*Ministry of Higher and Secondary Special Education of the Republic of Uzbekistan*

*Gulistan State University*

**Famous people of Uzbekistan**

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**Plan:**

1. **АBU ALI al - Husain ibn Abdallah ibn Sina (Avicenna).**
2. **Abu Arrayhan Muhammad ibn Ahmad al – Biruni.**
3. **Abu-Rayhon Beruniy.**
4. **Great Amir Temur.**
5. **The Temurid dynasty.**
6. **Zahir - ud - din Mohammad Babur.**
7. **Babur - conquest of north India.**
8. **Abu Ja'far Muhammad ibn Musa Al - Khwarizmi.**
9. **Alisher Navoiy.**

**АBU ALI al - Husain ibn Abdallah ibn Sina (Avicenna).**

Born: 980 in Kharmaithen (near Bukhara), Central Asia (now Uzbekistan).

Died: June 1037 in Hamadan, Persia (now Iran).

Ibn Sina or Avicenna was the most influential of all Islamic philosopher - scientists. He wrote on medicine as well as geometry, astronomy, arithmetic and music. Ibn Sina's two most important works are The Book of Healing and The Canon of Medicine. The first is a scientific encyclopaedia covering logic, natural sciences, psychology, geometry, astronomy, arithmetic and music. The second is the most famous single book in the history of medicine.

Ibn Sina wrote about 450 works, of which around 240 have survived. Of the surviving works, 150 are on philosophy while 40 are devoted to medicine, the two fields in which he contributed most. He also wrote on psychology, geology, mathematics, astronomy, and logic. His most important work as far as mathematics is concerned, however, is his immense encyclopaedic work, the Kitab al - Shifa (The Book of Healing). One of the four parts of this work is devoted to mathematics and ibn Sina includes astronomy and music as branches of mathematics within the encyclopaedia. In fact he divided mathematics into four branches, geometry, astronomy, arithmetic, and music, and he then subdivided each of these topics. Geometry he subdivided into geodesy, statics, kinematics, hydrostatics, and optics; astronomy he subdivided into astronomical and geographical tables, and the calendar; arithmetic he subdivided into algebra, and Indian addition and subtraction; music he subdivided into musical instruments.

**Abu Arrayhan Muhammad ibn Ahmad al - Biruni.**

Born: 15 Sept 973 in Kath, Khwarazm (now Khorezm province, Uzbekistan.)

Died: 13 Dec 1048 in Ghazna (now Ghazni, Afganistan.)

Al - Biruni is one of the major figures of Islamic mathematics. He contributed to astronomy, mathematics, physics, medicine and history.

Abu Rayhan al - Biruni was born in Khwarazm, a region adjoining the Aral Sea now known as Karakalpakstan. The two major cities in this region were Kath and Jurjaniyya. Al - Biruni was born near Kath and the town were he was born is today called Biruni after the great scholar. He lived both in Kath and in Jurjaniyya as he grew up and we know that he began studies at a very early age under the famous astronomer and mathematician Abu Nasr Mansur.

The total number of works produced by al - Biruni during his lifetime is impressive. It is estimated, that he wrote around 146 works with a total of about 13,000 folios (a folio contains about the same amount as a printed page from a modern book). The range of al - Biruni’s works covers essentially the whole of science at his time.

We know certain dates in al - Biruni's life with certainty for he describes astronomical events in his works which allow accurate dates and places to be determined. By the age of seventeen al - Biruni was engaged in serious scientific work for it was in 990 that he computed the latitude of Kath by observing the maximum altitude of the sun.

His description of an eclipse of the moon on 24 May 997 which he observed at Kath means that he had returned to his nativecountry by this time. The eclipse was an event that was also visible in Baghdadand al - Biruni had arranged with Abu'l - Wafa to observe it there. Comparing their timings enabled them to calculate the difference in longitude between the cities. We know that al - Biruni moved around frequently during this period for by 1000 he was at Gurgan being supported by Qabus, the ruler of the Ziyarid state. He dedicated his work Chronology to Qabus around 1000 and he was still in Gurgan on 19 February 1003 and 14 August 1003 when he observed eclipses of the moon there. We should record that in the Chronology al - Biruni refers to seven earlier works which he had written: one on the decimal system, one on the astrolabe, one on astronomical observations, three on astrology, and two on history.

His most famous work India was written as a direct result of the studies he made while in that country. The India is a massive work coveringmany different aspects of the country. Al - Biruni describes the religion and philosophy of India, its caste system and marriage customs. He then studies the Indian systems of writing and numbers before going on to examine the geography of the country. The book also examines Indian astronomy, astrology and the calendar. The book might have been written, when al - Biruni was in India with Mahmud Ghaznavid during Mahmud's military excursions into India. It is likely that al - Biruni was essentially a prisoner of Mahmud and was not free to leave and it meant that al - Biruni was taken to that country by Mahmud. From around 1022 Mahmud's armies began to have success in taking control of the northern parts of India and in 1026 his armies marched to the Indian Ocean. Al - Biruni seems only to have been in the northern parts of India, and we are uncertain how many visits he made, but observations he made there enabled him to determine the latitudes of eleven towns around the Punjab and the borders of Kashmir.

Al - Biruni studied Indian literature in the original, translating several Sanskrit texts into Arabic. He also wrote several treatises devoted to certain aspects of Indian astronomy and mathematics which were of particular interest to him. Al - Biruni was amazingly well read, having knowledge of Sanskrit literature on topics such as astrology, astronomy, chronology, geography, grammar, mathematics, medicine, philosophy, religion, and weights and measures.

One of the most important of al - Biruni's many texts is Shadows which he is thought to have written around 1021.The contents of the work include the Arabicnomenclature of shadeand shadows, strange phenomena involving shadows, gnomonics, the history of the tangent and secant functions, applications of the shadow functions to the astrolabe and to other instruments, shadow observations for the solution of various astronomical problems, and the shadow - determined times of Muslim prayers. Shadows is an extremely important source for our knowledge of the history of mathematics, astronomy, and physics. It also contains important ideas such as the idea that acceleration is connected with non - uniform motion, using three rectangular coordinates to define a point in 3 - space, and ideas that some see as anticipating the introduction of polar coordinates.

The book details the mathematical contributions of al - Biruni. These include: theoretical and practical arithmetic, summation of series, combinatorial analysis, the rule of three, irrational numbers, ratio theory, algebraic definitions, method of solving algebraic equations, geometry, Archimedes' theorems, trisection of the angle and other problems which cannot be solved with ruler and compass alone, conic sections, stereometry, stereographic projection, trigonometry, the sine theorem in the plane, and solving spherical triangles.

Important contributions to geodesy and geography were also made by al-Biruni. He introduced techniques to measure the earth and distances on it using triangulation. He found the radius of the earth to be 6339.6 km, a value not obtained in the West until the 16th century. His Masudic canon contains a table giving the coordinates of six hundred places, almost all of which he had direct knowledge.

Not all, however, were measured by al -Biruni himself, some being taken from a similar table given by al - Khwarizmi. The author of remarks that al - Biruni seemed to realise that for places given by both al - Khwarizmi and Ptolemy, the value obtained by al - Khwarizmi is the more accurate.

Al-Biruni also wrote a treatise on time - keeping, wrote several treatises on the astrolabe and describes a mechanical calendar. He makes interesting observations on the velocity of light, stating that its velocity is immense compared with that of sound.

**Abu-Rayhon Beruniy**

Abu-Rayhon Beruniy– a remarkable scientist, amazing with variety of his scientific interests, boldness of idea, the author of more than 150 works devoted to actual issues of natural sciences, philosophy, history, philology, great encyclopaedist– the thinker, the humanist of the Middle Ages epoch.

Outlook of Abu-Rayhon Beruniy was formed at the end of X – the beginning of XI century in Central Asia. He was born on 2 Zu-ul-hidja in 362 (on September 4, 973 A.D.) in suburb of Kyat, former feudal capital of Khorezm. On the native land he has received good education and from a youth began his scientific activity. Due to political events in Khoresm Beruniy left the native land and approximately in between 998-1004 lived in Gurgan, at southeast coast of Caspian Sea. At this time he has done a great work – «Monuments of the past generations ».

In about 1005 Beruniy came back to Khorezm, where at a court yard of the Khorezm king Abu Abbas Mamun ibn Mamun (1009-1017) occupied honorable position. In 1017 Mahmud Gaznavi (998-1034) has subordinated to himself Khoresm, and in the same year Beruniy together with some other scientists had been compelled to follow the conqueror to Hansa where he stayed up to the end of his life.

Despite the unfavorable conditions for him in the capital Mahmuda, Beruniy was entirely given to scientific researches.

Together with the army of sultan, Beruniy had several times visited India. He has taken advantage of the trips for studying this country and as a result, by 4030 he had written an outstanding composition on India. Earlier, in 1025 Beruniy finished "Geodesy". To sultan Masud (1030-1041), the receiver Mahmud, Beruniy has devoted his main work on mathematics and astronomy – « Masudov kanon». At government of the subsequent sultan – Masud (1041 - 1048) – Беруни written the big work on mineralogy, and at the end of a life – "Saydan".

He died in Gazna 2 Radjab 440. (on December 11, 1048).

**Great Amir Temur.**

In 1355 he marries the daughter of emir Dzhaku – of Turmush aga barlas. The Supreme emir of Mivarounnahr Kazagan, having convinced of advantages of Amir Temur., in the same year has given him his grand daughter Uldzhaj Turkan aga as wife. Due to this marriage there was a union of Amir Temur with emir Husajnom, grandson of Kazagana. They together opposed Mongols. In 1356 A. Temur had two sons – Djahangri and Omar Shajh.

The economic situation in Movarounnahr at the end of 13th – first half of 14th century worsened from day to day. Khan of Mongolia Togluk Temur who without resistance in 1360 has reached up to Kashkadarya has taken advantage of it. Amir Temur has arrived to him for service. But when Togluk Temur has appointed as the governor of Movarounnahr his son Iljas Hodzha, Amir Temur has not wished to serve this prince and having agreed with governor Balh emir Husejnom Amir Temur has entered persistent struggle against Mongols.

At that time Samarkand was dominated by sarbadors – "hunged men", who were also struggling against Mongols. The name of this national movement has arisen from slogans of its participants «Struggle for freedom, or a head on the gallows». In 1370 Amir Temur on kurultay in Balh has been proclaimed by the Supreme as emir of Turan.

And the marriage with daughter of Chingizs Saray Mulk Hanum allowed Amir Temur to add to his name a honorable title "kuragan", i.e. « the son-in-law of khan ».

The primary objective of Amir Temur became overcoming dissociation and association of separate possession into a uniform state. As a Capital of this state he has chosen Samarkand where has urgently started erection of city defensive walls, citadels and a palace. He has put in pawn a new Samarkand, near to ruins of ancient capital of Sogdiana (modern Afrasiab).

Having united and subordinated the lands between Amu Darya and Syr-Darya, and also Fergana and Shash viloyat, Amir Temur began aggressive campaigns.

For 35 years had lasted board of A.Temur (1370 - 1405) in Central Asia. He has created enormous empire from Indus and Ganges up to Syr-Darya and Zarafshan, from Tien-Shan up to Bosporus, he had lead the most part of his life in campaigns.

During the campaign to China, in 1405 Amir Temur died in Ortrar.

During the life time of Amir Temur a special composition about the government known under the name «Temur Code» has been written. It is a valuable historical source of the Middle Ages, consisting of two parts. In it there is a biography of Temur and the events connected to his life, sights of this outstanding statesman and the commander on military art, the methods and management of the country are stated. It is the valuable code of laws from which it is visible on the basis of what Amir Temur has created the centralized, controlled mighty state.

Having created huge power, Amir Temur prepared conditions for economic and cultural development of the country. Century traditions of the last epoch revive in a new historical context. As Movarounnahr becomes the center of trade, economy and culture of Near and Middle East. Such ancient cities as Samarkand, Kesh, Bukhara, Termez, Tashkent, Merv, etc., which were destroyed by hordes of Chingizhan began to equip with modern conveniences. Majestic buildings of mosques, madrasah , the mausoleums, a caravan – sheds and bath houses were under construction. Became usual, that each victory or event were immortalized in architecture. In building activity Amir Temur pursued a certain political aim– the constructions erected by him were to show force, power and greatness of his empire.

During years of his board Amir Temur has put an end to feudal dissociation, has established trading - diplomatic relations with the largest kingdoms of Europe – France, England, Castile. Unfortunately, after death of Amir Temur trading - diplomatic relations with the Western Europe, incorporated by him have no further developed.

The history puts Amir Temur in same line with such greatest commanders, as Alexander the Great, Dari 1, Yuriy Caesar.

Right in the heart of Tashkent, the capital of Uzbekistan, a fabulous statue of a man on horseback dominates a cool, tree - lined square. The rider's pose is regal and military. The sculptor has captured the moment of a great leader in action. His right arm is raised aloft, perhaps addressing his troops or surveying the sweep of his empire. With his left hand he reins his horse in tightly, catching the snorting beast in mid-stride, its head sharply bowed, its left foreleg poised in the air. On his left sits a long, gently curved sword secured above a circular embossed shield. ...This is the monument to great Amir Temur.

All Turkic peoples are proud of the Great Son of the Uzbek people, the ancestor of genius, the famous fighter and military leader Sokhibkiron Amir Temur who contributed greatly to the formation and development of the Uzbek statehood.

Amir Temur Taragai Mukhamad Bakhodir ugli was born on April 9 (8), 1336 in the settlement of Khoja Ilgor which was located ten kilometers from the town of Shakhrisabz. In the Middle Ages Shakhrisabz’s name was Kesh.

In Europe he was known as Tamerlane or Tumberlane. The name was derived from the Persian Timur - i lang, "Temur the Lame" by Europeans during the 16th century. His father Taragai Mukhammad Bakhodir came from the Barlas clan and he belonged to the elite of the clan. Amir Temur’s mother Tegina Begim Mokh (according to some sources - Nekina) was a Bukharian by birth and she was a daughter of the famous theologist Sadr - ash shariat Ubaydullakh Ibn Akhmad Makhbubi Bukhari.

Amir Temur was brought up in the atmosphere of fighting, competing and hunting, that’s why for him to lose honor was equal to death. The building up of Amir Temur’s character was the result of a number of conflicting events. The well known historian of that time Akhmad Ibn Arabshakh wrote in the Adjaib - al - Makdur book: "Temur’s qaze was steady and quiet. He didn’t know what the fear of death was. He preferred truth, irrespective how bitter it could be to lie and secrecy. Being unbelievably brave and strong, this person made people respect and obey him".

In 1360 Temurbek, serving to the Mongolian khan Tugluq Temurkhan became the ruler of Kesh district. At that time Amir Temur had negotiations with the ruler of Balkh Amir Husain with the aim to overthrow the Mongolian Khan Tugluq Temurkhan and put an end to the Mongolian sway over Movarounnahr. However they were defeated and they had to escape to Sistan and collect forces there. In 1364 he and his uncle Khoja Barlas managed to liberate Movaraunnahr from Mongols and take power. In spring of 1366 forces of Amir Khusain and Amir Timur came to Samarkand. In 1370 Amir Timur occupied Samarkand and became the ruler of the whole Movaraunnahr. At that time Amir Husain died.

Amir Temur added the word Kuragon to his name which meant "son in - law" because he married the sister of Amir Husain, a daughter of the representative of the Mongolian clan of Genhisids Kazankhan. Ruling the country Amir Temur had the "Rosti - Rusti" (force is in justice) motto and he always tried his best to follow his motto. The symbol of the new state established by Amir Temur was a sky - blue banner. The well - known scientist, professor of oriental languages and literature of the Pesht University Herman Vamberi writes that the portal of Amir Temur’s palace was crowned by a symbol consisting of three circles which meant Amir Temur’s ruling of three sides of the world, North, South, and West.

From that time Amir Temur’s political campaigns began which lasted 35 years. First of all he separated his power to the white horde Khanate which was located along the Sir - Darya River. In 1372 Amir Temur conquered Khorezm. In 1389 he began fighting against Tokhtamysh who was perfidious toward him. In 1392 the skilful Amir Temur marched on the Caucasus and occupied Georgia and Armenia. In 1395 the skillful fighter defeated Tokhtamysh on the bank of the Terek river and chased him up to Yelets. Some time after Amir Timur conquered the capital of the Golden Horde.

In 1398 - 99 he marched on India, conquered its capital, Delhi, and came back to Samarkand. In 1400 Amir Temur defeated the Sultan of Egypt on the territory of Syria. Two years later, in 1402, he gained a crippling victory over the forces of Bayazid.

In 1404 Amir Timur came back to Samarkand and began preparations for the march on China. Without taking the advice of his generals to remain in Samarkand until the spring, Timur and his army planned to advance northwards without delays, encamp at various points near the river Jaxartes and wait for the first sign of spring to strike towards China.

They left Samarkand early in January on a day chosen by the astrologers as auspicious. Thus Tamerlane led an enormous army and departed on his last and most fantastic campaign to conquer China when he was close to seventy years old. He was too weak to walk and had to be carried in a litter. Toward the end of January, they reached Utrar. There Timur's health had suffered from the severity of the journey and he fell ill with pneumonia. On 17 or 18 February 1405, Tamerlane died.

His body was carried back and buried at the Gur - i - Mir, Samarkand.

Thus, as the results of numerous and lasting military campaigns Amir Timur managed to establish a vast and powerful empire consisting of Movarounnahr, Caspian Lands, Khorasan (it is Afghanistan and the north - western part of Iran), a major part of India, Iraq, Iran, the Northern Caucasus and a number of countries of the Front Asia. At that time inter- state cultural and economic relations reached a high level of development.

Character and personality.

There are abundant ancient sources written about Tamerlane. We have the primary source from Spanish Ruy Gonzalez de Clavijo, sent by King Henry III of Castile on a return embassy to Tamerlane. There is also a Persian biography of Tamerlane by Sharaf ad - Din Ali Yazdiy and the Arab biography by Ahmad ibn Arabshah ; from Marlowe to Edgar Allan Poe, he continues to fascinate us as hero or viper.

He was said to be tall strongly built and well proportioned, with a large head and broad forehead. His complexion was pale and ruddy, his beard long and his voice full and resonant. Arabshah describes him approaching seventy, a master politician and military strategist: steadfast in mind and robust in body, brave and fearless, firm as rock. He did not care for jesting or lying; wit and trifling pleased him not; truth, even were it painful, delighted him...He loved bold and valiant soldiers, by whose aid he opend the locks of terror, tore men to pieces like lions, and overturned mountains. He was fautless in strategy, constant in fortune, firm of purpose and truthful in business.

In 1941, the body of Tamerlane was permitted to be exhumed by a Russian scientist, M. M. Gerasimov. The scientist found Timur, after examining his skeleton, a Mongoloid man about 5 feet 8 inches. He also confirmed Tamerlane's lameness. In his book The Face Finder, Gerasimov explains how he was able to reconstruct exact likenesses of Timur from a careful consideration of his skull.

Amir Temur contributed greatly to the improvement of cities and the whole empire. He did much to turn his capital - Samarkand into a more beautiful city. First of all, by his order, irrigation works were carried out, and wide avenues were built. Numerous, scientists, workers of literature and art, craftsmen, skilful builders, who came from occupied countries, contributed greatly to the development of Amir Temur’s state. It was not by chance that at that time Samarkand was called as "face of the Earth", "invaluable pearl of the orient". The Spanish Ambassador Rui Gonsales de Klaviho wrote in his book "Diary of the travel to Timur’s court in 1403 - 06" that Amir Timur ordered to build a wide trade street through the city with shops located on each side of the street. According to the Ambassador’s book Samarkand became a global warehouse thanking to Amir Temur.

Amir Temur began big construction works in the capital of Movarounnahr, Samarkand, which resulted in the appearance of true pearls of art. In the outskirts of Samarkand Amir Temur laid out beautiful gardens. They were Boghi shamol, Boghi dilkusho, Boghi maidon and others which impressed by their order and beauty.

By Amir Temur’s order the Bibi- Khanum mosque was built in Samarkand in honor of his first wife Saroi Mulk Khanum. The city was decorated by the Kok - Saroi palace and a number of mosques, mausoleums and madrassahs. The Ok - saroi palace was built in Shakhrisabz, the Zangi - ota mausoleum - near Tashkent, a majestic mausoleum in Turkistan was built in the place of the grave of the famous religious thinker, Sheikh Khodja Akhmad Yassavi and there are many similar examples.

Different sources indicate that Timur was a man with extraordinary intelligence - not only intuitive, but intellectual. Even though he did not know how to read or write, he spoke two or three languages including Persian and Turkic. It gave pleasure to Amir Temur to get together scientists and workers of literature in his palace and organize poetry competitions and scientific discussions. Today we can assure that such pillars of the world culture as Mirzo Ulugbek, Ali Kushchi, Alisher Navoiy, Abdurakhimov Djomiy, Kamoliddin Behzod and Mirzo Bobur grew out of the seeds planted by Amir Temur. A strong many- sided personality of Amir Temur attracted authors, poets and historians of his time. Thus, the sultan of the Uzbek poetry, the great thinker Alisher Navoiy, who was born 36 years after Amir Temur’s ruling, wrote in its book titled "Majolis - um - nafois" that Temur displayed great interest in literature and poetry - in particular.

Ibn Khaldun, who met him outside Damascus in 1401 worte:

"This king Timur is one of the greatest and mightiest kings...he is hightly intelligent and very perspicacious, addicted to debate and argument about what he knows and also about what he does not know!"

The great military leader knew by heart many poems in Persian and Turkic languages. The first Turkic poets such as Sakkoki, Khaidar Khorazmi, Atoi, Lutfi, Amiri and Gadoi appeared in Temur’s time.

Known to be a chess player, he had invented a more elaborate form of the game, now called Tamerlane Chess, with twice the number of pieces on a board of a hundred and ten squares.

**The Temurid dynasty.**

The empire that Timur had built could not be kept together by his descendents, none of whom shared the same iron will that he had possesed. As had happened with Chingiz Khan's empire, factions soon developed, and vassals on the periphery of the Timurid domains quickly seized their chance to assert their independence. Shortly after Timur's death, little was left of the former empire except for Transoxiana and Afghanistan. However, although the size of the Timurid empire was drastically reduced, his successors went on to usher in the Muslim equivalent of the European Renaissance, centered in the cities of Samarkand and Herat.

Two of the Amir's four sons had died before their father: Jahangir (1355 - 1375) and Umar Shaykh (1355 - 1394). His second son, Miran Shah (1366 - 1408), passed away shortly after his father, leaving only the youngest, Shah Rukh (1377 -1 447) as an heir. In fact, Timur had appointed his grandson, Pir Muhammad to succeed him, but he also died shortly after his grandfather, in 1406. In 1409, Shah Rukh seized power, making Herat his capital. His eldest son, Ulugh Beg (1394 - 1449) was appointed governor of Samarkand, while his second son, Baysunghur (1399 - 1433) served as his wazir in the capital. None of these rulers had inherited Timur's passion for conquest, but they did share his interest in building and played a major role as patrons of the arts and sciences. A chronicler of the time wrote that "From the time of Adam until this day no age, period, cycle or moment can be indicated in which people enjoyed such peace and tranquility." Under their patronage, music, calligraphy, Persian miniature painting, literature, and various scientific pursuits flourished.

Ulugh Beg, who ruled over the empire during the two years between his father's death and his own, was one of the greatest astronomers that the world has ever seen. He built a magnificent observatory in Samarkand and the calculations that he made with it gained him fame in Europe as an eminent scholar. Unfortunately, he was murdered in 1449 by his son Abdul Latif, who was alarmed at the secular pursuits of his father. A year after the murder, Abdul Latif also died.

In 1452, Abu Sa'id (1424 - 1469), a grandson of Miran Shah, brought the Timurid domains, still consisting of Transoxiana, Afghanistan and northern Persia, under his control. He was followed by Sultan Husayn Bayqara (1438 - 1506), a grandson of Umar Shaykh, who began his rule of nearly four decades in 1468. "It was under his beneficient direction that Herat achieved the zenith of its glory as a centre of art, literature and scholarship."

It was at Husayn's court that the poet Mir Alisher Navoi, who popularized Chagatay, the classical Turkic language, as a literary medium, rose to prominence, along with the miniature painter Bihzad and the poet Jami. However, at the same time, the ruler also continued the pursuit of pleasure which had been a mark of most of the Timurid dynasty and which had resulted in more than a few of Timur's descendants dying from too much alcohol or other forms of debauchery.

Timurid power in Central Asia came to an end with the advent of another Turkic tribe from the north: the Uzbeks. These former nomads who had converted to Islam while members of the Golden Horde had become disaffected with a life of riding and raiding and were intent on settling in Transoxiana and adopting a sedentary way of life on the trade routes that ran through Central Asia.

In 1500, under their leader, Muhammad Shaibani Khan (1451 - 1510), they captured Samarkand from Zahiruddin Babur (1483 - 1530), a great - great - great - grandson of Timur and the ruler of Ferghana, who had himself captured the city in 1497. Babur recaptured Samarkand in 1501, only to lose it to Shaibani again in 1505. Herat fell to the Uzbeks shortly after, in 1507. Babur made one more attempt to regain Samarkand in 1511, but he was unsuccessful and was forced by the Uzbeks to flee south in the following year. However, his career as a ruler was not over, as he subsequently went on to found the Moghul dynasty , which ruled India until the British took over the country in the early nineteenth century. The Shaibanid Uzbeks established an empire in Transoxiana which lasted until the end of the sixteenth century.

**Zahir - ud - din Mohammad Babur.**

Zahir - ud - din Mohammad Babur, Zahiriddin Muhammad Bobur (February 14, 1483 - December 26, 1530) (also spelled Baber or Babar), emperor (1526 - 30) and founder of the Mughal dynasty of India, a descendant of the Mongol conqueror Timur (Tamerlane). In 1526 he founded the Mughal Empire and the Mughal dynasty.

Zahir - ud - din Mohammad was better known by the sobriquet "Babur" (derived from Persian "Babr" meaning "leopard".)

Babur - background.

Babur was born on February 14, 1483, in the city of Andijan in present-day Uzbekistan. He was the eldest son of Omar Sheikh, ruler of the Fergana Valley, and a descendant of the famous Turkic warlord, Timur (Tamarlane).

Although Babur hailed from the Barlas tribe which was of Mongol origin, the tribe had embraced Turkish culture in a big way since converting to Islam and due to long residence in Turkish regions. Hence Babur, though nominally a Mongol (Mughal in Persian), drew much of his support from the Turks, and his army was eclectic in its ethnic makeup.

Babur is known to have been incredibly strong and physically fit. Allegedly, he would carry two men, one on each of his shoulders, and then climb slopes on the run, just for the exercise this afforded. Local legend holds that Babur made a point of swimming across every major river in India, again for exercise.

Babur - military career.

When only twelve years of age, Babur succeeded his father as ruler of Fargana. His uncles were relentless in their attempts to dislodge him from this position; Babur spent a major portion of his life shelterless and in exile, as detailed below.

In 1497, Babur attacked and gained possession of the Uzbek city of Samarkand. While he was winning that city, a rebellion among Uzbek nobles back home robbed him of Ferghana. While he was marching to recover it, his troops deserted him; he lost Samarkand as well as Ferghana. Babur did manage to regain both places within a relatively brief period. However, in 1501, he was again defeated, this time by his most formidable enemy, Muhammad Shaybani, Khan of the Uzbeks; Samarkhand, his lifelong obsession, was lost again.

For three years, Babur concentrated on building up a strong army. In 1504, he was able to cross the snowy Hindu Kush mountains and capture Kabul. With this move, he gained a wealthy new kingdom and re - established his fortunes.

In the following year, Babur united with Husayn Bayqarah of Herat against Muhammad Shaybani. The death of Husayn Bayqarah in 1506 put paid to that venture, but Babur occupied his ally's city of Herat and spent a year there, enjoying the pleasures of that city. A brewing rebellion finally induced him to return to Kabul from Herat. He prevailed on that occasion, but two years later, a revolt among some of his leading generals drove him out of Kabul; he was compelled to escape with very few companions. Babur however soon returned; he again captured Kabul and compelled the allegiance of the rebels.

Muhammad Shaybani died in 1510. Babur used this opportunity to regain his ancestral Timurid territories. He received considerable aid from Shah Ismail I, Safavid ruler of Persia, and made a triumphant entry into Samarkand in 1511. However, he was again defeated by the Uzbeks in 1514 and returned to Kabul with great difficulty.

**Babur - conquest of north India.**

Babur now resigned all hopes of recovering Fergana. Although he dreaded an invasion from the Uzbeks to his West, his attention increasingly turned towards India. He had made several preliminary incursions, including an attack on the Gakhar stronghold of Pharwala, when an opportunity for a more extended expedition presented itself in 1521. Ibrahim Lodi, ruler of the Delhi Sultanate, was widely detested; several of his Afghan nobles invited Babur's intervention.

Babur assembled a 12,000 - man army, complete with artillery, which was then a great novelty, and marched into India. This number actually increased as Babur advanced as members of the local population joined the invading armies. Ibrahim Lodi advanced against him with 100,000 soldiers and 100 elephants. Their main engagement, the First battle of Panipat, was fought on April 21, 1526. Ibrahim Lodi was slain and his army was routed; Babur quickly took possession of both Delhi and Agra.

Now Babur was having sleepless nights because of Rana Sanga, the rajput ruler of Mewar. Babur sent about 1500 choice cavalry to attack Sanga. These were butchered by Sanga's rajputs. Babur wanted to discuss peace terms. For discussions Sanga sent his general Silhadi (Shiladitya). Babur won this general by promising him independent kingdom. Silhadi came back and reported that Babur did not want peace and he wanted to fight. Battle of Khanwa started on March 17, 1527 and Babur's army was being knocked out of the field and victory was certain for Sanga. At this juncture Silhadi and his army left the field and this tilted the war in favor of Babur and he won. On May 6, 1529, Babur defeated Mahmud Lodi, brother of Ibrahim Lodi, at the Battle of Ghagra, thus crushing the last remnant of resistance in north India.

Babur - last days.

Babur spent the later years of his life arranging the affairs and husbanding the revenues of his new empire. He wrote his memoirs, the Baburnama, in the Turkish dialect known as Chaghatai.

Towards the end of Babur's life, his son, Humayun, became deathly ill, and was declared by the physicians to have little chance of survival. Babur was devastated and began to constantly pray for his son. In these prayers, which he recited while circumambulating his son, Babur said that he wanted to take the disease away from Humayun, and die in his place. Strangely enough, Babur's prayers were answered; Humayun recovered while Babur grew ill. He died at the age of 48, and was succeeded by his eldest son, Humayun. As per his wishes, Babur was buried at Kabul, Afghanistan.

**Abu Ja'far Muhammad ibn Musa Al - Khwarizmi.**

Born: about 780 in Khwarazm (now Kharazm province in Uzbekistan.)

Died: about 850.

Al'Khwarizmi was an Islamic mathematician who wrote on Hindu - Arabic numerals andwas among the first to use zero as a place holder in positional base notation. The word algorithm derives from his name. His algebra treatise Hisab al - jabr w'al -muqabala gives us the wordalgebra and can be considered as the first book to be written on algebra.

We know few details of Abu Ja'far Muhammad ibn Musa al - Khwarizmi's life. One unfortunate effect of this lack of knowledge seems to be the temptation to make guesses based on very little evidence. But the name al - Khwarizmi may indicate that he came from Khwarizm south of the Aral Sea in Central Asia.

The algebra treatise Hisab al - jabr w'al - muqabala was the most famous and important of all of al - Khwarizmi's works. It is the title of this text that gives us the word "algebra" and it is the first book to be written on algebra. The book was the written in Baghdad, where al - Khwarizmi worked under the patronage of Caliph Al - Mamun and he dedicated two of his texts to the Caliph. Al - Mamun was a great patron of learning and founded an academy called the House of Wisdom where Greek philosophical and scientific works were translated. He also built up a library of manuscripts, the first major library to be set up since that at Alexandria, collecting important works from Byzantium. In addition to the House of Wisdom, al - Mamun set up observatories in which Muslim astronomers could build on the knowledge acquired by earlier peoples. Al - Khwarizmi and his colleagues the Banu Musa were scholars at the House of Wisdom in Baghdad. Their tasks there involved the translation of Greekscientific manuscripts and they also studied, and wrote on, algebra, geometryand astronomy. These were his treatise on algebra and his treatise on astronomy.

Al - Khwarizmi also wrote a treatise on Hindu-Arabic numerals. The Arabic text is lost but a Latin translation, Algoritmi de numero Indorum in English Al - Khwarizmi on the Hindu Art of Reckoning gave rise to the word algorithm deriving from his name in the title. Unfortunately the Latin translation (translated into English in 19) is known to be much changed from al - Khwarizmi's original text (of which even the title is unknown). The work describes the Hindu place - value system of numerals based on 1, 2, 3, 4, 5, 6, 7, 8, 9, and 0. The first use of zero as a place holder in positional base notation was probably due to al - Khwarizmi in this work. Methods for arithmetical calculation are given, and a method to find square roots is known to have been in the Arabic original although it is missing from the Latin version

. Al - Khwarizmi wrote a major work on geography which give latitudes and longitudes for 2402 localities as a basis for a world map. The book, which is based on Ptolemy's Geography, lists with latitudes and longitudes, cities, mountains, seas, islands, geographicalregions, and rivers. The manuscript does include maps which on the whole are more accurate than those of Ptolemy. In particular it is clear that where more local knowledge was available to al - Khwarizmi such as the regions of Islam, Africa and the Far East then his work is considerably more accurate than that of Ptolemy, but for Europe al - Khwarizmi seems to have used Ptolemy's data.

A number of minor works were written by al - Khwarizmi on topics such as the astrolabe, on which he wrote two works, on the sundial, and on the Jewish calendar. He also wrote a political history containing horoscopes of prominent persons.

**Alisher Navoiy**

An ingenious poet and the thinker, the musician and the artist, the teacher and the scientist, a great statesman and one of the most cultural persons of his time. Alisher Navoi was the conventional head of the cultural life of Herat, the patron of numerous representatives of sciences, arts and cultures. “Due to Alisher many people have received literary and art education and talent strengthening and there is no any other patron and the tutor of people as Alisher”. - wrote Babur

Alisher Navoi was born on February 9, 1441 in the city of Herat, the capital of Huroson State.

From the childhood Alisher was interested in reading the works of classics of Persian-Tadjik literature: Saadi, Attar and others. According to Navoiy himself, such poets as Lutfi Sheikh Kemal Turbati have directed, assessed the verses written by him. Navoiy studied at the most educated people of that time, took part in their highly intellectual and deeply instructive conversations.

That time Navoi already had a reputation of a virtuosic master of pen. Poet wrote in different styles of lyric poetry- gazels (forms of verses) and kyt, tarjibans and rubai- in all these styles Navoi demonstrated a big potential of his talent and skills.

Navoi started his creative development as a Persian speaking poet, rapidly learned the technique and figurative structure of the Persian poetry. Though, he started writing in the old-uzbek language, and thereby turned his work not only to a high society, but also to common people.

The literary heritage of the great poet is colossal. His gazels- lyrical verses are collected in a big master divan “Treasure of the thought”, which consists of four cycles: “Wonders of Childhood”, “Rarities or Witticisms of Youth”, “Marvels of Middle Age” and “Advantages of Old Age”. To his pen belong a “Birds language” philosophical poem; work in linguistic “Controversy of two languages”; historical work “Story of prophets and scientists”, “Story of king Adjam” and others.

The top of Navoi’s works became “Khamse” ("quintuple")- cycle of five poems: “Wonders of Good People”, “Leyli and Medjnun”, “Farkhad and Shirin”, “Seven travelers”, “Dam of Iskander”.

“Wonders of Good People” (1483)- philosophy- didactic poem, in which a poet criticizes unfair and cruel governors of his time. His verses inspired with ideas of justice and believe in good. Navoi glorifies high moral ideals of kindness, honesty, modesty and humanism.

“Leyli and Medjnun” (1484)- novel about possession with love. The hero of novel is Arabian young man Kaysa called “Medjun”, translated as “possessed with demons”. For his boundless love to Leily he is ready for all trials; he was chained and had to escape and hide. But the power of his love helps him to confront the evil of tribal inequality. But the price for such confrontation became his life.

In “Farkhad and Shirin” (1484) Navoi described the hard work of Farkhad, navy and square man. Poet also uses folk motives- miraculous prophecies and magical mirror. Hero, whose power is exaggerated, fights with fire-spouting dragon and in hand-to-hand combat makes the whole army to run away. The power of love stimulates him for brave actions.

“Dam of Iskander” (1485)- philosophical poem, describing biography of Alexander Macedonian. The poem based on social- utopian poem by Nizami – “Iskander-name”. Navoi describes interminable military campaigns of Alexander, which acts in accordance with advices of council of Roman wise men.

Having neither family nor children poet spent the most part of his wealth for charity. He built a lot of schools, hospitals and caravanserais.

Navoi died on January 3 1501 in Herat. The whole Herat paid its last tribute to beloved poet and wise person. The mourning, caused by Alisher Navoi’s death lasted for a year, such great was a love to person, which devoted his talent and gifts to his infinitely beloved people.

Having no family, no children, no successors, the poet spent a significant part of his huge wealth for charity. He has constructed a lot of educational institutions, hospitals, a caravan–sheds, channels, bridges and roads.

In Herat Навои maintained the closest relations with the great Tadjik poet and thinker Abdurrahman Dzhami (1414 - 1492) who was his closest friend, the adherent, the teacher and the spiritual instructor. Friendship of Navoiy and Dzhami remain in a history for ever as a bright symbol of friendship between Uzbeks and Tadjiks.

By the time when Navoiy became one of the outstanding persons in Hurasan, having received a honorable post at a court yard, he already had reputation of the masterly master of a verse. The generosity of his talent was that the poet has captured all versions of lyrical works created by peoples of the Muslim East during many centuries. Gazals and kitas, tarjibans and rubai– in what genre would not act Навои, he proved everywhere with shine boundless opportunities of his talent and skill.

Many known representatives of the literature, art and science of second half 15 – the beginning of 16 century, as a token of deep respect for Alisher Navoi and in gratitude for his support, devoted to him their works.

The image of this versatile and talented person historically is not separable from the broad audience of his contemporaries, friends, admirers and direct pupils – poets and musicians, scientists and architects, calligraphers and artists, historians and the writers, who defined their activity as cultural blossoming of Herat « epoch of Nabvoiy ».