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Q1: (a)

Write the contribution of at least 5 muslim scientists in the field of science?

Introduction:

Islam encourage the muslim to pursue knowledge in these verses of Quran: "Are those who know equal to those who do not know" (39:9) these lines emphasizes the importance of knowledge. Muslim of abasid period inspired by these lines and they pursue knowledge. They not only preserved knowledge, rather worked in the field of science. They established the "Bayat-ul-Hikma" means house of wisdom in Bagdad and translated the works of Aristotle, Plato, Hippocrates and others. Along with this, they worked in the field of science, medicine, mathematics, astronomy and philosophy and made inventions on their field. They contributed alot in

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field of Science. There are many figures like; Ibn-sina, Ibn-nafis, Al Razi, Jabar-ibn hayyan, Omar Khayam etc.

(i) Ibn-sina and his contributions:

Ibn-sina is a Persian polymath philosopher and physician. He is known as **Avicenna** in the west. He is often called the "**Prince of physicians**".

Contributions:

Ibn-sina wrote a book "**Al Qanun fi Al Tib**" in his book he explored many diseases with their contagious nature and also explain the ^{impact} ~~effect~~ of Environment and psychology on health.

"**Kitab al Shifa**" is another famous book of Ibn-Sina in which book he talks about human reasoning, logic, metaphysics and thinking.

His books mostly studied in the

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in European universities until the 17C, as these give a wide knowledge about diseases and medicine.

(ii) Ibn-al-Nafis and his Contributions in the field of Science.

Ibn-al-Nafis "a Syrian physician and anatomist."

Contributed: He made one of the most important contributions in the medieval period by discovering the **pulmonary circulation of blood**, describing how blood travel from right side of the heart to lungs and then back to heart.

His commentary **Sharh tashrin al-Qanun**, he challenged the theories of Galen which is a considered a turning point of his career.

(iii) Al-Razi and his

Discoveries:

Abu Bakr Muhammad ~~ibn~~ Zakariya Al Razi, one of the most important ^{muslim} physician and philosopher.

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Al-Razi is known as **Rhazes** in the west. He served as Chief physician and philosopher in Baghdad and Ray. And regarded as one of the greatest figures in the history of medicine.

Contribution:

Al-Razi was the first one who made a clear distinguished between small pox and measles and saves countless lives in early diagnosis.

He wrote a book **Kitab-ul-Hawi**, in this book he described a vast knowledge about medicine and that book was used in European universities for centuries.

He also used **Alcohol** as an **antiseptic** in medicine which was a remarkable innovation for his time.

(iv) Jabir - Ibn-Hayyan

Jabir ibn-Hayyan was also known as the "**father of Chemistry**". He lived in Abbasid period and worked

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in ~~House~~ Court of ~~honor~~-ur-rashid.

Contribution:

Jabir was^{is} one who introduced^{ed} in experimental chemistry and stressed on trial, also he perfected^{ed} chemical process such as crystallization, Evaporation and distillation.

He wrote two books **Kitab ul Kinnyo** **Kitab-ul-Sabeen** in these books

he introduced in acids like **Nitric acid**, **sulfuric acid** which became essential for modern science.

His contribution laid in foundation of experimental chemical sciences.

(V) **Omar Khyam** and

his works:

Omar Khyam was also a persian muslim mathematician, poet and astronomer. His poetry is famous all over the world. He not only work in poetry but contributed equally to science.

Contribution:

Omar solve in Cubic equation of

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maths from geometric method and ~~found~~ introduce a new chapter that Algebra and geometry ^{should be} combined and equally important.

Also he transform in Persian Calender and make it more accurate than the Julian Calender and Gregorian Calender.

Conclusion:

In Conclusion: Muslims scientists not only preserved the knowledge but also contributed in the different fields and introduce their innovations to the world.



(b)

Briefly explain the impact of science on society with examples from daily life.

Introduction:

Science is the systematic study of the world through observation, experimentation and reasoning.

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Though Science invented more in this world, its impact is also vast and multidimensional. Science has transformed the lives of people, change their lifestyle, and make human more civilized.

Science has positive as well as negative impact on society and people.

Impact of Science

Positive impact

Negative impact

Positive impact of Science on Society:

Science positive impact is multidimensional.

(i) Improvement in health care

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Science has transformed the health sector by introducing vitamins, vaccines, antibiotics as well as the diagnosis machines such as CT Scan MRI. These all innovation made the life easier as well save million of life.

For example: The Covid 19 vaccine saved the million people from death, as it's a pandemic outbreak.

(ii) Communication and Media:

Science ~~introduce~~ discover new technologies like TV, Media, Internet, which make ease for people to know about international media ^{and} news.

For example: Social media platform like, WhatsApp, X app, Facebook allow people to share information instantly also get information quickly.

(iii) Transportation Revolution

Science discover new inventions

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Like airplanes, electric cars etc which replace in steam engine.

Now people easily travel from one place to another in

hours. The invention of airplanes by wright brother makes the travel easy for people.

(iv) Education and knowledge Expansion:

In old times it's difficult for ^{for areas} people to gain education but science invented internet and digital platforms for student to easily access to education.

For example → Coursera and digit skill platform provide online courses to people which is effective for people who live in far areas.

Negative impact of Science on Society:

Science does not only impact the

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society positively, rather it has negative impact also.

(i) Environmental pollution:

Science invented Car, bikes, industries which constantly polluted the environment, the Car horizon noise and industries waste damages the environment beauty.

(ii) Nuclear weapons and warfare:

Science invented nuclear weapons for human security but its harmful use can impact the society negatively.

For example → In worldwar I and II millions of casualties of civilians ^{shows a negative} impact on society.

(iii) Unemployment

Science introduced machines

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and Robots which replace the humans and so millions of educated people live ^{freely} unemployment.

Conclusion.

Hence: Science impact in society positive by giving ease to humans by introducing in online education, possible communication Transportation but it has negative impact also, that impacted in society very badly.

