# YEAR 13 A/ B –PHYSICS

**WEEK 4 (20<sup>th</sup> Sept to 24<sup>th</sup> Sept) 3** lessons for both batches

**Work sent to the students through:** Google classroom / Zoom Learning Platform

**Topic: Circular Motion**

| Date | Class | Lesson | Lesson objectives & Learning outcome | Mode of teaching | |
|------|-------|--------|--------------------------------------|------------------|---|
| 21<sup>st</sup> Sept Monday<br><br><br><br>22<sup>nd</sup> Sept Tuesday | **13 B**<br><br><br><br>**13 A** | 6<br><br><br><br>4 | **Learning objectives**: Introduce the radian, Describe Angular displacement, angular velocity and instantaneous velocity<br><br>Demonstrate & Discuss what is meant by circular motion<br>**Learning outcomes-**Express angular displacement in radians and in degrees.<br>Explain the concept of angular velocity<br>**Recognise and use the relationships v = ωr and T = 2π/ω**<br>Realise that a force perpendicular to the velocity of an object will make the object describe a circular path | **Zoom** | Teacher uses power point presentation and breakout sessions for students to collaborate and attain the objectives. |
| **21<sup>st</sup>**Sept Monday<br><br><br><br>24<sup>th</sup> Sept Thursday | **13 B**<br><br><br><br>**13 A** | 7<br><br><br><br>1 | **Learning objectives**:<br>Explain what is meant by centripetal acceleration and centripetal force<br><br><br>**Learning Outcomes** :<br><br>Define centripetal acceleration<br>Explain that a centripetal force is required to produce and maintain circular motion<br>Derive the equation for centripetal acceleration $a = v^2 /r = r\omega^2$<br>**Select and apply the equations for speed** | **Zoom** | Teacher uses power point presentation and breakout sessions for students to collaborate and attain the objectives. |

| | | | $v = 2\pi r/T$ and centripetal acceleration $a = v^2/r = r\omega^2$ | | |
|---|---|---|---|---|---|
| 23rd Sept Wednesday | **13 B** | 3 | **Learning objectives**: Select and apply the equation for centripetal force $F = ma = mv^2/r = mr\omega^2$ | **Zoom** | Teacher uses Google Classroom and breakout sessions in Zoom for students to collaborate and attain the objectives. |
| 24th Sept Thursday | **13 A** | 2 | **Apply the principles of circular motion to orbital motion of electrons, planets, amusement park rides etc.** Use the given worksheet to solve numerical problems. use the equations for centripetal force. | | |

# YEAR 13 A/ B –PHYSICS

**WEEK 4 (20th Sept to 24th Sept) -** 3 lessons for both batches

**Work sent to the students through:** Whatsapp group / Google classroom / Zoom Learning Platform

**Topic: -** Electric fields.

**Resources:** Student text book, interactive power point, Board works and online

| Date | Lesson | Lesson objectives & Learning outcome | Mode of teaching | |
|---|---|---|---|---|
| 21st Sept Monday - **13 A** 22nd Sept Tuesday - **13 B** | 1 6 | **L.O –** Describes acceleration of electron beams by electric fields and discuss the energy transfers. **Learning outcomes-** • Explain how charged particles can be accelerated by electric fields. • Realise that the path of a charged particle in uniform electric field is parabolic. • Derive expressions for the speed of the particle, deflection and the time spent in the electric field. | **Zoom** | Teacher uses power point presentation to explain the concepts and guide students through the process. |
| 21st Sept | 2 | **L.O –** Understand the relation between electric field and electric potential | | |

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|---|---|---|---|---|
| Monday - **13 A**<br><br>24th Sept Thursday - **13 B** | 3 | Use $V = Q/(4\pi\varepsilon_0 r)$ for a radial field<br><br>**Learning outcomes-**<br>• Define potential at a point as the work done per unit positive charge in bringing a small test charge from infinity to the point.<br>• State that the field strength of the field at a point is equal to the negative of potential gradient at that point.<br>• Use the equation $V = Q/(4\pi\varepsilon_0 r)$ for the potential in the field of a point charge. | **Zoom** | Teacher uses boardworks & power point presentation to explain the concepts and students to solve problems involving electric potential in a radial field. |
| 22nd Sept Tuesday - **13 A**<br><br>24**th** Sept Thursday - **13 B** | 5<br><br><br><br>4 | **L.O** – Draw and interpret diagrams using field lines and equipotentials to describe radial and uniform electric fields.<br><br>**Learning outcomes-**<br>• Define equipotentials and describe an experiment to investigate equipotentials.<br>• Sketch the equipotentials between two parallel plates and radial field. | **Zoom** | AFL – 10 marks MCQ in google forms<br><br>Students draw and interpret the equipotentials for radial and uniform electric fields. |

**Homework :**   Solve worksheet file questions – Electric Fields