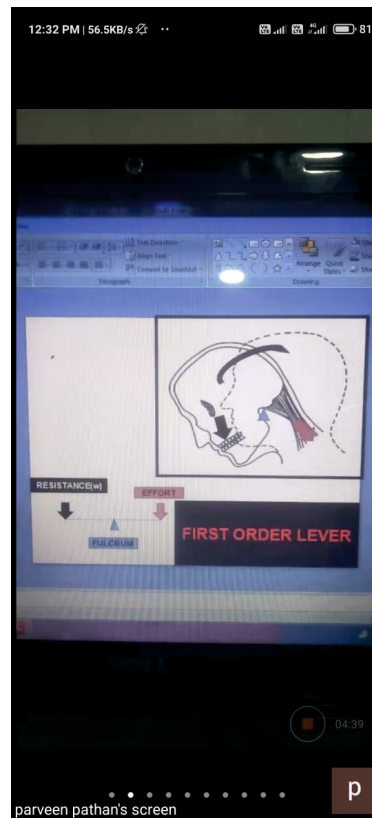
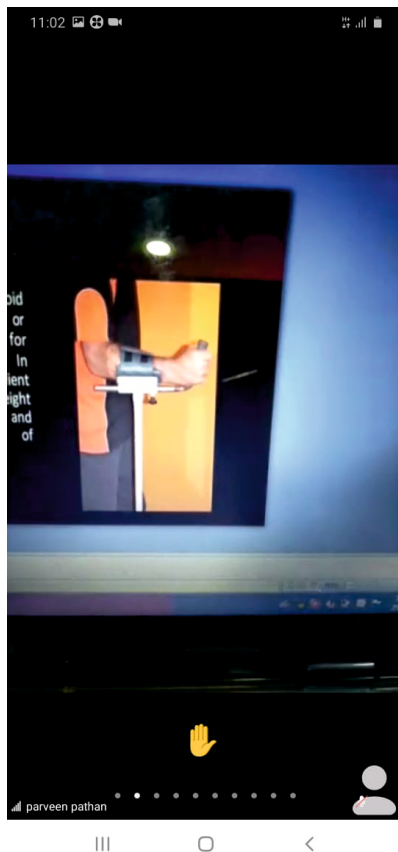
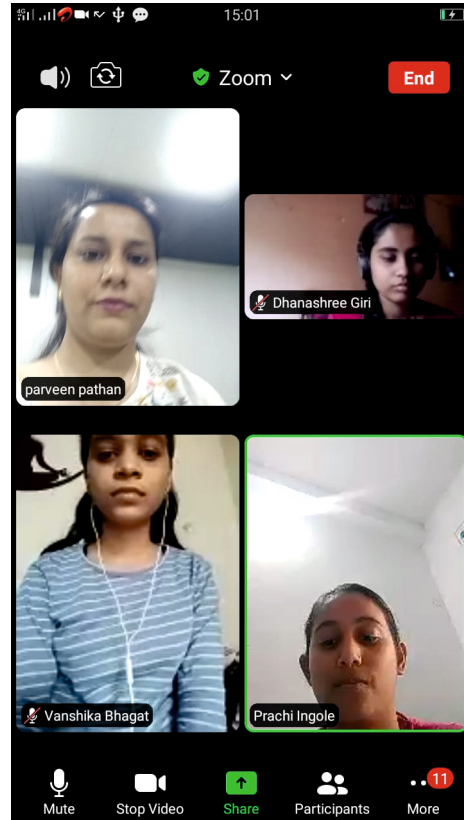
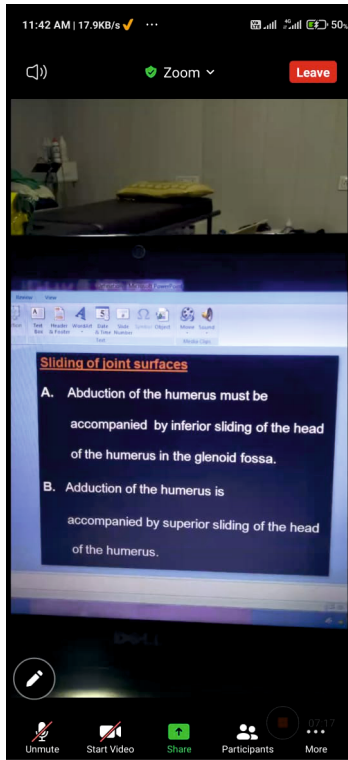


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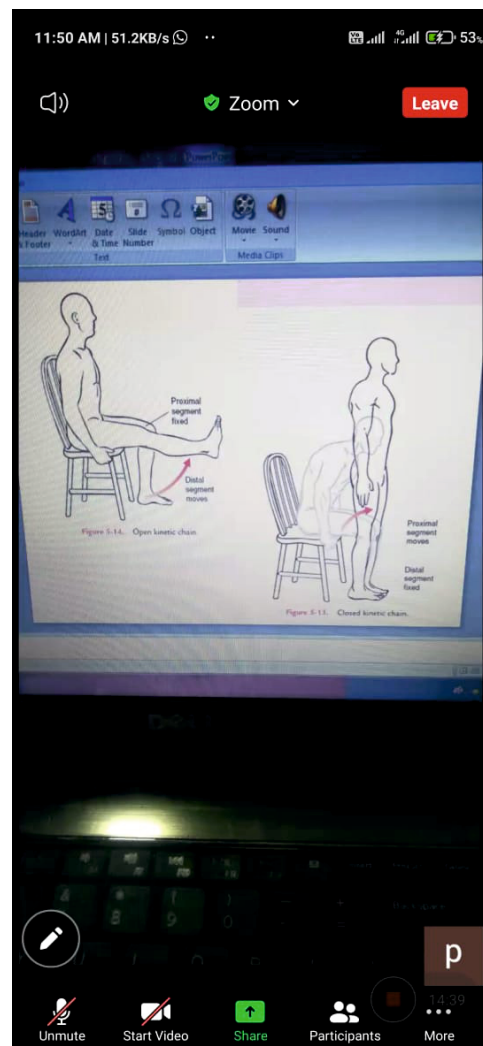
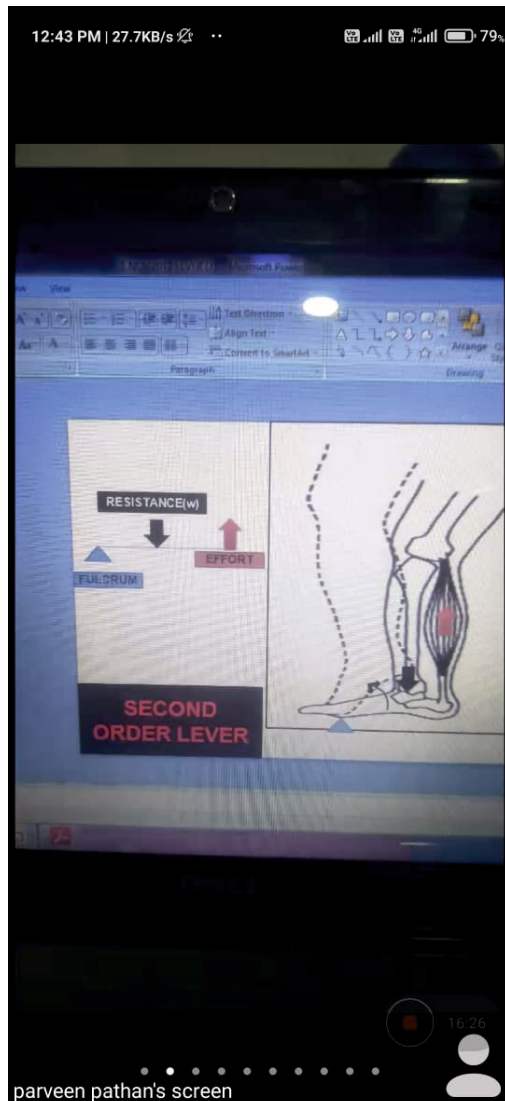


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**IT'S NOT JUST WHAT YOU
ACHIEVE BUT ALSO WHAT
YOU OVERCOME.
THAT'S WHAT DEFINES
YOUR CAREER.**



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