CONCLUSION
Spain is credited to be such centre of learning which produced scholars in all the branches of learning from amongst all the religious communities and from all the existing races in the country. Its importance may not be avoided as it is situated far from the Arabia, the birth place of Islam. A large number of scholars either themselves visited the peninsula or their forefathers settled there prior to their birth. However, it became among the most important learning centres in the Muslim world. It started producing scholars of various sciences alongwith the religious sciences and literature. The sciences to which Muslims paid their attention and which have been discussed here are: Medicine, together with its branches, like surgery, pharmacology, ophthalmology, therapeutics, hygiene and others; Geography alongwith its branches, such as cartography, oceanography, cosmography and travel writings; Mathematics and Astronomy with all of their existing branches, arithmetic, geometry, algebra and trigonometry, and lastly Botany and Agronomy. Among the religious communities were the Muslims, the Christians and the Jews. The Arabs, the Berbers, the Spanish Muslims and the European Christians were the main races each of which produced the scholars in large number who contributed these sciences. Cardova, Granada, Toledo, Saragossa, Seville, Almeria, Denia and others were the main centres of learning.
It is remarkable to note here is that at about each centre thousands of schools, colleges, teachers and students were, and the academic activities were at its height.

This development and advancement that astonished the whole Europe, Asia and Africa was because of the prosperity of the country. The people of the country enjoyed luxurious life and facilities. Their industries, agriculture, trade and commerce was far advance in the whole world. Because of this prosperity and richness their contribution to the field of architecture was much advance and if not superior to the architectural development in the east but of course not inferior to them. They constructed beautiful buildings, established various advanced industries like silk weaving, paper and glass making and handicrafts and developed in agriculture to have more crops. This helped in the establishment of a large number of schools, colleges and libraries and support scholars by providing them facilities to work on various fields.

The Spanish-Muslim scholars not only transmitted and got acquainted the works of the east and through them the sciences of other civilizations but also produced their own works in about all the branches of science with their discoveries, experiments and inventions.

The medical science produced such great scholars who not only became familiar in Muslim Spain and north Africa but also in the Muslim east and Christian west.
Al-Zahrawi was a surgeon who invented a large number of instruments useful in medical science. These instruments included probes, knives, scalpels, scissors, pointed blade, speculums and hooks. He discovered the surgery of obstetrics, eye, teeth, discussed for the first time lithotomy and removed the broken patella with the surgical operations. He used several types of threads and catguts for suturing wounds and described the hydatid cysts. Ibn Juljul, ibn Tufayl, ibn Rushd, ibn Bajja and others are the physicians who, with their experiences and writing works got much familiarity and nearness to the rulers of their periods. Banu Zuhr family was a distinguished family and is credited to give new systems of treatment after making various experiments and observations. Their eminence and expertise in the field made them all able to work under the patronage of various rulers of North Africa and Spain, and especially under the Almohads, Multhamid and Murabits. They, in their works, with their vast knowledge and experiences refuted some scholars of the east and of the Greeks on the one hand, while on the other hand, approved other scholars. Ibn 'Ala Zuhr criticizes the physicians who use to ask from the patients their problems and about their forefathers before their treatments. He use to treat the patients after diagnosing their diseases by examining urine and taking pulse. He took all the precautions before the treatment.
and advised to give correct strength of medicine, either simple or composite. Abu Marwan ibn Zuhr was in favour of purgative treatment. He discussed the diseases of various organs of the body from head to feet and prescribed their treatment. He also discovered various new diseases including mediastinal tumors, pericardial abscesses, intestinal erosion, pharynx and inflammation of the ear. He also recommended tracheotomy and artificial feeding with oesophagus or the rectum. Abu Bakr Muhammad ibn Zuhr worked on ophthalmology. Al-Ghafiqi, being an occultist, got much familiarity both in the east and the west. His work on ophthalmology, Kitab al-Murshid fi'l-Kuhl is the summary of all the knowledge of the field of all the eastern and the western works. In this he showed the link of the eye with the entire organism. Al-Kulliyat and Talkhis of ibn Rushd exercised great influence over west. He worked on theriac, anatomy of organs, diseases from head to toe, symptoms of diseases, hygiene and therapy. Ibn al-Khatib invented the germs of plague and discovered its treatment. Similarly ibn Khatimah wrote about plague and gave various informations about this disease and about the patient who is effected by this epidemic.

Apart from them there are other physicians who wrote on the medicaments and food. About all of their works exercised influence over the west and it is the fact that
the medical science of the Christian west was because of its development in Muslim Spain.

The field of geography produced many great scholars in Muslim Spain. Al-Bakri corrected the mispelled names of various places in Arabia and discussed the habits of all important tribes of the peninsula. He described land and sea routes from Spain to various other areas of the Muslim World alongwith the nature of coasts and climates of the seas and the coastal areas. Abu Hamid at-Gharnati after making visits to Arabia, Persia, Volga, Bulgar and others gave informations of their people, land, climate and others. He also dealt some of the marvels of Andalusia. Describing Eurasia he mentioned about its various ethnic groups, their society, culture, customs and the languages. Discussing seas and their inhabitants, he mentioned their depth, their plants, stones found there and all kinds of fishes. After visiting various areas he gave descriptive account of these places, like the pyramids of Egypt, light house of Alexandria, various caves, tombs and fossils. Al-Idrisi gave most important maps of different parts of the world which after combining became the largest map of the world. He used colours showing different areas, oceans, seas, rivers and countries. He extensively used silver colour while preparing these maps. Apart from this he wrote a detailed geographical account of the world. Al-Mazini was an
important cosmographer of Muslim Spain who, after his visits to Volga, Hungary and Arabia, gave his travel accounts, describing all related things about the people, land and climate of these areas.

Muslim scholars of Spain also devoted their attention towards agronomy and botany. Though they were few in numbers but contributed these fields with their experiments and observations. They established beautiful lawns, planted a large number trees and plants of fruits and flowers. They introduced various techniques of plantation as layering, pruning and grafting. Among them are Ibn Bassal, Ibn Wafid al-Lakhmi, Abul Khayr al-Ishbili, al-Zahrawi, ibn Ghalib, ibn al-Awwam and others.

Like other sciences, Spanish Muslim mathematicians and astronomers also did a marvellous job in the contribution to various branches of mathematics and to astronomy as well. These mathematicians used their own numeration system by the name 'Dust Numerals' (Huruf al-Ghubar). Commercial arithmetic in the form of complete science was introduced by al-Majriti. Many works were also written on this science. Al-Jayyani determined the magnitudes of the arcs on the surface of a sphere. Jabir was a prominent mathematician who worked on spherical trigonometry more than any other branch. He is regarded as the first to introduce the formula of right angled spherical
triangle \((\cos A = \cos a \sin B)\) and is credited to solve the problems of plane trigonometry with the help of whole chord. Ibn al-Yasmini seems to be the only one in Spain who wrote his algebra in verses. Muhyi al-Din al-Maghribi wrote a number of books, revised Greek works, derived a number of new geometrical theorems and at the same time proved them. He had given some thoughts towards trigonometry also. Ibn Baṭr discussed in his compendium a great deal of mathematics. Al-Qalasadi is credited to be a revolutionary man in this field who introduced new arithmetical and algebraic symbols, categorized algebra, worked on square root, classified fractions, gained familiarity with sequences, derived new formulae and wrote a number of books on different subjects especially mathematics. Al-Umawi, with the help of his writings on different sections of arithmetic exercised great influence on both the East and the West. He paid more attention on sequences and series and described many rules regarding perfect squares and cubes.

Muslim Spain serves as the most important learning centre that is credited to contribute in the renaissance of Christian Europe. It is because of the academic pursuits made by the scholars of Iberian peninsula in the Muslim period that all the works of different sciences were transmitted into Christian Europe, either in the form of translations, commentaries, summaries or editions. These
were the works of Greek scholars (with Arabic translations), the works of Eastern Muslims, North African Muslims and above all the writings of Spanish Muslims. As the ninth century is the period of translations of Greek, Hindu, Syriac and other works into Arabic, the twelfth century is regarded as the period of the translation of Arabic works to various European languages. With the help of these translations, summaries and commentaries the Christian scholars of Europe turned their continent from dark to enlightened. They, after their introduction into Europe started teaching students all of these sciences at primary, secondary and higher level. These studies turned into an educational movement in the whole Europe and with few hundred years, after getting acquainted with these sciences, they themselves started contributing with their researches and writings. This movement is still continued in the whole Europe, and of course, due to these people, in America, Canada and other parts of the world also.

Among the translators who translated the Arabic works into Latin and introduced them into Europe are Stephanus Arlandi, Alfred of Sareshel, Stephen of Saregossa, Deter Gallego, Salio of Padua, William of Lunis, Philip of Tripoli, Bonacosa, John of Brescia, Armengand, Herman the German, Moses of Palermo, Faraj ben Salim, Theodore of Antioch, Addard of Bath, Peter of Venerable, Domingo Gundisalvo, John of Seville, Hermann of Dalmatia Hugh of