

The Renaissance

EXERCISES

Question 1.

What it meant by Renaissance ?

Answer:

The term 'Renaissance' is derived from the Latin 'word 'Renascence'. It implies rebirth and it is used to describe the rebirth of thought and learning of Greco-Roman classics, revival of art and growth of humanism.

Question 2.

Why is Renaissance known as an Intellectual Movement?

Answer:

Renaissance is known as an Intellectual Movement because it brought new developments in the fields of literature, religion, philosophy, politics, art and science.

Question 3.

Mention any two causes that led to the advent of Renaissance.

Answer:

Two causes that led to the advent of Renaissance are:

1. The Capture of Constantinople by the Turks.
2. Decline of Feudalism.

Question 4.

Name the country where the scholars took refuge after the siege of Constantinople.

Answer:

After the siege of Constantinople, the scholars took refuge in Italy.

Question 5.

What caused the Greek scholars to come to Italy? Or Give an important reason why the Renaissance began in Italy.

Answer:

In 1453, the Ottoman Turks sieged the City Constantinople and the Greek scholars fled to Italy.

Question 6.

Who reached Kerala's coastal town of Calicut in 1498?

Answer:

Vasco-de-Gama, a Portuguese explorer reached Kerala's coastal town of Calicut in 1498.

Question 7.

How did the invention of printing press bring new awakening in Europe?

Answer:

The invention of printing press made it possible to product books in large numbers. The holy Bible and many other religious and classical books were printed and made available all over Europe.

Question 8.

Mention an outstanding impact of the Renaissance ii the field of literature.

Answer:

The use of native languages for literary writings.

Question 9.

Who wrote 'The Prince'? What is its importance?

Answer:

Machiavelli, wrote 'The Prince'. It influenced the polity o that time, suggesting that political matters should b separated from religion.

Question 10.

Who was the famous English poet and dramatist the 16th century?

Answer:

William Shakespeare was the famous English poet am dramatist of the 16th century.

Question 11.

Name any two literary works of Shakespeare.

Answer:

Shakespeare wrote 38 Plays, more than 150 Sonnets am many Poems. His historical dramas included Richard II Henry V and Henry VI. He also wrote tragedies, such a Hamlet and Macbeth.

Question 12.

Who translated the Holy Bible into German Language

Answer:

Martin Luther translated the Holy Bible into German Language.

Question 13.

Mention the names of two celebrated artists of the 16th century?

Answer:

Leonardo de Vinci and Michael Angelo.

Question 14.

Mention the contributions of:

- (a) Leonardo de Vinci.
- (b) Michaelangelo in the field of painting.

Answer:

(a)

Leonardo de Vinci was a great painter and sculptor, he painted famous pictures, 'The Last Supper' and 'Mona Lisa'.

(b)

Michael Angelo was also a great painter and a sculptor. The ceiling frescoes in the Sistine Chapel in the Papal palace of the Vatican was his masterpiece.

Question 15.

Name two famous sculptors of Italy.

Answer:

Lorenzo Ghiberti and Michael Angelo.

Question 16.

Mention the contributions of Lorenzo Ghiberti in the field of sculpture.

Ans.

The contribution of the mentioned sculptors is as follows:

Lorenzo Ghiberti:

He was a famous Italian sculptor. He worked for 20 years to make two pairs of bronze doors for the Baptistery at Florence.

Question 17.

Name the finest example of the Renaissance architecture in Rome.

Answer:

The St. Peter's Church.

Question 18.

What was the famous theory introduced by Copernicus?

Answer:

Copernicus was a Polish priest. He introduced the theory that it was not the Sun and the stars that move round the Earth, but it is the Earth that rotates on its axis around the sun.

Question 19.

Who invented the Telescope?

Answer:

Italian astronomer Galileo invented the Telescope.

Question 20.

Who proved the theory of Law of Gravitation?

Answer:

Sir Isaac Newton, an English scientist proved the theory of Law of Gravitation.

Question 21.

Mention two important effects or consequences of the Renaissance.

Answer:

Two important effects of the Renaissance are:

1. The Renaissance led to the Reformation Movement.
2. Great Outflow of Vernacular Literature.

Question 22.

Who discovered the Eastern Coast of Canada? What did it lead to?

Answer:

John Cabot, an Italian explorer discovered, the Eastern Coast of Canada. It enabled the British to claim much of North America.

Question 23.

Name the rulers who patronised the works of literature and art in Europe.

Answer:

Rulers like—King Francis I of France, King Henry VIII and Queen Elizabeth I of England, Charles V of Spain and Christian II of Denmark encouraged the movement.

STRUCTURED QUESTIONS

Question 1.

The 15th and 16th centuries are by and large regarded as the 'Renaissance Period'. In this context explain how each of the following led to the advent and growth of Renaissance:

- (a) Capture of Constantinople by the Turks
- (b) Decline of Feudalism

Answer:

(a) Capture of Constantinople by the Turks: In the years 1453, the Ottoman Turks captured Constantinople, the Capital of the Byzantine Empire which remained in Christian hands for more than thousand years. Its libraries contained the manuscripts of world-famous Greek and Roman writers. As the siege of the City began, the students and scholars fled with a number of priceless manuscripts. They went to various parts of Europe. They were especially welcome in Italy because, as George Guest puts it, "that land had already given birth to famous men of letters- Dante Petrarch and Boccaccio". Nobles, merchants and Churchmen flocked to the new teachers.

(b) Decline of Feudalism: Feudal lords had possessed huge estates, who exploited the peasants 'Social mobility' and progress were badly affected by this system. Freedom or equality of rights was denied. Towards 13th and 14th centuries, started the decline of feudalism. It led to develop the habit of free-thinking. It paved the way for New Learning. Consequently, new development came into being in the fields of art, literature, science and philosophy.

Question 2.

The word 'Renaissance' signifies the freedom-loving thoughts of man. In this context explain the role of

- (a) Original thinkers, and
- (b) Men with advanced scientific ideas in bringing about a spirit of Inquiry among people of Europe.

Answer:

(a)

During the Medieval Age, the Church discouraged original thinking and called upon scholars to put faith in the Church dogmas. However, original thinking could not be suppressed for a long time and certain bold and independent thinkers criticised the Church and asked the people to develop their own thinking. Thinkers like Roger Bacon,

Abelard. Thomas Aquinas revolutionised the thought process and laid great stress on reasoning.

(b)

Roger Bacon (1214-1294) was a thirteenth century scholar, but look at the 'modernity' of his thoughts in these words: "Machines for navigating are possible without rowers, so that great ships, guided by one man may be borne with greater speed than if they were full of men... Likewise, cars may be made." Similarly, "flying machines are possible, so that a man may sit in the middle turning some device by which artificial wings may beat the air in the manner of a flying bird." All the above thinkers are called the forerunners of Renaissance.

Question 3.

How did the following factors help in the advent and growth of Renaissance:

(a) New Trade routes between Europe and the East

(b) Invention of the Printing Press

Answer:

(a)

The Turkish invasion made trade in the eastern Mediterranean too risky. With the result, new trade-routes to India and the East were felt to come in force. 'Henry the Navigator', a royal Portuguese became the pioneer in the field of geographical explorations. He started a school for navigators. The sailors were taught how to make use of the Mariner's Compass and astrolabe. Many voyages were undertaken by his sailors along the coastline of West Africa. They discovered Azores and Material Inland and went as far as Sudan and Senegal. Bartholomew Diaz, a Portuguese, reached the southernmost tip of Africa, which came to be called 'Cape of Good Hope'. In 1497 Vasco-de-Gama, sailed across the Indian Ocean and reached Kerala's coastal town of Calicut in 1498. Two years later Cabral, a Portuguese Commander discovered Brazil in 1500. The urge of discovering new routes made Vasco-de-Gama discover India, while he went round the 'Cape of Good Hope' in 1498. Similarly, Ferdinand Magellan, a Portuguese nobleman, went around the Globe between 1520 and 1522. Italy became the centre of all trade routes. Christopher Columbus was the first to sail across the Atlantic Ocean, taking with him three ships— The Santa Maria, the Nina and Pinta. A voyage of two months led him and his crew members land on the island of Bahamas, which he named San Salvador. He visited Cuba and Haiti nearby and he called the people there Indians. He undertook three more sea-voyages and discovered Jamaica, Puerto Rica, Trinidad and the coasts of Venezuela. The coast, which he took for the Coast of Indies, was actually a new continent, which he had discovered unknowingly. Amerigo Vespucci, an Italian adventurer made four voyages to the region visited by Columbus. He gave a detailed description about the land and its people. This New World was named as America after Amerigo Vespucci. Magellan, in September 1519, reached the coast of South America and sailed down towards the south through straits now called Straits of Magellan. Finally, he reached the Philippines. He went ashore with his sailors. The natives attacked and killed him. Hernando Cortez a Spanish adventurer, made a normal

expedition to explore the coast of Central America. He landed the Coast of Mexico. The natives called Aztecs resisted his advance on their land, but he defeated them, conquering the Aztec Empire for the Spanish King John Cabot, an Italian explorer, was employed by the British King Henry-VII to discover the northwest route across the Atlantic. He reached the Cape Briton Island near Newfoundland. This discovery of the eastern coast of Canada enabled the British to claim much of the North America. Sir Francis Drake, an English sailor sailed around the globe between 1577 and 1580.

(b)

Invention of the Printing Press: In the middle of the 15th century, the invention of printing press played a vital role to enlighten the people on religious grounds. It enabled to produce books in large number. The holy Bible and many other religious and classical books were printed and made available all over Europe.

Question 4.

The Renaissance was a period of great intellectual activity. Given an account of the outstanding works of the following writers:

(a) Machivelli

(b) Shakespeare

Answer:

(a) Machivelli:

He was from Florence. He was a historian who is known as the father of modern political philosophy. In his work, 'The Prince', he dealt with political conditions that prevailed in the Italian states during the close of the 15th and early 16th century. His ideas and suggestions had a profound influence on the minds of political leaders and rulers in those days in Europe. He suggested that political matters should be separated from religion.

(b) Shakespeare:

The English poet, Chaucer (1340-1400) wrote the enjoyable 'Canterbury Tales'. Shakespeare, the famous English poet and dramatist of 16th century, through his outstanding contribution had elevated English literature to world status. He was the greatest poet and playwright, England had ever produced. John Milton's epic-poetry, 'Paradise Lost' elevated him to be a distinguished poet in England. His great works gave a great impetus to English literature.

Question 5.

The Renaissance artists tried to put life in canvas and stone. Describe their achievements in the fields of:

(a) Painting

(b) Architecture

Answer:

(a) Painting: The city of Florence (Italy), produced in the second half of the 15th century very great artists and painters.

1. **Leonardo de Vinci:** Leonardo de Vinci was a great painter, sculptor a great musician and a scientist. 'The last Supper' and 'Mona Lisa' are the great masterpieces of European art. New techniques were adopted in his paintings to give a fine feeling of reality.
2. **Michael Angelo:** He was painter of the first rank and also an outstanding sculptor. The ceiling frescoes in the Sistine Chapel in the papal palace of the Vatican was his masterpiece. His paintings were based on Biblical themes and the Grand Fresco of the 'Last Judgement' is considered the most famous painting in the world.
3. **Raphael:** He was a great artist of the Florentine school and his most celebrated painting was 'Sistine Madonna'. He lived several years in Rome in the service of Pope, decorating the Vatican and designing the St. Peter's Church. During the early Renaissance period, artists used to have their paintings based on the themes from the Holy Scriptures and covered the walls of churches and palaces, painting scenes depicting Biblical characters and events. With the revival of interest in old Greek and Roman mythology, later artists started painting of the themes from Christian Literature in Greco-Roman Style.

(b) Architecture:

The Renaissance architects rejected the Gothic style and accepted the Greco-Roman classical architecture. Some of the outstanding features of architecture were; imposing dome, round arches and tall columns. St. Peter's Church in Rome, which can hold 80,000 people is the finest example of the Renaissance architecture. Its grand dome which was designed by Michael Angelo rises to a height of more than 400 ft. above the ground level.

Question 6.

There was a splendid galaxy of scientific persons whose discoveries revolutionised our ideas of the universe. In this context mention the discoveries of the following men:

- (a) Copernicus
- (b) Galileo

Answer:

(a) Copernicus:

He was a mathematician and astronomer, who formulated a model of the universe that placed the sun rather than the earth at the center of the universe. The publication of this model in his book *De revolutionibus orbium coelestium* (On the Revolutions of the Celestial Spheres) just before his death in 1543 is regarded as a major event in the history of science, triggering the Copernican Revolution.

Copernicus based his Heliocentric theory on the following:

1. There is no one center of all celestial circles or spheres.
2. The center of the earth is not the center of the universe, but only of gravity and of the lunar sphere.
3. All the spheres revolve about the sun as their midpoint and therefore, the sun is the center of the universe.
4. The earth has more than one motion, turning on its axis and moving in a spherical orbit around the sun.

(b) Galileo:

Galileo, an Italian Astronomer (1564-1642) used a telescope, the greatest scientific instrument of the period, to study the movements of heavenly bodies for Copernicus' theory. Galileo was tried by the Church for challenging its belief and authority. His book was burnt. Three years later, Giordano Bruno was burnt in Rome by the Church for insisting that the Earth goes round the Sun.

Question 7.

Study this picture carefully and answer the questions that follow:

- (a) Give the name by which the portrait is known.
- (b) Name the artist who portrayed it?
- (c) Mention the main features of this painting?



Answer:

- (a) 'Mona Lisa'
- (b) Leonardo da Vinci (1452-1519)
- (c) His painting 'Mona Lisa' is a perfect depiction of beauty and harmony. In fact, it is more beautiful than any Creation of Nature. There is a mild smile on the face and with eyes, half closed and half revealing, as if she has something to say, the total effect is such as any heart could desire.

Question 8.

What were the effects of the Renaissance?

Answer:

The effects of the Renaissance were as follows:

1. **The Renaissance led to the Reformation Movement:** The urge to know the unknown by questioning, observation and experimentation brought an end to the supremacy and domination of the Church, which eventually led to Reformation.
2. **Great overflow of Vernacular Literature:** The Renaissance helped in the growth of vernaculars. In England, there was the famous Shakespeare and a contemporary of Shakespeare in Spain was Cervantes, who wrote 'Don Quixote'. In France, Moliere became the founder of the 'Comedie Francaise', the National Theatre.
3. **Consequences of Geographical Explorations:** Geographical discoveries, commercial relations were established between Europe and the East. Trade brought unprecedented prosperity to the countries of Europe. For England and Spain, America also yielded immense wealth. This led to Colonialism. European countries controlled America, Asia and Africa and used their resources to increase their own power.
4. **The Humanist's Belief in Man:** Earlier people subordinated themselves to the interests of the Church or the Class to which they belonged. Now, they began to look at themselves as 'Individuals'. They believed in man's ability to achieve happiness and freedom without the need for religion. The Renaissance art and literature reflected aspirations of the ordinary people at that time.
5. **Rise and Growth of Nation-States:** The feelings of nationality and progress of national literature led to the rise and growth of Nation-States.

ADDITIONAL QUESTIONS

Short Answer Questions

Question 1.

What is meant by the term 'Renaissance' ?

Answer:

The term 'Renaissance', means re-birth or revival. It stands for a complex transitional movement in Europe between medieval and modern times beginning in the 14th century in Italy and lasting into the 17th century.

Question 2.

Mention any two causes of the Renaissance.

Answer:

Two causes were:

1. The decline of feudalism gave way to 'Social mobility'
2. Co-operation of kings, nobles and wealthy people patronised this movement e.g. The Medici family of Florence patronised the Renaissance artists.

Question 3.

What role did the victory of the Turks over Constantipole play in the rise of Renaissance.

Answer:

Constantipole fell into the hands of the Turks in AD 1453. Many Greek and Roman Scholars were forced to Rome and other parts of Europe with their manuscripts. They spread the knowledge of Greek culture to European countries.

Question 4.

How did the decline of feudalism contribute to the rise of Renaissance ?

Answer:

Decline of feudalism in the 13th and 14th centuries provided an impetus to free thinking. The peace and freedom that prevailed after the decline of feudalism favored the growth of New Learning. It led to the new developments in the spheres of art, literature, philosophy and science and contributed to the rise of Renaissance.

Question 5.

Why did the Renaissance began in Italy ? Give two reasons.

Answer:

1. Italy was the seat of the glorious Roman Empire and all the historical remains and relics of the Roman were found there. These attracted a number of scholars and artists.
2. The enormous wealth which Italy had accumulated as a result of trade with the East also contributed to the rise of Renaissance.

Question 6.

How did the invention of the printing press bring in a new awakening in Europe ?

Answer:

The first printing press was set up in Germany in 1456 by Gutenberg. Later on, Caxton introduced it in England. The invention of printing press in the middle of 15th century in Europe made it possible to produce books in large numbers e.g. the Bible and many other religious and classical books ! were printed all over Europe.

Question 7.

Explain briefly the term 'Humanism'

Answer:

Humanism is derived from the Latin words 'Studia humanitatis', or 'the studies of mankind'. It meant a decisive shift in concern for human as distinct from divine matters. Humanism extolled man and stressed his essential dignity. It opposed religious asceticism. It defended his right to pleasure and satisfaction of earthly desires and requirements.

Question 8.

Who is known as the Father of Humanism ?

Answer:

Petrarch, a great scholar and writer, has been called 'the father of humanism'. His sonnets and lyrics were popular throughout Europe.

Question 9.

Mention any two factors that led to the growth of the spirit of enquiry among the people of Europe.

Answer:

The following were the factors which were responsible for the development of the spirit of enquiry:

(a) Crusades: The Crusades were the religious expeditionary wars with the goal of restoring the Church's access to holy places in and near Jerusalem. They brought the people of Europe into direct contact with the people of Asia, the Crusades brought to Western Europe ideas from the East. It widened their outlook on life and destroyed dogmatic attitude. People began reason rather than on blind faith.

(b) Development of Science: In the age of faith, science had little scope for development. But certain medieval scholars showed a scientific attitude and asked their students to observe things in nature. This brought in many new inventions and discoveries. Development of science created the spirit of enquiry and scientific temper. Roger Bacon contemplated the use of horseless carriages and flying machines. Copernicus proved that the earth moves round the sun. Galileo invented the telescope. These inventions broadened the mental outlook of the people and put an end to the old beliefs and traditions.

Question 10.

Mention the impact of the Renaissance in the field of English literature.

Answer:

The most significant impact of Renaissance was the use of local languages instead of Latin. England produced a number of writers, poets and dramatists, of repute. Geoffrey Chaucer "Father of English Poetry", "The Canterbury Tales", is his outstanding work. 'Utopia' written by Thomas More about an ideal island in America. Famous writers were Francis Bacon, William Shakespeare, Ben Johnson and Marlowe. 'Paradise Lost' is an immortal work of Milton. Edmund Spenser wrote the poem 'Faerie Queene'.

Question 11.

Mention the theory introduced by Copernicus.

Answer:

Copernicus proved that the earth moves round the sun.

Question 12.

How did Renaissance lead to the rise of monarchical form of governments in Europe.

Answer:

Renaissance provided great impetus to the evolution of strong monarchical system of Government in Europe. The decline of the authority of the Church and the feudal system strengthened the desire of the people to have peace, security and political stability. Thus, they readily provided support to the kings and enhanced the power of monarchs.

Question 13.

Mention two outstanding features of the Renaissance Art.

Answer:

1. Remarkable statues of bronze e.g. statue of David by Donatello and 'Pieta' by Michelangelo.
2. Lorenzo Ghiberti in Italy made two pairs of bronze doors for the Baptistery at Florence.

Question 14.

Mention any two consequences of the geographical explorations.

Answer:

The navigators of Portugal and Spain played an important part in the geographical explorations. Constantinople fell into the hands of the Turks in AD 1453, and so the trade sea-routes between the West and the East were closed. Hence, in search of new sea-routes

The following were the main discoveries:

1. Prince Hemy, the navigator of Portugal discovered a f sea-route to Africa.
2. Bartholomew Diaz was successful in reaching the Cape of Good Hope.
3. Vasco-da-Gama sailed as far as India in AD 1498.
4. Columbus discovered America in AD 1492.

Question 15.

Who wrote “The Canterbury Tales” ?

Answer:

Geoffrey Chaucer wrote “The Canterbury Tales”.

Question 16.

Mention two of the paintings of Michelangelo.

Answer:

The Last Judgement’ and “The Fall of Man”.

Question 17.

Mention any two statues sculpted by Michelangelo.

Answer:

Michelangelo was a painter, sculptor, architect and poet.

His famous statues are: Pieta; David and Moses etc.

II. Structured Questions:

Question 1.

Many factors contributed to usher in the spirit of Renaissance, which had far-reaching consequences for the entire world. In this context, write short notes on:

- (a) Invention of the printing press
- (b) Decline of Feudalism.
- (c) Capture of Constantinople.

Answer:

(a)

The invention of printing press in the middle of the 15th .century in Europe made it possible to produce books in large number e.g. the Bible and other religious and classical books. This brought a new awakening in life and thoughts in Europe.

(b)

Decline of Feudalism — Decline of feudalism in the 13th and 14th centuries provided an impetus to free thinking. The peace and freedom that prevailed after the decline of feudalism favored the growth of New Learning. It led to the new developments in the spheres of art, literature, philosophy and science and contributed to the rise of

Renaissance.

(c)

Capture of Constantinople – Constantinople was the capital of the East Roman Empire and was a center of Greek and Roman cultures. It had the valuable manuscripts of the Greek and the Roman writers. But Constantinople fell into the hands of the Turks in 1453. Many Greek and Roman scholars were thus, forced to shift to Rome and other parts of Europe with their manuscripts. Rome then became the center of Greek culture. These scholars were geniuses, men of liberal outlook, humanism and logical thinking. Wherever they went, they spread their new spirit and ideas. In this way they revived the interest of the people in the study of Greek philosophy, science, art and literature. The revival of the learning of Greek classics paved the way for the Renaissance.

2. Renaissance brought in a spirit of enquiry among the people of Europe. In this context, answer the following questions

Question 2(a).

How did the development of science create the spirit of inquiry ?

Answer:

Development of science created the spirit of inquiry and scientific temper. Roger Bacon contemplated the use of horseless carriages and flying machines. Copernicus proved that the earth moves round the sun. Galileo invented the telescope. These inventions broadened the mental outlook of the people and put an end to the old beliefs and traditions.

Question 2(b).

Explain briefly the role of original thinkers in promoting the spirit of enquiry among the people of Europe.

Answer:

During the Medieval Age, the Church discouraged original thinking and called upon scholars to put faith in the Church dogmas. However, original thinking could not be suppressed for a long time and certain bold and independent thinkers criticised the Church and asked the people to develop their own thinking. Thinkers like Roger Bacon, Abelard. Thomas Aquinas revolutionised the thought process and laid great stress on reasoning.

Question 2(c).

What was the role of Crusades in ushering in the spirit of inquiry ?

Answer:

The Crusades were the religious expeditionary wars with the goal of restoring the Church's access to holy places in and near Jerusalem. They brought the people of Europe into direct contact with the people of Asia. The Crusades brought to Western

Europe ideas from the East. It widened their outlook on life and destroyed dogmatic attitude.

3. Renaissance of lists tried to depict life on canvas and stone. With reference to this statement, describe the following:

Question 3(a).

Progress in the art of painting

Ans.

The art of painting raised to a significant level and depicted various real pictures of life appreciated by the people who also got inspiration from the lively paintings. The artists used geometrical ratios in paintings along with human anatomy for gestures and expressions.

The famous artists and paintings are:

1. **Leonardo da Vinci (1452-1519)**- 'Virgin of the Rocks', 'Last Super' and 'Mona Lisa' etc.
2. **Michelangelo (1475-1564)**- 'Last judgement', 'The Fall of Man'.
3. **Raphael (1483-1520)** – 'Sistine Madonna' and Designing of St. Peter's Church.

Question 3(b).

Progress in the art of sculpture.

Answer:

The revival of the study of antiquity left a great impact in the field of sculpture. Some of the Renaissance artists copied the great masterpieces of the Greeks and Romans, while the others produced outstanding pieces which could rival the Greek creations.

Some of the outstanding sculptors of the Renaissance period were:

1. Donatello (1386-1466) – bronze statue of David.
2. Lorenzo Ghiberti, bronze doors for Baptistery at Florence.
3. Michelangelo, 'Pieta', showing Mother Mary and Jesus. Statues of David and Moses.
4. Many Italian sculptors worked to decorate Church and palaces. In this way architecture developed was very much in this period.

Question 4.

Renaissance was a period of intellectual activity. In the context, write briefly on the impact of Renaissance on

Science under the following heads:

- (a) Progress in astronomy
- (b) Progress in medicine.
- (c) Progress in mathematics.

Ans.

(a)

Copernicus (AD 1473-1543), held that the earth was round and earth, the moon and other planets moved round the sun in a circle. Later on, German Scientist John Kepler (1571-1630) proved that the earth and the other planets move round the sun not in a circle but in elliptical orbits. Italian Scientist Galileo (1564-1642) invented telescope. Sir Isaac Newton (1642-1727) discovered the law of Gravitation.

(b)

Great discoveries were made in medical sciences.

1. Vesalius (1514-1564) wrote a treatise on anatomy.
2. William Harvey (1578-1657), discovered circulation of blood from heart to all parts of the body and back to the heart.
3. Paracelsus (1493-1541) proved a close connection between medicine and chemistry.
4. Cordus (1515-1544) prepared ether from alcohol and sulphuric acid.
5. Helmontt (1577-1644), discovered carbon dioxide.

(c)

Arabs gave Algebra and numerals to the West. Modern Geometry was made systematic by Desargues (1593-1662). Stevin advocated decimal system of coins, weights and measures.