# Al-Saudia Virtual Academy
# Pakistan Online Tuition – Online Tutor Pakistan
## X Physics Notes Karachi and Federal Board

### Introduction

**Q.1. what is Science? How many branches of Science are?**

Ans: **Science:**
The world Science means to Know. In other words, to consider, to observe, to calculate the result and to done experiment on any substance in the universe is called science.
Or
The observation, identification, description, experiment, investigation and theoretical explanation of phenomena are called science. **In short knowledge gained through experience is called Science.**
The following natural phenomena's give us the knowledge of science.

1. Color in rainbow
2. Dropping of an apple from tree
3. Rusting of iron
4. Growing of plants
5. Motion of bodies
6. Formation of the solar system.

**BRANCHES OF SCIENCE:**
Basically, science consists of two main branches.
1. Biological Science
2. Physical Science

**Q.2. Define Physics. Write down the name of its branches.**

Ans: **Physics:**

The branch of physical science in which we discuss interaction between Matter and Energy is called Physics. It is an experimental science, which mostly depends upon "Experimental observation" as well as quantitative measurement.

**BRANCHES OF PHYSICS:**

- **MECHANICS:** In this branch, we study about the forces which are acting on matter as well as the motion and rest of body.
- **ELECTRICITY:** In this branch, we study about the motion and rest of electric charge.
- **ELECTROMAGNETISM:** We study and observe the laws of electrostatic and magnetism, in Electromagnetism.
- **SOLID STATE PHYSICS**: Study about crystalline solid in which atoms are arranged in three dimensions is called Solid State Physics.
- **ATOMIC PHYSICS:** Atomic Physics refers to study about structure, properties and behavior of electron.
- **NUCLEAR PHYSICS:** In this branch we study about structure and properties of Nucleus as well as the reaction between the Nuclei of atoms.

**Q.3. Write down the name of Modern branches of Physics?**

Ans:

The modern branches of Physics are as follows:

- Electronics
- Solid State Physics
- Bio-Physics
- Geo-Physics
- Astrophysics
- Condense Matter Physics

**Q.4. Write a note about the history of Physics?**

Ans: **HISTORY OF PHYSICS:** The history of Physics is as old as the history of man, even the cave man was aware of the production of fire by rubbing two stones together. The Chinese for the time manufacture paper. Egyptian used to measure the flood level in the river Nile. The people of Indus Valley were the pioneers of decimal system. The history of physics is about 5000 years old. History of Physics consists of three periods.

**INITIAL PERIOD:** This period is called Greek Period which remained 9th century; the Greeks are accepted as pioneers in the development of Physics as a systematic knowledge. The name of famous scientists of this period is:

- Pythagoras
- Archimedes
- Euclid
- Ptolemy

**GOLDEN PERIOD:** This period from 9th century to 13th century. This period is called Muslim period in which they rule as a scientist in whole world. Famous scientists were:

- Jabber Bin Hayyan
- Muhammad Bin Moosa Khwarizmi
- Al-Razi
- Yaqoob Al-Kundi
- Al-Beruni
- Umer Khayyam
- Ibn-Al-Haitham

**MODERN PERIOD:** This period is started from 13th century and still continued. This period was initiated after the declination of Muslims. The other name of this era is "European period". The famous scientist was:

- Albert Einstein
- Michal Faraday
- Sir Isaac Newton
- Graham Bell
- Madam Marie Quire
- Dr. Abdul Salam
- Rutherford
- Moseley

**Q.5. Write a note on the Importance of Physics?**

Ans: **IMPORTANCE OF PHYSICS**

Physics is the essential of daily life and technology as: Radio, Radar, artificial satellite, Hydrostatic power stations, Nuclear Reactor, Diesel Engine, firm reactor and Computer etc., they belong to daily life as well as technology. The electric power used for domestic purposes is only due to change of magnetic flux.
Laser used for treatment in medical field and Defense.
Electroplating, Astronomy and Defense are working only due to Physics.
Nuclear Physics is used to produce electric power on a large scale.
Automobile technology works on the base of thermodynamics Physics.
Radar technology works on the principle of reflection and propagation.
In short, this period is totally at rest without Physics.

**Q.6. Write the contributions of Ibn-ul-Haitham?**

Ans:
He wrote the book named "Kitb-ul-Maazir", about the branch of Physics called Optics.
He gave the laws of reflection and refraction.
He explained the luminous, non-luminous transparent and transparent objectives.
He described the different parts of eyes.
According to Ibn-ul-Haitham, when light passes through a medium then it takes minimum time to take its path. This is known as Fermat Principle.
The nature of light is the form of energy according to him.
He explained the refraction of light.
He explained the image formed by concave mirror.

**Q.7. Write the contribution of Al-Beruni? Or In what way Al-Beruni was a versatile Scientist?**

Ans: **Al-Beruni.**

He was the famous scientist of Golden age.
He was a scholar, astronomer, physician, and mathematician.
He wrote more than one hundred and fifty books on Physics, Mathematics and Geography, etc.
His famous book "kitab Ul Qanoon Ul Masoodi" is considered as an encyclopedia of Astronomy.
He discussed the measurement of earth, the shape of the earth, the movement of sun and moon, the phases of the moon and the movement of then known planets in his famous book Qanoon Al Masoodi.
He gave the method of determining the longitude and altitude of a place.
He also determined the densities of the metals.
In the sight of above contribution, Al-Beruni is called Versatile Scientist.

**Q.8. what are the contributions of Yaqoob Kundi?**

Ans: **Yaqoob Kundi.**

He was a famous Arab philosopher.
He has 244 books at his credit.
He gave the idea about specific gravity and Waves.
He worked in the field of optics and explained the appearance of blue color in the sky.
He explained the idea that gold cannot be made from other metals.
He also explained music from scientific point of view by expressing the different notes of music in terms of frequencies.

**Q.9. Write the part of Muhammad-Bin-Moosa Al-Khwarizmi in science?**

Ans: Muhammad-Bin-Moosa Al-Khwarizmi
He was one of greatest scientists of his time.
He was an important member of the great institution of hearing the Bait-ul-Hikmat established by the great Abbasid Caliph Mammon Ur Rashid.
He was the founder of Algebra.
He wrote first book in the world on subject of Algebra name "Al-jab-al-Muqabla".
He also gave analytical solution of linear and quadratic equations.
He introduced the method of counting based on numerals and decimal system which is used all over the world until now.
He was also involved in the measurement of angles.
He simplified the method of addition, subtraction, multiplication and divisions.

**Q.10. Write the contribution of Nasi-ud-din Bin Hassan Tusi?**

Ans.

A great mathematician, astronomer, geographer and astrologer of his time.

His chief contribution was his success in persuading Halaku Khan to issue necessary instructions for the creation of grand observatory and a library.

He prepared very precise and accurate tables about the planetary motion.

**Q.11. Write the contribution of Dr. Abdul Salaam?**

Ans.

A famous Pakistani scientist passed every examination with flying colors.

He got higher education from UK.

He was awarded Noble prize in Physics for his work on Grand Unification theory (GUT).

He established International centre for theoretical Physics at Trieste in Italy.

**Q.12. what branch of Physics do we mean by Electronics?**

Ans: Electronics is the branch of Solid State Physics.

**Q.13. in what areas Laser is used?**

Ans.

It is used in Medicines, like surgery of eyes.

It is used in the accurate cutting of metals.

It is used in communication like space communication.

It is used in scientific research.

It is used as a detector of certain type of air pollution.