

1. NATURE OF SCIENCE

Definition:

Science can be defined as study "Mainly concerned with the phenomenon of physical universe any or all of natural sciences or biological sciences." Or

Science as the "the field of study which attempts to describe and understand the nature of the universe in whole or part."

Science is the faculty to reason out the how and why of the things as they occur in the phenomenal world or the objective world...Basically science is the study of laws of nature and man has developed science by observing. Infact this subject has completely transformed our power over nature and the world outlook. Development of the modern technology is directly the outcome of the development of modern science. Without the scientific revolution the industrial revolution would not have been possible.

It has raised the human activity level by significant observations in the various fields of human existence. Whether it's the

Exploration of human health, industrial progress, agrarian developments and modern communication technologies, the benefits gained from this major subject are enormous. Infact it would not be wrong to say that we are living in the age of science and is a dominant factor in our day to day existence.

2. CONTRIBUTIONS OF MUSLIM SCIENTISTS

Made lasting contributions in the fields of Mathematics, Astronomy, Music, Geography and History. He composed the oldest works on Arithmetic and on Algebra. The oldest Mathematic book composed by him is "Kitab ul jama wat tafriq" He is the first person who used zero and wrote "Hisab ul jabr Wal Muqabla" which is conceived to be an outstanding work on the subject which included analytical solutions of linear and quadratic equations.

In the field of Astronomy he compiled his own tables which formed the basis of later astronomical pursuits in both East and West. He also contributed in the field of geographical science by writing a noteworthy book Kitab ul Surat al ard. In Arabic. His book —kitab al Tarik" is also a memorable work regarding history.

AL BERUNI:

Born in Afghanistan Beruni made original important contributions to science. He is conceived to be the most prominent scientists of the Islamic world who wrote around 150 books on various significant subjects concerning human existence. These subjects include Mathematics, History, Archeology, Biology, Geology, chemistry, Religion etc.

He discussed the behavior of earth, moon, and planets in his book "Qanoon Almasudi" which is also considered as an outstanding astronomical encyclopedia. He also discovered seven different ways of finding the directions of north and south and discovered mathematical techniques to determine exactly the beginning of the seasons.

Another notable discovery he made was that the speed of light is faster than sound. His wide range of scientific knowledge is also revealed through his books "kitab al saidana" and "kitab al jawahar" dealing with medicine and the types of gems their gravity respectively.

He was a prolific writer whose works showed his versatility as a scientist.

AL RAZI:

The famous philosopher and a notable surgeon of the Muslim world, Zakriya Al Razi was born in Ray near modern Thehran Iran. His eagerness for knowledge lead him to the study of Alchemy and Chemistry, philosophy, logic, Mathematics and Physics. He was a pioneer in many areas of medicine and treatment of health sciences in general, and in particular he worked alot in the fields of pediatrics, obstetrics and ophthalmology. Al razi was the first person to introduce the use of Alcohol for medical purposes and opium for the objective of giving anesthesia to his patients.

In the field of ophthalmology too Al razi gave an account of the operation for the extraction of the cataract and also the first cientist to discover the effect of the intensity of light on the eye. The modern studies confirm his understanding on the subject thus making him a great physician of all the times.

ABU ALI IBN E SINA:

Endowed with great powers of absorbing and retaining knowledge this Muslim scholar also made valuable contributions to the field of science. He is considered to be the founders of Medicine and also added his great efforts to the fields of Mathematics, Astronomy, Medicinal Chemistry, Philosophy, Palae ontology and Music.

His most famous book is "Al Qannun" which brings out the features of human physiology and medicine.

Sina is also considered as a father of the science of Geology on account of his invaluable book on mountains in which he discussed matters relating to earth's crust and gave scientific reasons for earthquakes. He is the author of 238 books which are fine instances of his thoughts regarding various subjects in diverse ways.

JABIR BIN HAYAN:

Introduced experimental research in chemical science which immensely added its rapid development and made him the Father of Chemistry. He devised methods for preparation of important chemicals like hydrochloric acid, nitric acid, and white lead.

Jabir's work also deal with the refinement of metals ,preparation of steel, dyeing of cloth and leather, use of magnese dioxide in glass making, distillation of vinegar to concentrate acetic acid.

Jabir also explained scientifically two principle functions of chemistry, i.e., calcinations, and reduction and registered a marked improvement in the methods of evaporation, sublimation, distillation and crystallization.

He wrote more than 100 books which are one of the most outstanding contributions in the field of science especially the chemical science.

ABDUL HASSAN IBN AL HAITHAM:

One of the most outstanding Mathematicians, Physiologists, and Opticians of Islam. He contributed to the realms of medicine and philosophy. He wrote more than 200 scientific works on diverse subjects.

Haitham examined the refraction of light rays through transparent objects including air and water. Infact he was the first scientist to elaborate two laws of reflection of light

He made a number of monumental discoveries in the field of optics, including one which locates retina as the seat of vision. His book on optics "Kitab Al Manazir" vividly shows his grip on the subject.

He constructed a pinhole camera and studied formation of images. Due to his noteworthy contributions he is regarded as one of the prolific Muslim scientists of all times.

OMAR AL KHAYAM:

He was an outstanding Mathematician and Astronomer. He was also known as a poet, philosopher and a physician. He travelled to the great centers of learning of the era i.e. Samrakund, Bukhara, and Ispahan. He classified many algebraic equations based on their complexity and recognized thirteen different forms of cubic equation. He also classified algebraic theories of parallel lines. On the invitation of Sultan Jalal-ud- Din, he introduced the Jilali calendar which has an error of one day in 3770 years. He also developed accurate methods for determination of gravity as a poet too, he is known for his Rubaiyat. He made great contributions in the development of mathematics and analytical geometry which benefitted Europe several years later.

NASIR UD DIN TUSI:

Al Tusi was one of the greatest scientists, Mathematicians, Astronomers, Philosophers, Theologians and physicians of his time. He was a prolific writer and wrote many treatises on varied subjects like Algebra, Arithmetic, Trigonometry, Geometry, Logic, Metaphysics, medicine, ethics and Theology.

He served as a minister of Halaku Khan and persuaded him to establish an observatory and library after the destruction of Baghdad. He worked at the observatory and prepared precise tables regarding the motion of the planets. These are also known as "Tables of Khan"

ZIA UD DIN IBN BAITAR:

Was a famous botanist and pharmacopias of middle ages, Because of his intensive travels, he was able to discover many plant species. He wrote many books regarding his field of specialty and is always considered as a prominent scientist among his Muslim counterparts

3. IMPACT OF SCIENCE ON SOCIETY

Science is the organization of knowledge in such a way that it commands the hidden potential in nature. This hidden potential is surfaced out by the subject of science through the process of understanding. Science has proved to be of enormous beneficial nature. It has made lasting impact on regarding each and every field of human existence. Whether it is concerned with our day to day lives or whether it is related with the various modern developments which have resulted in elevating the living standards of the individuals.

The significant contributions which the study of this subject has made are enumerated below.

SCIENCE AND HUMAN ATTITUDE:

The various noteworthy scientific advances have helped the individuals in raising up of their self confidence. This subject has enabled the human beings to control and modify

their needs and requirements. With greater understanding of the scientific phenomena human beings have now become more confident about the environmental issues as compared to the people in the past. In fact science has promoted and paved the way for the independent and logical thinking.

SCIENCE AND HUMAN HEALTH:

Before the development of modern medicinal factors, a large number of people used to lose their precious lives because of the unavailability of the sources and medicines for a proper health care. With the advancements of science now the human life expectancy rate has increased as the various modern developments in the field of health care has helped in warding off the dangerous diseases...

The revolutions in surgery and medicine the infectious diseases like small pox, malaria, typhoid etc. have been eradicated. Thus science has improved the health standards of the people.

SCIENCE AND TRAVEL:

People used to travel on foot before the inventions of automobiles, aeroplanes and steam engines. They also used animal carts and camels for the purpose of moving from one place to another. However, the modern scientific inventions have proved to be of great significance as it has added speed to the area of travel. The quick means of transportation have decreased the distances and are a source of saving time. In fact it would not be wrong to regard that these inventions have added much peace to the lives of the modern men.

SCIENCE AND COMMUNICATION:

Science has also played a significant part in the development of the modern communication technology. Earlier people were living in isolation because of the slow means of communication. Now the well developed, efficient media have made it possible to communicate with each other more rapidly and quickly. The impact of mass media is enormous. The use of computers and televisions has made the world a global village where an event in one part of the world leaves an influence on the other.

DEMERITS OF SCIENCE:

Every invention of science has got its own merits and demerits. The most serious invention that science has contributed to is the development of the weapons of mass destruction like the atom and nuclear bombs. The recent wars have greatly showed that how much destruction can be brought about with the use of these lethal weapons. In fact these modern inventions of science have resulted in the elevation of the anxiety and unrest in the modern societies.

Another notable demerit which the study of this subject has lead to the rise in the environmental deterioration. Day by day the pollution factor is increasing which has proved to be very toxic and harmful for the human health. Not only the human health it is also proving fatal for the animals as well as the existing plants.

The rapid developments of science and industrialization have also divided the world. The developed and the undeveloped. This division has lead to a widening gap between the status and the living standards of people. There is economic disparity which has also given rise to class distinction.

