

SOCIAL SCIENCE

STANDARD NINE

TERM II

HISTORY

1. BEGINNING OF MODERN AGE

Introduction

The transition from mediaeval “Dark Age” to Modern Age is caused and marked by certain new trends and the developments such as Renaissance, Humanism, Spirit of Enquiry, Geographical Discoveries and Reformation.

The ancient period in European history came to an end in 476 A.D. with the collapse of the mighty Roman Empire. The barbarians who pulled down the empire had no taste for the pursuit of classical languages and fine arts. The neglect for learning immersed Europe in ignorance and darkness. But at the beginning of the 16th century, a renewed interest in the study of Greek and Latin brought about the age of reason. The Renaissance marked a reaction against established conventions. A spirit of enquiry developed. People began to doubt, question and challenge instead of blindly believing anything that was taught by the church. This spirit of enquiry stimulated the progress of science, architecture, sculpture, painting, literature, geography, religion, etc.

Renaissance

Renaissance means revival or rebirth. It marks the age of reason and the revival of classical Greek and Roman spirit.

Renaissance signifies, “emancipation and expression”. On the intellectual side, it marked the revival of literature and art, on the political side it marked the death of the universal

authority of Pope, the emergence and the consolidation of well organized nation states. Socially, it marked the spirit of individualism and the recognition of man as an individualism and the recognition of man as an individual in a society. Ecclesiastically, it marked the crumbling of the idea of the universal church and emergence of the national churches.

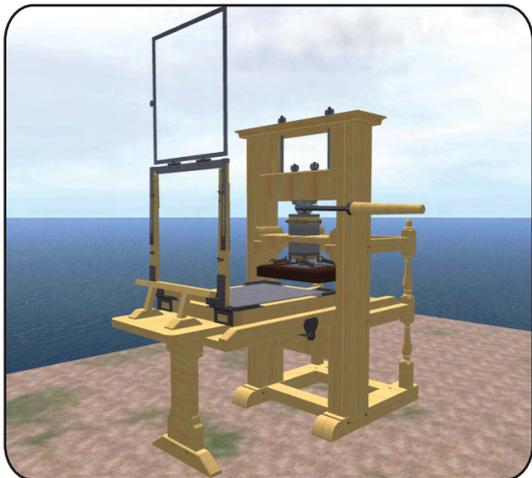
Renaissance in Italy

Italy, “the school of Europe”, was the birth place of the Renaissance. Feudalism failed to take deep roots in Italian soil, in the middle ages. The nobles and the church controlled the activities of the people. In due course, the death knell to feudalism was sounded by the Crusades. The crusades were associated with the invention of gun powder and the growth of nation states and towns with power and independence. Northern Italy was in a position to patronize art and literature. Moreover, Italy was the seat of an ancient civilization which reminded the people of “The Grandeur that was Rome”. The renaissance scholars wrote in the vernacular languages which appealed to the masses. The absence of a strong centralized monarchy in Italy provided excellent opportunities for intellectual outbursts. Renaissance as a movement began in the 14th century with the publication of the “Divine Comedy” by the greatest Italian poet Dante and reached its culmination in the next century.

The Renaissance movement comes under two broad divisions, namely humanistic phase or the revival

of classical learning and literature and the regulation of classical art. The first great pioneer in this line was Petrarch. He collected the classical manuscripts written by Plato, Cicero and others. He gave a new life to the ancient classics. Boccaccio, the disciple of Petrarch followed the footsteps of his master.

The humanistic movement was accelerated by the capture of Constantinople by the Turks in 1453 A.D. The invention of the printing press helped in the production of cheap books. It considerably helped the cause of humanism.



Printing press

Renaissance also left its mark on the artistic side. The barbarians destroyed most of the remnants of culture of ancient Greece and Rome in the middle ages, the Church controlled all the cultural activities of the people. Art was influenced by the church. The works of art were created mainly with the object of perpetuating religion. Renaissance created a spirit of devotion towards the Greek art and literature in the hearts of the people. Gradually Romanist spirit began to find expressions in the arts, even in religious subjects. Leonardo da Vinci was a versatile genius, a writer,

scientist, inventor, engineer, architect and painter. Architecture, sculpture, painting, music and other fine arts progressed tremendously though the influence of Christianity was very visible on the arts of this time.



Last Supper

Michael Angelo, Leonardo da Vinci, Raphael and Titian were the great painters of the time. The most remarkable painting of Michael Angelo was the "Last judgment".



Mona Lisa

Leonardo da Vinci's famous paintings are "Mona Lisa" and "Last supper", Raphael was famous for his paintings of "Madonnas". Titian was noted for his mastery of colour. Peter

Brueghal, the Elder's genre paintings depicted scenes from robust peasant lives.



Madonnas

Sculpture and Paintings

The sculptors produced works of greater beauty and originality. In architecture, the architects turned to classical models.



St.Peters Cathetral



Michelangelo's Paintings

The best specimen of the architecture of the period was St.Peter's cathedral at Rome. Michelangelo's "Moses" is a remarkable sculptural expression of the time.

Music

Music also made tremendous progress in the fourteenth century. People began to take interest in instrumental music rather than vocal. Various changes occurred in the system of music. Like other arts, Italy led the path in music. Music was liberated from the monopolistic cultures of the church. New song forms and new musical instruments helped the emergence of secular music.

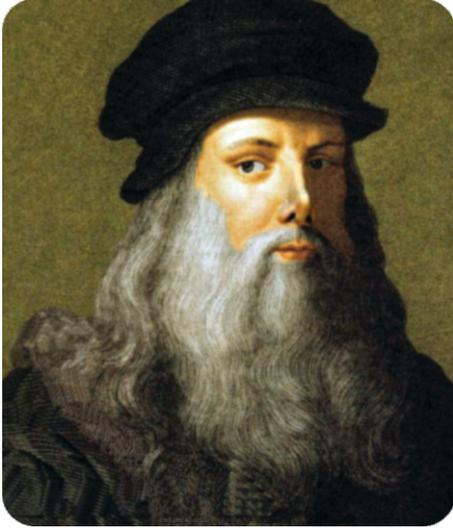
Rise of Humanism

A shift from God centred and Church centred literary activities to human centred literary trends is known as Humanism. The spirit of Humanism was found in ancient Greek and Roman literature. But in the medieval age owing to the influence of church the spirit of spiritualism, escapism and worship of God become quite popular and people began to think more of the other world than this one. Owing to the influence of Renaissance, people began to take an interest in ancient Greek and Roman literature. They also began to take an interest in expression of humanism and their interest in the mediaeval culture and civilization diminished.

Humanism

Petrarch is supposed to have been the original thinker who preached Humanism. Dante and other supporters were his followers. The contemporary ruler of Florence, Lorenzo de Medici was the great patron

of scholars. He provided shelter to various authors of Humanism.



Leonardo da Vinci

Humanism spread from Italy to other countries of Europe. Michelangelo, Machiavelli, Leonardo da Vinci, Donatello Botticelli, Robbia, Fincino were some significant writers of Humanism. Andrew Vesalius, a doctor to Emperor Charles wrote "Seven Books on the Structure of the Human Body" Leonardo da Vinci drew a sketch of the future airship.



Andrew Vesalius

Human happiness and progress were the core objectives of the ancient

Graeco Roman literature. The church controlled medieval society encouraged and patronized only such literature that was agreeable to the interests of the church. Life was portrayed as devoid of any worth. Pursuit of happiness was treated as a sin. Pessimistic spiritualism found expression in all church sponsored literature. The rediscovery of the Graeco Roman spirit of Humanism inspired a new human-centred literary trend in Europe.

Science

The Renaissance spirit affected the field of science also. Friar Roger Bacon, the Father of modern sciences, was the greatest medieval exponent of observation and experiment. His writings developed a critical and scientific spirit. Notable contributions were made in astronomy, mathematics, chemistry, physics and medicine. Copernicus discovered that the earth revolves round the sun. Galileo perfected the telescope.



Galileo's Telescope.

Both contributed to the heliocentric theory. Earth is the centre of the universe. Newton discovered the “law of gravitation”. Kepler laid the foundation, of Mathematical Astronomy.



Kepler

It was also an age that witnessed the invention of printing. Far-reaching results were achieved in geographical discoveries. Columbus, Vasco-da-gama and Magellan were the greatest figures in this field. The invention of mariner's compass (in China) was of immense help to the sailors, especially in their voyages to the south of the Equator.

Results of the Renaissance

1. The study of classical languages developed a spirit of enquiry in the minds of the people. Instead of blindly believing what was written by others, they began to doubt, question and argue which enabled them to arrive at the truth. The quest for truth brought about profound changes in science, art, politics, religion and literature.
2. Renaissance created a passion for reason in the minds of the people.
3. The Renaissance kindled the creative talents of the people and slowly paved the way for many inventions and discoveries.

4. Before the Renaissance the ruins of Greece and Rome had no fascination for the people. But after the Renaissance the people evinced keen interest in the ruins. Thus, the science of archaeology came into existence.

5. The reasoning spirit opened new opportunities for the people to find our loopholes in religious beliefs. The invention of the printing press helped to publish books on a large scale.

6. The new inventions, discoveries and writing of eminent men completely changed the outlook of the people towards the state. It developed a sprit of nationalism and individualism. It resulted in the emergence e of nation states such as England, France, Holland, Portugal and Spain.

7. The study of the old classics which ran counter to Christian ideals greatly weakened the church and revived the spirit of Humanism.

8. The study of history became more scientific. The Renaissance resulted in “Humanism” which was noted for its sympathetic and devoted approach to mankind.



Erasmus

9. The Greek and Latin classics were humane in nature. The protagonists of this culture were

called “Humanists”, and their subjects “Humanities”.

“Humanism, whose seed was sown by Petrarch in the fourteenth century and whose fruit was plucked by Erasmus in the sixteenth century. Humanism still lives in higher education in Europe and America”.

Reformation

The term 'Reformation' refers to the religious reform movement in the Catholic Church which led to the rise of a new section of Christians known as Protestants. These Protestants broke away from the Roman Catholic Church in order to form new churches on nationalist lines. Though reformation was a religious movement it was an outcome of the socio, economic and political conditions that prevailed in the sixteenth century.

During the medieval period the Church had developed a powerful hierarchy led by the Pope (Bishop of Rome) and assisted by cardinals, archbishops, bishops and priests. Every Christian had to perform seven sacraments in his life time with the assistance of the priests of the church. Hence, the church had acquired absolute authority to control the personal lives of Christians. The church exploited Christians by all means.

Religious appointments were sold and those who purchased the positions charged high fees for the services they rendered. The new learning promoted by the Renaissance and growth of capitalist tendencies influenced some of the clergymen. The popes and higher clergy lived like princes. They indulged in corrupt practices to amass wealth. They lived a life of opulence, immorality, running gambling houses and keeping mistresses. Dispensations which exempted people

from certain laws of the church were sold. Moreover any opinion or doctrine contrary to the church dogma was considered heretical. Such heretics were burnt at stakes. For example John Huss was burnt at the stake in 1415.A.D.

The growing nationalist sentiment also worked against the church. Powerful dynasties were emerging in Spain, France and in various parts of Europe which resisted the overlords of Rome. The church collected various taxes and a large portion of this was sent to Rome, the head quarters of the Catholic Church. Christians of various countries like Germany, England, and Netherlands etc. disliked this practice. The rulers of various countries resented the control of the church on their royal authority, and the church lands being exempted from royal taxes.

The immediate cause of the Lutheran revolt was the issue of 'sale of indulgences', A magnificent church known as St.Peter's church was being built by the Pope. A lot of money was



Martin Luther

required for the building of that church. The Pope ordered the subordinate churches to raise funds for the construction of that church Johann Tetzel, a Dominican friar, in order to raise funds, sold indulgences for the remission of the penalty for the sins in the purgatory. The quantum of remission would be in proportion to the amount of money spent for the purchase of 'indulgences'. Such vulgar salesmanship of the clergy shocked Pious clergy like Martin Luther who raised a banner of revolt against the corrupt practices of the Roman Catholic Church.

In 1517, Martin Luther nailed his protest against the indulgences in the form of 95 theses to the door of the Wittenberg church in Saxony. His protest theses were translated, copied, and circulated widely in printed form. In 1520 Luther published three pamphlets

i.e 1) AN ADDRESS TO THE NOBILITY OF THE GERMAN NATION.

2) ON THE BABYLONIAN CAPTIVITY OF THE CHURCH AND

3) THE FREEDOM OF THE CHRISTIAN MAN.

In his writings Luther questioned the



Pope Leo X

authority and relevance of the Pope and church councils.

Pope Leo X, through a Papal bull (papal order in a sealed cover) threatened Luther with excommunication if he failed to recant. But Luther was encouraged by the support of the German people and princes, defied the authority of the Pope and burnt in public the papal bull and some books of canon law. This "burning of the books" symbolized the 'declaration of independence' of the German principalities from the control of the Roman Pope.



Charles V

Charles V, the Holy Roman Emperor, summoned Luther to an imperial Diet (Assembly) at WORMS, and asked Luther to recant.

Supported and protected by German princes led by Frederick of Saxony, Luther refused to retrace his step. Lutheranism refused to accept the mediatory role of the Roman Church, reduced the sacraments from seven to three (i.e baptism, marriage and communion) condemned monasticism (and the clergymen were to marry) and adopted native German language for religious and secular

purposes. The German princes and nobles also took possession of the church lands. In 1529 the Lutheran princes defined an imperial edict asking them to suppress Lutheranism-made a formal 'protest' that "they would remain loyal to the God rather than to the Emperor". Hence the Lutherans were called 'protestants'.



Ulrich Zwingli

Ulrich Zwingli in Zurich (Switzerland) and a French clergy John Calvin, who fled to Switzerland similarly raised 'protests' against the papal order and more or less toed the lines of Martin Luther. All of them wanted the church to be restored to its early purity and simplicity. In England the Tudor King, Henry VIII quarreled with the Pope Clement VII, on the question of securing papal sanction for his divorce with Catherine and marriage to Anne Boleyn. He pressurized the English church to break away from Rome in 1533. In the succeeding year the 'Act of Supremacy' of the Parliament made the English king the supreme head of Anglican Church. Thus a clerical protest against Roman Catholic Church resulted in the emergence of non-Latin national states and non-Catholic Christian sects in Europe.

Counter Reformation

The triumphant progress of Protestantism was viewed with great concern and fear by the Roman Catholic Church. The aim of the counter-reformation was primarily to restore the Church to a condition of Pristine purity and sublime holiness. The church stood in dire need of protection from within and without. Before things went out of control, it took drastic measures to arrest the onward march of Protestantism. It also committed itself to the purification of the Church. This movement for reform within the church and the steps taken by it to arrest the growth of Protestantism came to be known as Counter-Reformation.

Society of Jesus

Ignatius Loyola and the Society of Jesus(1491-1556)

Ignatius Loyola, a Spanish nobleman, was born in 1491. He became a soldier and served Emperor Charles V by fighting for the French. He was wounded in a battle, and during the period of treatment he had strange religious experiences. He underwent a great transformation after studying the



Ignatius Loyola

works relating to the lives of Jesus Christ and order saints. He founded a religious order known as the Society of Jesus with papal consent and enrolled sixty members (Jesuits) who were subjected to more religious discipline and training. Each member had to undergo Loyola's spiritual exercises and in 1540, the Pope sanctioned increase in the strength of Jesuit members. The Jesuits, who swore to lead a life of poverty, chastity and "service to god and Christianity", spread themselves throughout the European continent and worked tirelessly with great zeal as missionaries. They spread the message of Christ, and opened schools everywhere. The Jesuits were the agents in propagating the counter-reformation. The Jesuits in their missionary activities achieved remarkable success. The Jesuits did yeomen service for the cause of Catholicism.

The Council of Trent

The Council of Trent (1545 – 63) aimed at reforming the Catholic church. Though it failed to bring about unity in Christendom, it gave a clear definition to Catholic doctrines; the council marked the triumph of populism. After the Council of Trent, the Pope was recognized as the supreme arbiter in religious matters as far as Catholicism was concerned. Evil and unworthy priests were to be removed. Celibacy was enforced. The service-book of the church was completely renewed and the Bible was revised.

The inquisition

In order to root out heresy, the church-court-'inquisition'-meted out brutal punishments to people who wavered in their allegiance to the

Catholic faith. The Spanish inquisition was founded during the time of Ferdinand and Isabella. Torture was used to extract confession.

The Church also prepared an 'Index' of hierarchical books and passages and such hierarchical writings were prohibited for the believers.

Geographical Discoveries

The age of Renaissance has removed all the mediaeval ideas from the mind of the people and it fostered a spirit of adventure among the people of Europe to explore unknown distant lands in various parts of the world.

Knowledge about Earth

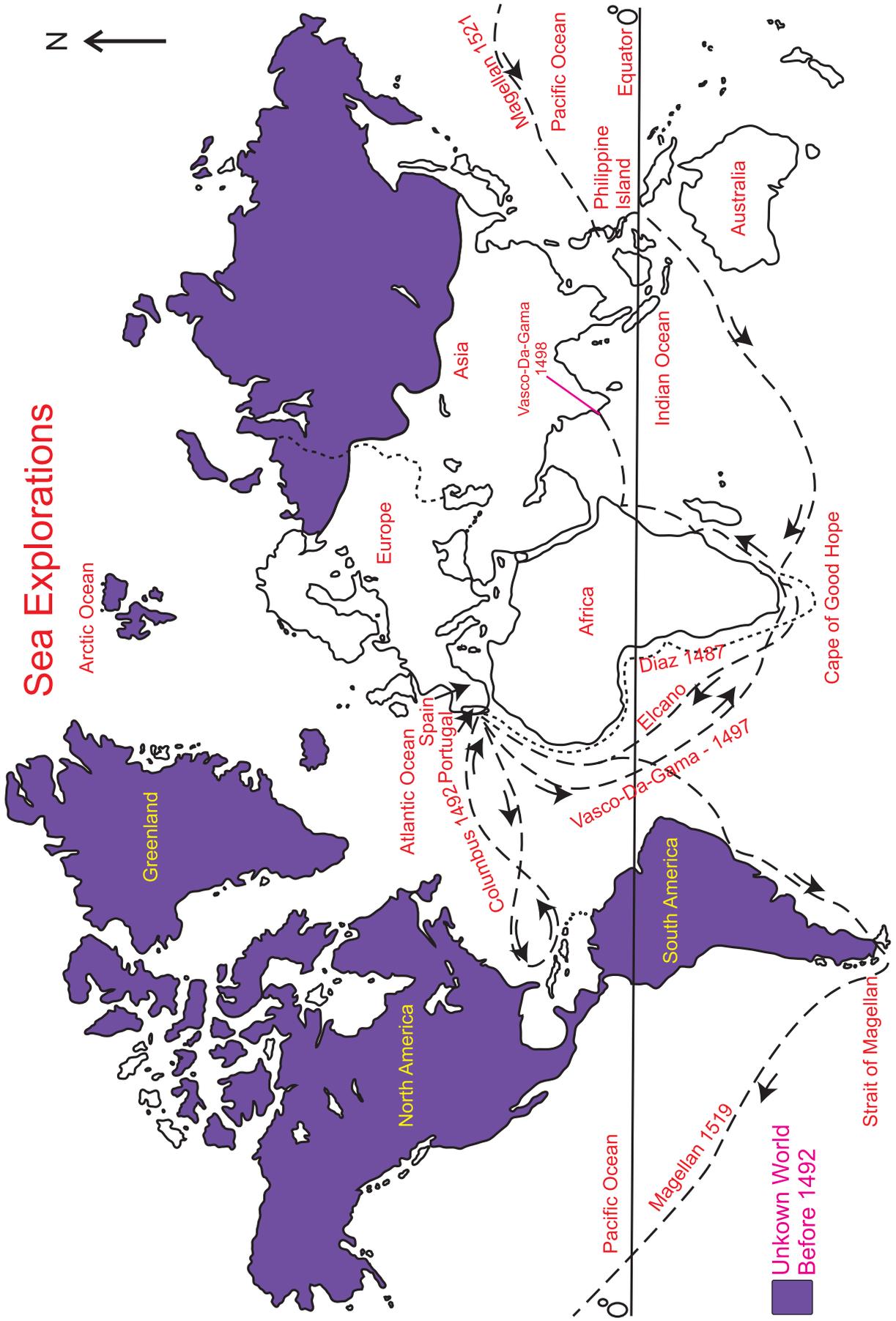
During this period the scientists discovered that the earth is spherical in shape. So the sailors concluded that they might return to the same point from where they began their journey. It encouraged them to travel.

Scientific insertion contributed to development in the modern era. Among all these inventions, the invention of Mariner's compass was the most significant one. It is an instrument meant to know the directions. Its needle always points towards north. It saves the people at sea especially to



15th century ship

Sea Explorations



the south of Equator from getting People dared travel to distant places because they had the correct knowledge of geographical directions.

In the 15th century after the occupation of Canary Islands, the Portuguese began to make efforts to explore the western side of Africa. Prince Henry a Portuguese made great efforts in this direction hence known as Henry the Navigator (1394-1460). He started a school for navigators and encouraged extensive exploration. The sailors were taught how to make use of the Mariner's Compass and astrolabe. His sailors undertook many voyages along the coast line of West Africa. They discovered Azores and Madeira Islands and went as far as Sudan and Senegal.

After the fall of Constantinople in 1453 to the Ottoman Turks, it had become impossible to travel to Asia from Europe. It endangered the spice trade of the Europeans; Until then the Arabs were the intermediaries in spice trade. Hence the Europeans had to search for new sea routes in order to reach Asia and to amass wealth. They sought royal patronage to undertake long voyages to find our new routed to India and Cathay (China).

The geographical imagination of Europe was enormously stimulated by the Mongol conquests. The desire for foreign travel and commerce was greatly encouraged by the Crusaders. The overland journey of a small party of Venetians, of which Marco Polo's travel to Cathay (China) at the end of the thirteenth century was a bold undertaking.

Remarkable discoveries were made during the second half on the 15th

century. Bartholomeo Diaz a Portuguese, reached the southern most tip of Africa, which came to be called the 'Cape of Good hope'. In 1497, Vasco da Gama, a Portuguese explorer, sailed across the India Ocean and reached Kerala's coastal town Calicut in 1498. His discovery of new sea route to India was a remarkable achievement.



Vasco da gama

Christopher Columbus, was an Italian but his voyages were financed by the Queen of Spain. He was the first to sail across Atlantic Ocean in 1472, with three ships-The Santa Maria, the Nina and the Pinta with 88 crew members.



Columbus

He reached America on 11th October 1492 after great difficulties. This was the most significant discovery of Columbus and it came to be known as 'The New World'.

Fernando Cortez, a Spanish adventurer made an expedition to explore the coast of Central America and discovered Mexico and Peru surrendered to Pizarro in 1530. The discovery of Mexico and Peru caused a steady stream of gold and silver to flow across the Atlantic to Spain.

Ferdinand Magellan, a Portuguese in the service of Spain, reached and named the Pacific Ocean.

Amerigo Vespucci, Italian adventurer, made four voyages to the region visited by Columbus. He gave a detailed description about the land and its people.

Martin Wald Muller, a German cartographer was drawing a map of the world and he named the New World-America after Amerigo Vespucci.

For commercial prosperity and imperialism both Portugal and Spain divided the world between them with the help of the Pope. Africa, Asia and Brazil were given to Portugal and Spain established control over parts of Northern and Southern America and Spaniards poured there in great numbers, in search of gold and silver. Spain amassed a lot of wealth. It lured the other countries of Europe to establish their colonies in the New world especially France. England and Holland the countries began to fight among themselves for territories in the American Continent.

EXERCISE

1) Choose the correct answer.

- 1) The birth place of the Renaissance was _____.
a) Italy b) Germany c) England d) Austria
- 2) _____ was responsible for the Reformation.
a) John Huss b) Martin Luther King c) Zwingli d) Calvin
- 3) Constantinople was captured by the Turks in _____.
a) 1452 A.D. b) 1553 A.D. c) 1453 A.D. d) 1353 A.D.
- 4) Mona Lisa was painted by _____.
a) Micheal Angelo b) Raphael
c) Titian d) Leonardo da vinci
- 5) The religious order known as the society of Jesus was founded by _____.
a) Martin Luther b) Charles-V
c) Zwingli d) Ignatius Loyala

- 6) Vasco da Gama reached Calicut in _____.
a)1498 b)1497 c)1496 d)1499

II) Match the following.

- | | |
|----------------------|--------------------------|
| 1) Dante | Father of modern science |
| 2) Michael Angelo | New scientific invention |
| 3) Roger Bacon | America |
| 4) Mariner's Compass | Last judgment |
| 5) Amerigo Vespucci | Divine comedy |
| | Last supper |
| | New sea route |

III) Write Short Answers.

- 1) Define – Renaissance.
- 2) What were the two broad divisions of the Renaissance movement?
- 3) Write a short note on Painting during the Renaissance period.
- 4) What were the important scientific inventions during Renaissance period?
- 5) Write a note on indulgence.
- 6) The council of Trent – Define.
- 7) Write a note on Henry the Navigator.
- 8) What were the effects of the new voyages?

IV) Answer all the questions given under each caption.

1) Renaissance in Italy

- a) Which Country was known as the school of Europe?
- b) Who was the first great Pioneer of classical art?
- c) Name the author of “Structure of the Human Body”.
- d) Who was noted for his mastery of colour?

2) Reformation

- a) What was the immediate cause of the Lutheran revolt?
- b) Who were the 'Protestants'?
- c) What were the Sacraments that were reduced from seven to three?
- d) Who was Johann Tetzel?

3) Society of Jesus

- a) Who founded the Society of Jesus?
- b) In which year it was founded?
- c) How many members enrolled in the Society of Jesus?
- d) Who were the agents propagating the Counter Reformation?

4) New discoveries

- a) Who named the Cape of Good Hope?
- b) What was the name of Christopher Columbus's discovery?
- c) Name the three ships used by Christopher Columbus.
- d) Which Portuguese explorer named the Pacific Ocean?

V) Answer in a Paragraph.

- 1) Write a paragraph on Humanism during the Renaissance period.
- 2) What were the Results of the Renaissance?
- 3) What were the services of Martin Luther against the corrupt practices of the Roman Catholic Church?
- 4) Write a note on 'The inquisition' and 'Index'.
- 5) What were the causes for the Geographical Discoveries?

FORMATIVE ASSESSMENT

- 1) On an outline map of the world trace the routes taken by
 - a) Christopher Columbus.
 - b) Magellan.
 - c) Vasco da Gama
 - d) Bartholomeo Diaz.
- 2) Collect pictures of the famous paintings of
 - a) Michael Angelo
 - b) Leonardo da vinci
 - c) Raphael
 - d) Titian and paste them in your scrapbook.
- 3) Find out more information on the Society of Jesus and their work in India.
- 4) Choose any one painting of Leonardo da vinci or Michael Angelo and write a paragraph on why you think it is so famous.

2. THE INDUSTRIAL REVOLUTION

The Industrial Revolution which took place in England fundamentally changed the industrial, commercial, political and social life of the western world. The term Industrial Revolution is used to express the adoption of system of making things on large scale in factories. **The term Industrial revolution refers to the shift from an agrarian, handicraft, labour intensive economy into one dominated by machine manufacturers, factories and a free flow of capital.** The capitalist procured raw materials and supplied it to the artisans and craftsmen who manufactured products in their houses. New inventions were taking place in different areas, which gave birth to machines. The machines changed the entire method of production. The revolution was completely economic in nature. There was no violence, no bloodshed, it was a peaceful process of industrial transformation. The French writer Blanqui first coined the term Industrial Revolution.

Factors responsible for Industrial Revolution

In the 18th century many innovations in agricultural methods and organization has brought about far-reaching changes. The traditional patterns of farming were breaking up. Agriculture became more and more a capitalist enterprise. Peasants freed from manorial obligations joined the ranks of entrepreneurs and tenants. The demand for English goods went on increasing. The expansion of commerce was the result of the discoveries of new lands and new sea routes. The population in European

countries expanded rapidly due to factors. More efficient agriculture and better food distribution reduced malnutrition which meant more births. The progress of science revolutionised the methods of production. These conditions and many natural advances were favourable for the beginning of an Industrial Revolution.

The widespread production of rural handicrafts provided the foundation for the rapid expansion of trade. This expansion resulted a search for new markets. The capitalists encouraged the scientists to invent machines. Further, the European countries exploited the colonies and their exploitation gave birth to capitalism. The capitalists wanted production of more goods in order to gain more profits and for this they required factories. With the help of newly invented machines, the people produced goods on large scale. These factors helped the rapid industrial changes in Europe. Before the Renaissance scientific knowledge was not put into practice, but now there was awakening all around.

England in the 18th century was in a most favourable position for an Industrial Revolution. It had become the leading maritime and colonial power of the world. Here colonial and naval supremacy provided an incentive for the development of industries as the colonies provide raw materials as well as markets. Britain also possessed many natural advantages, her coast line and climate promoted trends towards industrialisation. The role played by private enterprises in England's economic developments

was extraordinary and unique. The engines of the industrial revolution made England rich and powerful. Many protestant artisans of Spain and France migrated to England due to religious persecutions. The English government provided them shelter and monetary help and in return made full use of their skills. It gave an impetus to industrialization in England.

Scientific Inventions and Technological Developments – Revolution in the Textile Industry

The industrial revolution brought a change from handicrafts to machine manufacture and from human or animal power to other forms of energy such as steam. The cotton textile industry was the first to gain momentum from the outburst of inventions. **John Kay's** (1733) “Flying Shuttle” speeded up the process of weaving and thus increased the demand for thread. **James Hargreaves's** “Spinning Jenny” and **Crompton's** “Spinning Mule” (1779) supplied the demand for thread. **Cartwright's** “power loom” (1785) improved weaving methods. **Whitney's** “cotton gin” (1793) made a large and cheap supply of raw cotton for spinning. **Elias Howe** invented the “sewing machine” (1846).

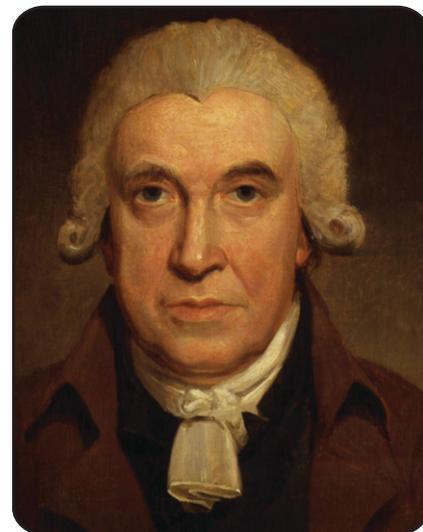
Inventions of Power

The most important invention of the Industrial Revolution was the steam engine. **James Watt** studied Newcomen's steam engine and invented a new steam engine in 1769. Steam replaced horse and water power in the textile industry. **George Stephenson** invented the steam locomotive engine in 1825. In 1830, the first passenger railway between Manchester and Liverpool was

operated. The steam printing press in 1814 decreased the cost on printed materials. Later on **Faraday** invented the dynamo.



George Stephenson



James Watt

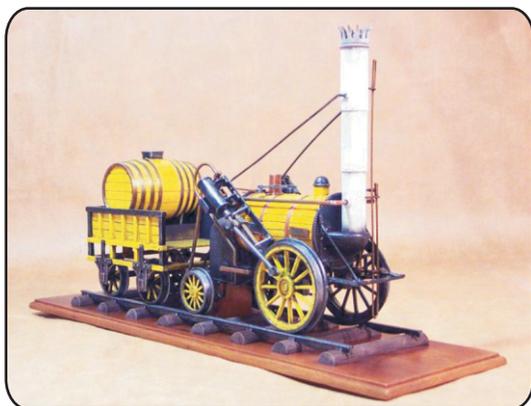
'An Improver of the Steam Engines'

Abraham Derby experimented to substitute coke for charcoal for smelting iron ore. In 1760, **John Smeaton** improved the “Derby process” with the addition of water power. **Humphrey Davy** invented the miner's safety lamp which enabled the miners to do their work safely. In 1784, **Henry Cort** introduced the puddling process for the purification of pig iron.

In 1855, **Bessemer** invented a new method of making steel. From this time onward coal and iron went hand in hand with steam as the foundation of industrialisation.

Revolution in Transport

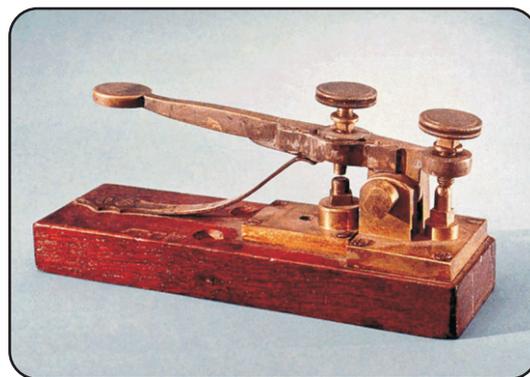
Changes in mining and metallurgy speeded changes in other industries especially transportation and communication. **John Metcalfe and John McAdam** made tremendous improvements in road making. McAdam devised the method of making pucca roads, which were called “macadamised” roads. **James Brindley** constructed a network of canals in important towns like Birmingham, London, Liverpool, Manchester, etc., any they were soon linked by canals.



Steam Engine

Revolution in the means of Communication

'**Sir Rowland Hill**' invented the “penny post system” by which the business men were able to carry on their correspondence with their customers and clients from far and near. **Morse** invented the method of sending messages through telegraph wires. In 1835 the first electric telegraph came into existence. Point for Discussion- present state of Electric Telegraph in India.



Electric Telegraph

Revolution in Agriculture

The revolution in agriculture had started before the industrial revolution. New farm machinery included the steel plough and the harrow for breaking the ground, the mechanical drill for seeding and the horse drawn cultivator to replace the hoe. There were also machines for reaping and threshing. The practice of crop rotation was adopted to maintain soil fertility. **Clover**, one of the plants which add fertility to the soil was cultivated. Land owners in England began to enlarge their farms. The strips that lay scattered about the village were also consolidated so that they could hold all their lands in one piece thereby increasing the production.

Effects of Industrial Revolution- Social Effects

The industrial Revolution left a deep impact on all facets of European life. The changes in agricultural production, business organization and technology had revolutionary effects in society and politics. People were drawn from the country side into cities thus during to a number of industrial towns. The overcrowded towns lacked sanitary amenities. Air, water and noise pollution affected the health of people. The Industrialists found it more profitable to employ women and

children in their factories. Mass underemployment became one of the greatest social problems. It also destroyed the old division of the society and created two distinct classes, the 'capitalists' and the 'Labours'. The division of people into 'haves' (rich) and "have nots" (poor) became pronounced. As industries developed in many of the European countries, they were forced to set up their colonies in other continents to get raw materials and to sell their goods. This search for colonies led to colonial imperialism.

Political Effects

The emergence of big towns necessitated parliamentary reforms. A number of parliamentary reforms were introduced. The factory acts were passed in 1819, 1833 and 1837 to improve the condition of labourers and to give them protection from the exploitation of capitalists. In 1825, trade unions were organized to fight for their rights. It also gave rise to ideas of rationalism and internationalism through means of communication and transport. This also gave rise to the demand for democratic government on an economic basis i.e. Socialism.

Economic Effects

The industrial Revolution changed the economic face of England. England became the most advanced country in the world. It developed its trade relations and this increased the national income. Cottage industries could not compete with the factories and they met their natural death in course of time. The establishment of factories saw the rise of many new industrial towns like Manchester, Lancashire, Birmingham and Sheffield. The birth of new classes the Capitalist and the Labour class made the poor

poorer and the entire capital of the country went in to the coffers of the capitalist. It was therefore as someone said "The Industrial Revolution made the rich richer and the poor poorer".

New Idealism

The Industrial Revolution gave birth to many political terminologies which are frequently used. Capitalism was born out of the mass production of goods which led to the owners of the big industries amassing wealth. The large scale factories began to develop mercantile capital, this was the beginning of capitalism.

Socialism

The slogan of socialism was raised by the labour class against capitalism. The motive behind socialism was that there should be a just distribution of wealth and to narrow the gap between the rich and the poor. Nobody should starve and everybody's needs must be met. Industrialization sharpened the distinction between the middle class and the labour class. Socialistic demands were meant to narrow this gap. Robert Owen was the first person to coin the word "socialism".



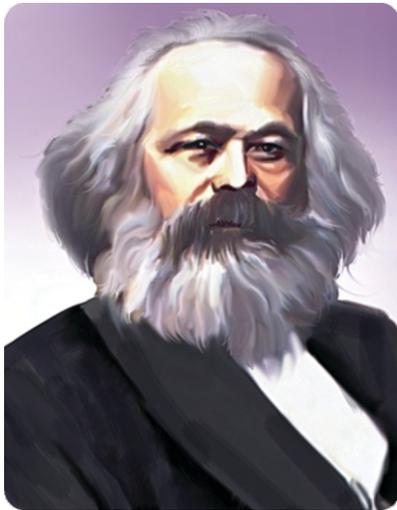
Robert Owen

Inventions during the Industrial Revolution

INDUSTRY	NAME	INVENTIONS	YEAR
1.TEXTILE	John Kay	Flying Shuttle	1733
	James Hargreaves	Spinning Jenny	1764
		Water Frame	1769
	Samuel Crompton	Spinning Mule	1779
	Edmund Cartwright	Power Loom	1785
	Eli Whitney	Cotton Gin	1793
	Elias Howe	Sewing machine	1846
2.STEAM	Thomas Newcomen	First steam engine	1712
	James Watt	Redesigned Newcomen's steam engine.	1769
		First Iron ship	1790
	George Stephenson	First Locomotive called Rocket	1814
		First Railway	1825
	Robert Fulton	Steam Boat called Clermont	1807
	Robert Stephenson	Flying Rocket	1829
	Faraday	Steam printing Press Dynamo	1814 1831
3.Iron and Steel	Abraham Derby	Substitution of coal from charcoal	1709
	John Smeaton	Improved Derby Process	1760
	Humphrey Davy	Safety lamp	1816
	Henry Cort	Pudding process for purification of iron	1784
	Bersemer	Method of making Steel	1855
4.Transport	John Metcalfe	Road making	
	John McAdam	Macadamised Roads	
	James Brindley	Networking Of Canals	1761
5.Communication	Sir Rowland Hill	Penny Post system	1835
	Samuel Morse	Sending messages through telegraph wires. First electric telegraph	1836
	Cyrus W field	Trans Atlantic under Sea Cable Connectivity	1858

Marxism

Marxism is a theory developed by **Karl Marx** who was a socialist from Germany. His theory is based on the assumption that production and physical forces have an intimate relationship, and the surplus value of products should go in favour of the working class. The industrial revolution gave birth to Marxism and philosophies which are sufficiently advanced these days.



Karl Marx

Theory of Laissez-Faire

It was a result of Industrial Revolution that the theory of Laissez-Faire or “free trade” came to the forefront. By this theory capitalist

and traders pleaded that the state had no right to interfere in the affairs of the factories and trade.

Impact of Industrial Revolution

The Industrial Revolution led man to become a slave of the machines. The owners of the factories ruthlessly exploited their employees. The hours of work in the factory varied between fourteen to sixteen hours a day. The women and children were employed at low wages and were also required to work on dangerous machines. It also created serious problem of under employment. The people began to live an unnatural life.

The industrial Revolution had both good and as well as evil effects. But it is undoubtedly clear that these effects were far reaching. **Davies** says, “The Industrial Revolution was not however an unmixed blessing. The domestic system of industry which it brought to an end was in many respects ,more conducive to the happiness of the workers”. It bestowed great material benefits to mankind. In brief the industrial revolution has made the modern world what it is today.

EXERCISE

I) Choose the correct answer.

1. During the Industrial Revolution Production become _____.
a) faster b) slower c) very slow d) no change
2. _____ was the birth place of the Industrial Revolution.
a) USA b) France c) England d) Germany
3. Great Britain is an _____.
a) Peninsula b) Island c) Desert d) Mountain

4. Cotton gin was invented by _____.
a) James Hargreaves b) Eli Whitney c) Samuel Crompton d) Elias Howe
5. In _____ the First Passenger Railway was operated in Britain.
a) 1830 b) 1850 c) 1779 d) 1900

II) Match the following.

- | | |
|------------------|------------------|
| 1. John Kay | Road |
| 2. James Watt | Dynamo |
| 3. Faraday | Flying Shuttle |
| 4. MC Adam | Spinning Jenny |
| 5. Humphrey Davy | New Steam Engine |
| | Safety Lamp |
| | Cotton Gin |

III) Answer all the questions given under each caption.

1. Textile Industry
 - a) Which industry gained the first momentum from the outburst of Invention?
 - b) Who invented the “Flying Shuttle”?
 - c) Who invented the sewing Machine?
 - d) When was the Cotton Gin invented?
2. Invention in Power
 - a) Who invented a new steam Engine in 1769?
 - b) Who invented the safety Lamp?
 - c) What did Bersemer invent in 1855?
 - d) Who introduced the Pudding process? What is it used for?

IV) Answer Briefly.

1. What is meant by the term 'Industrial Revolution'?
2. What were the results of the expansion of Commerce?
3. Write a note on Revolution in Agriculture
4. What is the motive behind socialism?
5. Who is Karl Marx? What was his Theory?

V) Answer in Detail.

1. What were the Causes for the Industrial Revolution?
2. What were the effects of the Industrial Revolution?
3. Mention some Important scientific Inventions that were made during the Industrial Revolution.

FORMATIVE ASSESSMENT

1. Discuss the effects of the Industrial Revolution in the society.
2. Collect the pictures of inventions and inventors in Textile Industry and in Power. Paste it in your scrapbook and write hints about them.
3. Assume you as a man of Industrial Revolution and write how was your life style changed after the invention of Steam Engine.