ANSWERS

TO

ACTIVITIES AND ASSIGNMENTS

APPENDIX I

ANSWERS TO ACTIVITIES AND ASSIGNMENTS IN ECE 231

ECE 231 SCIENCE IN EARLY YEARS

MODULE 1

Unit 1

Activity

i. a. Explain the Latin definition of science.

The word 'science' was originally derived from the Latin expression "Scientia" which means "to know" or to have "knowledge" and from another Latin verb "scio-ire-ivi-iture" which means "to know", "to have skill in" or "to know how to.'' The Latin definition seems to give more support to the definition of science. The above verb therefore describes science as a way of acquiring knowledge or skills.

b. State any two definitions of science has given by different scholars.

- Otuka (1983) is of the view that science is man's attempt to understand his environment.
- Ogunniyi (1986) who also sees science as an attempt by human being to organise their experiences about nature into meaningful systems of explanations.
- Conant (1951) defines science as interconnected series of concepts and conceptual schemes that developed as a result of experimentation and observation which are useful for further experimentation and observation. Conant's definition implies that science is not permanent but that the products of science are subject to change as soon as further experimentation and observations are made on them.

c. Define technology in your own words.

Technology is the systematic study of techniques for making and doing things. It is the practical application of the products of science for the benefit of mankind.

ii. Briefly explain the main relationship between science and technology.

When scientist carries out their investigations about nature, they come out with theories, laws, ideas, and principles etc. These are called the products of science. Technology, on the other hand, is the practical application of the products of

science for the benefit of mankind. Science produces the required skills and knowledge which technologists use in making their working tools.

iii. Enumerate the importance of science to mankind.

No other subject has affected man so directly like science. This is evident in the products of technology in terms of gadgets, communication devices, weapons etc

No other subjects have attention being paid to the methods of generating new knowledge and information like science.

iv. State and explain other ways by which science is important to mankind.

- Science has done so much to liberate mankind from bondage due to superstitions, idol worshiping,animism, and associated beliefs.
- In terms of agricultural practices, the knowledge and information from science have contributed to improved agricultural practices, pest and weed control, curbing the problems of soil erosion and modern ways of cultivation are some of the modern agricultural practices that have helped to improved crop yield.
- Scientific and technological structures of a society have a strong influence on the economic development of that society. For instance, most of the technological development which resulted in important inventions such as steam engine, printing press and many others brought about economic revolution of the society.
- Science and technology have helped man to beautify his environment and give possible explanation to things that happened in his environment.
- Through science and technology, communication processes have improved and less risky form of transportation and services has been introduced.
- Science and technology have made life comfortable for man and have improved man's standard of living.
- In terms of medicine, science and technology have helped in increasing the lifespan of man. This can be seen in the discovery of surgery, preventive and curative drugs.

Assignment

i. Why do you think science has enjoyed prominent position in the society more than any other discipline? Give reasons for your answer.

(Any right opinion should be accepted)

ii. Do you think the world would have been better without science and technology? Substantiate your opinion with relevant examples.

(Any right opinion should be accepted)

Unit 2

Activity

i. Make a list of other scientific laws you know or laws from your area of specialisation.
(Any correct answer should be awarded score)

ii. Explain in your own words what you understand by scientific theory. Why are theories not permanent?
(Any correct answer should be awarded score)

iii. Mention some of the sensory organs that can be used for direct observation.

- Tongue
- Eyes
- Nose; etc.

iv. Mention the various ways by which objects and living things can be classified.

Living things are classified based on:

Similarities;Differences or any other selected properties.

v. What are the requirements of inference?

Inference requires evaluation and judgment.

vi. Make a prediction about an event in nature.

For instance, having observed for several years that rain usually fall whenever there is cloud and high temperature it can then be predicted that rain will fall whenever there is high temperature coupled with cloud formation.

vii. Mention some of the instruments and units of measuring things.

Weighing balance – grams or kilogrammes

Thermometre – degree Celcius

Meter rule – meters

Etc.

viii. Discuss some of the verbal and non-verbal ways of communication in your area of specialisation.
(Any correct answer should be awarded score)

ix. Identify a problem from your area of specialisation and formulate questions and hypotheses based.
(Any correct answer should be awarded score)

x. Design an experiment in your field of specialisation and list out the science processes involved.
(Any correct answer should be awarded score)

xi. Formulate a model from your area of specialisation.
(Any correct answer should be awarded score)

Assignment

i. What do you understand by the term products and processes of science?
Products of science are the outcome of scientific investigations. These are ideas, facts, principles, concepts, laws and theories.

Processes of science are the various tool that scientist use when carrying out their investigations or activities. There are many processes but ten major ones will be discussed. These are: observation; communicating; classification; making operational definition; inference; formulating question and hypotheses; Production; experimenting; measuring andformulating models.

ii. Mention and explain any two products and two processes of science using relevant examples from your area of specialisation.

Products of Science

Scientific Ideas
Ordinarily, an idea is a conception or abstraction about something. A scientific idea is a mental image used by scientist to define their terms and test their hypotheses, which if meaningful, entail prediction. Ideas in science are usually formed to test a hypothesis which later leads to formation of concepts in science.

Scientific Fact
A fact is something that can be shown to be true or to exist or to have happened. Scientific facts are based on the use of one or more sensory organs to prove the existence of something. Scientific facts are not based on mere speculations but on observable or demonstrated events. For example, the sun rises from the East and sets in the West.

Scientific Principles
Scientific principles are fundamental truths upon which other truths are founded. In other words, scientific principles are made up of laws that form the basic

theoretical structure of a concept. For instance, the basic theoretical structure of physical sciences can be found in Boyle's law and Newton's law of motion. A good example of a scientific principle is the conservation of energy.

Scientific Concepts

A concept in science is an idea or a mental image formed by abstracting common features of a series of experiences. Concepts generally can be classified into two major groups. These are theoretical and empirical concepts. Theoretical concepts are concepts whose meanings are not derived from direct or indirect observation using sensory stimulation. Rather, they are subject to human ability to communicate the imagined idea. Examples include electron, atom, gene, mass, etc. Empirical concept on the other hand is the direct opposite of the theoretical concept. Empirical concepts are concepts derived from direct or indirect observation or experiences. This means that they are concepts that a scientist can use his sense organs to observe. Examples include colour, chromosomes, change of state, energy change, etc.

Scientific Laws

Scientific laws are generalised statements that have characterised general pattern or regularities in natural happenings. Laws when established usually stand for quite some time before they are changed. Examples of law in science include first and second law of heredity postulated by Gregor Mendel, Boyle's Law, laws of thermodynamics, etc.

Scientific Theory

A scientific theory is a statement put forward to explain the existence of one or several laws. For instance, in Dalton's atomic theory and kinetic theory of matter, several observed facts and a statement connecting the observed facts together were made. Therefore, a theory is put forward to explain the existence of laws. Scientific theories are not permanent but change with time as new facts are discovered. Other examples of theories include theory of natural selection, Big Bang theory, etc.

Processes of Science

Observation

This is the very first skill used by scientists in carrying out investigation of natural phenomena. Observation can be direct using all or any of the sensory organs or it can be indirect when the senses are not adequate. This will then involve using machines or other aids to support what is being observed. Data collected as a result of observation could be used to take further action based on the precision of the senses used.

Classification

This is the grouping or ordering of things or objects based on certain common characteristics. For instance, when objects and events are observed, they can be classified based on similarities, differences or any other selected properties.

Inference

This refers to receiving an opinion or decision that something is true or otherwise on the basis of information that has been acquired through observation. Inference requires evaluation and judgment. It leads to prediction.

Prediction

This is the act of saying that something will happen based on regularity of observation about an event or object. Prediction may later be validated or not although it usually has a high- level of certainty. For instance, having observed for several years that rain usually fall whenever there is cloud and high temperature it can then be predicted that rain will fall whenever there is high temperature coupled with cloud formation.

Measuring

Measuring is concerned with knowing the size or extent of something especially in comparison within a known standard. In science, measuring can be made directly or indirectly. Data collected from measuring can be used in communicating.

Communicating

The outcome of observation and measurement need to be recorded and kept for future use. Communication can be verbal or non- verbal. The verbal communication occurs when scientist interact with one another in the course of their activities. Non- verbal communication on the other hand involves writing, drawing, graphical representation to mention but a few.

Making Operational Definition

Operational definitions are made in order to simplify communication on phenomenal being investigated by scientists. It gives information needed to differentiate terms which are being defined from other similar phenomena.

Formulating Hypotheses and Questions

In formulating hypothesis and questions when a problem comes up, scientist usually ask questions as to the possible cause(s) of the problem. The questions then form the basis for the foundations and designing an experiment; identifying the possible cause with a view to solving the problems. The questions asked may

lead to intelligent guesses about the possible cause of the problem. These intelligent guesses are known as hypothesis.

Experimenting

This is the process of designing and gathering data to test the hypothesis formulated about a problem. Experimentation may involve all or some of the science processes. For instance, in an experiment, observations, classification, prediction etc are made.

Formulating Model

From the result of the test hypothesis in an experiment, a model can be formulated to further explain the problem being investigated from the result of the hypothesis in an experiment. The model can be empirical or theoretical.

Unit 3

Activity

i. Explain how Proshansky and Seidenberg describe scientific attitude.
Proshansky and Seidenberg in Emina (1986) are of the view that scientific attitudes can be considered to have cognitive, affective and behavioural components.

ii. Give reasons why scientist should develop the above mentioned attitudes in the course of carrying out investigations.
(Any correct answer award score)

iii. Describe who a scientist is from your own point of view.
A scientist is someone who has scientific training or background. According to Ukoli (1985), a scientist is an individual who tries to establish the laws of nature in his various activities using the processes of science. Scientist uses rational and logical reasoning to explain the natural phenomenal. He is always in the laboratory carrying out investigation about natural phenomena.

iv. Discuss other attributes of scientists you know.

- A scientist must develop scientific attitudes such as curiousity, open mindedness, honesty etc.
- A scientist must be emotionally sensitive in addition to the application of rational and logical approaches in the course of carrying out his investigation
- A scientist must be sensitive to "chance discovery". This is the ability of making discovery by accident or by chance.

- A scientist must be kept abreast of development in relevant literature. This means that he is expected to possess sufficient wide range of relevant knowledge so as to be up to date.
- A scientist must be competent in design and test experiments. He must also develop ability to formulate hypotheses and design experiments to test the hypotheses.
- A scientist must be ready to understand repeated failure and frustration as they appear in the course of carrying out scientific activities.
- Must be able to use appropriate language when reporting his findings.
- A scientist must familiarise himself with the lives and works of the past scientist. This is because they may serve as a source of inspiration to him.

Assignment

i. State and explain three attitudes of science you have learnt.

critical mindedness; objectivity; suspended judgment; willingness change; respect for evidence; open opinion mindedness; honesty; questioning

- **Critical Mindedness**
  This is the ability to develop the spirit of appraising something. It involves passing judgment on everything. As a scientist, it involves passing judgment on everything the scientist comes across in the course of his investigation.
- **Objectivity**
  This means that scientist should be able to develop the ability to perceive or describe something without being influenced by personal emotions or prejudices. By being objective, scientist should be able to describe objects, events or things as they are.
- **Suspended Judgment**
  This means that scientist should not come into conclusion about something he has not got all the evidence.
- **Willingness to Change Opinion**
  Knowledge in science is not permanent but keeps changing as new information are acquired. Therefore scientist should develop the habit of changing his opinion whenever there is a change in any findings.
- **Respect for Evidence**
  All scientists should always look for evidence and respect it. In the course of carrying out investigation, scientist should not base their conclusion on hearsay.
- **Open Mindedness**
  This means that scientists should always be ready to share their findings with other scientists. They should allow their fellow scientist to see and criticize their work so as to improve on it.
- **Honesty**

Scientists should develop the spirit of presenting their finings as they are rather than manipulating. They should be honest in the course of carrying out their investigation.

- **Questioning**
  Scientists should be curious by asking questions about events and happenings in their environment.
  Other scientific attitudes apart from the above include humility and perseverance.
- **Humility**
  Scientists should develop the spirit of humility in the course of carrying out scientific activities. They should be cool- headed and submissive especially to those above them.
- **Perseverance**
  Scientists should develop the spirit of perseverance in the process of carrying out their activities especially when they are passing through experimental failures and frustrations. They should endure all difficulties

ii. What are the attributes of a scientist?
Answers same as Unit 3 (Activity iv above)

Unit 4

Activity

i. Describe the scientific method of investigation.
(Any correct answer should be awarded score)

ii. Mention the names of the scholars that developed inductive and deductive reasoning.
Inductive reasoning - Inductive method of reasoning was developed by Francis Bacon

Deductive reasoning - Deductive reasoning was developed by the ancient Greek philosopher, Aristotle.

iii. Explain how you will use scientific method in to solve a problem in your area of specialisation.
(Any correct answer should be awarded score)

iv. Mention and explain other limitations of scientific method not mentioned above.
(Any correct answer should be awarded score)

Assignment

i. State the major differences between inductive and deductive method.

Inductive method involves taking particular cases and using them to draw general conclusion while **Deductive method** on the other hand is the process of inferring new facts from something already known.

Inductive methods involves moving from specific to general while **Deductive methods** has to do with using the logic of a theory to generate propositions that can then be tested.

Inductive method scientists collect bits of information through a gradual process of investigation and forming them into theories while **Deductive** collect large information.

ii. What are the limitations of scientific methods?

- Scientific method can only be applied to questions that have factual basis. Questions concerning morals, value, judgement social issues and attitudes cannot be solved using scientific method.
- Scientific methods cannot be used to solve all the problems of man, for instance the problem of famine, drug abuse and pollution are human caused problems and must be resolved by man. Science may provide some tools for social planners, politicians and ethical thinkers but science does not have nor does it attempt to produce all the answers to the problems of human race.
- Scientific method is not 100 per cent reliable as it is subject to experimental errors.

Unit 5

Activity

i. Discuss the origin of man from the evolution theory of creation.

The origin of man is described by Charles Darwin in his book – "the Descent of Man." This theory stated that man had developed from some lower animals. Darwin supported this assertion with available data which pointed out that the living mammals of any specific area were closely related to the fossilised remains of extinct species which had been discovered there. He concluded, therefore, that since the two living primates most closely resemble man (that is, Chimpanzee and Gorilla) and are both found in Africa, it would be reasonable to conclude that man's birth place would eventually be discovered in the African continent.

Assignment

i. Discuss how the theories of evolution and that of creation can be used to explain the origin of man.

Charles Darwin believed that the origin of man is equally in his theory of evolution. The origin of man is described by Charles Darwin in his book – "the Descent of Man." This theory stated that man had developed from some lower animals. Darwin supported this assertion with available data which pointed out that the living mammals of any specific area were closely related to the fossilised remains of extinct species which had been discovered there. He concluded, therefore, that since the two living primates most closely resemble man (that is, Chimpanzee and Gorilla) and are both found in Africa, it would be reasonable to conclude that man's birth place would eventually be discovered in the African continent.Another school of thought traced the **origin of man to the theory of creation**. This theory states that man was specially created by Almighty God and endowed from the very beginning with all the physical and mental attributes of modern man in His own image.

i. State the major conclusions reached by Charles Darwin and Wallace in their separate experiments on the origin of species.

Both Darwin and Wallace in their separate investigations reached the following conclusions that:

- different species of plants and animals were related.
- new species were appearing from the old one.
- other species were disappearing as a result of natural selection.

MODULE 2

Unit 1

Activity

i. Discuss the major natural factors that contributed to the civilisation of ancient Egypt.

Egypt had a relatively cloudless sky where the sun shone almost constantly thus consistently providing heat and light.

The Nile River served as a water highway for the people and a constant source of life thus giving water and sustenance to all plant and animals.

ii. What was Egyptian perception about life after death?

Egyptians believe in life after death hence they embalm and preserve human body through the practice of mummification. During the process of mummification, the brain will be removed and thoroughly washed in herbs and wine. The body cavities will then be filled with perfume and sweet smelling resins (an excretory product of plant).

iii. What are the factors that made Mesopotamia to be successful in agriculture?

the river valley and plains of Mesopotamia is favourable for agriculture especially fishing and irrigation.

Assignment

i. Explain the factors that led to the development of ancient Egypt.

Egypt had a relatively cloudless sky where the sun shone almost constantly thus consistently providing heat and light.

The Nile River served as a water highway for the people and a constant source of life thus giving water and sustenance to all plant and animals.

ii. Relate the achievement of ancient Mesopotamian civilisation to the development of modern science and technology.

Agriculture

In terms of agriculture, the river valley and plains of Mesopotamia is favourable for agriculture especially fishing and irrigation. This encouraged people to settle in the ancient city and develop on their own. They built canals and practice extensive irrigation.

Writing

The growing administrative needs stimulated the invention of a form of writing known as "Cuneiform" which is a mode of writing utilising wedge shaped strokes inscribed mainly on clays, stones, metal wax and other hard materials. There were about 200 signs with each representing a number of words having similar sounds.

Medicine

Their early medicine manifested itself in a combined form of magic and science. They believe that all ailments were caused by the gods and so they consulted their gods before they administer any drug. They also use herbs gotten from roots leaves and fruits of plants for treatment of diseases. However, there were no major surgical operations as there were no specialists.

Classification of Animals

Because of the presence of the two rivers, there were many animals and plants. This made them to classify the existing animals into fish, serpent, birds and four-legged animals. Also, hundreds of different animals and about 250 varieties of plants were found and classified.

Map Making

They were the first to introduce the idea of map making.

Building

- They used sundry bricks hardened by fire in building their houses.
- They build their temples known as ziggurats using sundry bricks.
- They were involved in trading by barter.
- They developed first class system of weight and measurements.
- In the field of mathematics, they adapted 12 instead of 10 as their counting unit.
- They also practice fractions, values of square and cubes.

Unit 2

Activity

i. Mention any three Greek philosophers and discuss their major contributions to the development of science.

Thales

He was regarded as one of the seven wise men of Greece. According to him, the original principle of all things is water. He is also said to have introduced geometry in Greece. He also became famous for his knowledge of astronomy.

Empedocles

According to Empedocles, all things in the universe are composed of four primal elements. These are: earth, air, fire and water. He also asserted that there are two active opposing forces which act on these forces combining and separating them into infinitely varied forms. These according to him are "love" and "hate." The four elements are bound together by the principle of love while hate separates the elements.

Pythagoras

He was a Greek philosopher and a mathematician. He founded a movement with religious, political and philosophical aims known as *Pythagoreanism*. Pythagoras wanted to discover the master key to universal harmony both natural and social, and the personality of numbers which he construed as an ordered array of dots. Pythagoras was not only an influential thinker, but also a complete personality whose doctrines addressed the spiritual as well as the scientific.

Parmenides

He maintained that the universe is an indivisible, unchanging spherical entity and that all reference to change or diversify is erroneous. According to him, all that exists has no beginning and has no end and is not subject to change over time.

Plato

He was a great metaphysician, mathematician, astrophysicist and political theorists. He loved mathematics and saw in it the key to a rational method of scientific inquiry. He argues that geometry prepares the mind for the discovery of real ideas which can be perceived only through imagination. For Plato, genuine scientific knowledge is possible through the intellectual apprehension of the ideal entities in the world of forms.

Aristotle

He was a student of Plato and one of the world's first and greatest scholars. He created a biological science and taxonomy similar to those in use today. Aristotle also made important contributions to logic, physics and political theory.

Other prominent Greek philosophers include Alexander the great, Euclid, Archimedes, Apollonius and Hipparchus among others.

ii. What are the two major areas or fields that the Romans were well known for?

- It is very solid in jurisprudence and law.
- It is also progressive in the technologies of warfare and public hygiene

Assignment

i. State and explain the major contribution of Greek civilisation to the development of modern science and technology.

Mathematics

The Greeks taught the world about mathematics. Euclid was a famous mathematician who invented a complete system of geometry which is still studied in schools all over the world today. The same thing applies to Pythagoras theorems.

Philosophy

The Greek philosophy taught us to be inquisitive about our environment. It taught us to ask why things happen and how things should be done.

Science

The Greek began many of the branches of science that we study today. Aristotle wrote books on biology, zoology, physiology and Botany. Archimedes was the greatest physicist of the ancient world while Theophrastus is regarded as the "father of botany."

Medicine

Hippocratus is regarded as the father of medicine. Modern medical doctors still honour his ideas today as it is expressed in the "Hippocratic Oath." The Greeks were the first to debunk the belief that sicknesses were caused by supernatural causes, rather, that sickness were caused by diseases.

The Greek Language

The Greek language has had great influence on other European languages used in science and other disciplines today. For instance, words like philosophy, biology, geography, zoology, etc. were all derived from Greek language

ii. Describe the major achievements of ancient Roman civilization.

Finally, the Roman Empire became the channel through which the cultures and religions of many people were combined and transmitted via medieval and renaissance Europe to the modern world.

Unit 3

Activity

i. **Discuss briefly the Chinese way of counting numbers.**

They use small rods to count their numbers. For instance, one rod stands for one, and two rods stand for two and it continue like that. The counting was done on counting boards and can be used for addition, subtraction, multiplication and division.

ii. Describe the nature of architecture in ancient Maya civilisation.

Their power in architecture could be seen from the way they build. They built massive store, pyramid, temples and sculpture. They used cemented rubble bricks and thick plasters in their building.

Assignment

i. Describe briefly the major features of ancient China, Maya and Indus river valley civilisation.

This is one of the largest ancient civilisations similar to ancient Egypt and Mesopotamia. The remains of settlement belonging to this culture are found throughout the Indus river valley in Pakistan and Western India. The civilisation was covered by a single Bronze Age Culture.

ii. How did the civilisation of ancient China,Maya and Indus river valley aided the development of modern science and technology?

China

Pure Sciences

In pure science, the Chinese were more practical than theoretical. For instance in physics, they devised methods of practical measurements such as metric system, weights and balances. They studied optics, shadows and discovered that light traveled in straight lines. They also invented magnetic compass. In Chemistry, they discovered several chemicals which they thought could make them immortal. They use a chemical that today looks like mercuric sulphide on the body of the dead person which made the body so elastic as if it was buried recently. They also devised special chemical apparatus in form of stoves, furnaces, vessels etc.

In Biology, the Chinese kept all sorts of animals and insects in their homes. They bred crickets for sports, kept bees for medicinal purposes, dogs for security and some insects for protection of crops. They also studied plants to know their different species and their environment in which they flourished best.

Medicine

Chinese medicine was very popular through the practice of acupuncture. Acupuncture is a process by which the natural responses of the body system were stimulated to the circulatory system, nerves, veins and arteries. They diagnosis patients by checking his heart rate breathe and colour of the tongue. These methods are in use by modern medical doctors today.

Maya

Architecture

Their power in architecture could be seen from the way they build. They built massive store, pyramid, temples and sculpture. They used cemented rubble bricks and thick plasters in their building.

Astronomy

The Mayan conception of the universe was primitive and superstitious. They believed that the universe contains four directions and 13 layers. The Earth was seen as the back of a giant lizard or crocodile lying in vast pond within water lilies and fish. They had a calendar which had 365 days consisting of 18 months of 21 days each.

Mathematics

The Mayan counted their numbers in the units of 20 with each number going by a special name. For instance, number 41 was calculated as two scores; one and 51 as two scores and 11. There was no formal mathematics.

Writing

The Maya developed a complex system of hieroglyphic writing to read any astronomical observations and calendar calculations and also historical information. Scribes are carved on stone, altars, wooden lintels, roofs, beams and in books made of bark paper.

The major achievement of the Indus river valley civilisation was in brick making and the industries of pottery and metal production which helped to develop their culture. They were also good in town planning and the establishment of uniform standards of weights and measures.

Unit 4

Activity

Discuss the role of Muhammed Al-Khwarizmi in the history of Islamic civilisation.

Muhameed Al- Khwarizmi, an arab mathematician introduced Hindu – Arabic numerals to Europe. Hindu- Arabic numerals include "zero" which was not known in Europe at that time. Al-kwarizmi also wrote on Algebra, a name derived from Arabic word "Al-Jabr". He was also the person that introduced Algorithm which forms the backbone for our modern day computing.

Assignment

i. Discuss the contributions of Islamic scholars to Mathematics, Astronomy and Medicine.

Mathematics

Arab mathematician, Muhameed Al- Khwarizmi introduced Hindu – Arabic numerals to Europe. Hindu- Arabic numerals include "zero" which was not known in Europe at that time. Al-kwarizmi also wrote on Algebra, a name derived from Arabic word "Al-Jabr". He was also the person that introduced Algorithm which forms the backbone for our modern day computing.

Astronomy

The Arab scholars, through their effective observational skills, gave names to many of the brightest stars. Some of these names include – Aldebaran, Altair and Denab. All these names are used today by modern astronomies.

Medicine

Translations from Greek were instrumental in the development of Arabic system of medicine throughout the Arab speaking world. They introduce numerous chemical treating substances for treatment of the sick. They were also good in the fields of ophthalmology and public hygiene.

Prominent among the Arabian physicians were Al- Razi who was the first to identify small pox and measles, Avenzoar, who was the first to describe the parasite that causes the disease scabies. Malmonides wrote books on diet and hygiene, Al-Quarashi wrote commenting on the writing of Hippocrates on diet and diseases.

ii. With the aid of specific examples, what are the contributions of Islamic scholars to the development of modern science and technology?

- Al- Razi who was the first to identify small pox and measles.

- Avenzoar, who was the first to describe the parasite that causes the disease scabies.
- Malmonides wrote books on diet and hygiene,
- Al-Quarashi wrote commenting on the writing of Hippocrates on diet and diseases.
- Egyptian physicists, Alhasan, published a book that dealt with the principles of lenses, mirrors and other devices used in optics.

Unit 5

Activity

i. Discuss the major contribution of 13th century to the development of modern science.

The 13th century witnessed the great age of scholastic learning and the founding of great monasteries and universities. At this period in question, learning was centred on the monasteries and not on universities. Religion tends to obstruct the road to scientific progress.

In the mid-13th century, Europe witnessed traumatic economic and social disasters in form of general financial collapse. This incidence further made science to be inactive and little interest was placed on experimentation. Natural philosophy and particular facts were studied mainly in connection with problem relating to religion and philosophical speculations.

ii. What was the major positive change in intellectual climate that occurred in the late Middle Ages?

It was discovered that theology and religion could no longer solve man's problem. Secondly, there were divisions among churches. Disagreements appeared at the very centre of medieval learning, philosophical controversies seemed to shake the very foundations of dogma, there was intellectual curiousity, willingness to reopen questions which appeared closed before and to seek answers from every source capable of giving them and this was the beginning of rebirth in science which the historians of science called "Renaissance."

Assignment

i. Briefly describe the nature of science in the Dark Ages.

- The Eastern Empire under the reign of Constantinople hosted a civilised society, though they did not produce much new scientists.
- There were no many scientists even in Europe but philosophers that only speculates.

- It was a period of ignorance because no meaningful learning was achieved during this period.

ii. Enumerate and explain the major factors that led to backwardness of science in the Middle ages.

- Medieval mathematics was confined to simple computations; mathematics was not regarded as a compliment of science. This period failed to recognise that mathematics can be used to tackle advance problems in science and astronomy.
- Absence of scientific incentives.
- Great emphasis on theology and faith that is, Bible and Roman law.
- Technical methods were treated as secret and with mysteries hence, there was no spirit of open mindedness. Knowledge acquired in industrial practice was not disseminated to others.

MODULE 3

Unit 1

Activity

i. Explain in your own words what you understand by the term "Renaissance."
The term "Renaissance" is a French word meaning "rebirth". It refers to historic era which is a cultural movement that encompasses a rebellion of learning based on intellectual transformation.

ii. Discuss the importance of printing in the rebirth of modern science.
Invention of printing which makes publication easy. This has made it possible to have access to published works which in turn facilitated learning.

Assignment

i. List and explain the characteristics of Renaissance.

Ancient texts
Emphasis was laid on the study of ancient texts in its original form and appraisal was made on them through combination of reasoning and empirical science.

Artistic technique
The development of highly realistic perspective in artistic technique. This can be seen in terms of painting and architecture.

Classical learning
It was a period of revival in classical learning in Europe which was brought about partly by contact with other civilisation especially Islamic civilisation in Spain and Palestine, and partly by the development of urban centres with literate upper classes.

Establishment of Universities
Establishment of universities and a surge in scholastic learning and values.

Great intellectual excitement
Great intellectual excitement among scholars who were convinced that they were living in a new age which promised to be ever more glorious than the great days of Greece and Rome.

Greater ease of communication.

Invention of printing which makes publication easy.

Invention of gun powder to replace swords and shields used in the medieval periods. The gun powder helped in offence and defense against enemies.

Unit 2

Activity

i. State the major achievement of the 16th and 17th centuries

Development of Precision instruments by ***Tycho Brahe***

He developed precision instruments in form of sextant and quadrants which he used in observing the heavenly bodies. He used these instruments to disprove Aristotle's view about comets that comets were celestial objects and not metrological phenomenon that were capable of causing disease and epidemics as postulated by Aristotle.

Confirms the Copernican theory by **Johannes Kepler**

He confirms the Copernican theory by showing that the planet mars rotates round the sun. He was also able to prove that the ratio between the time taken by each planet to complete one orbit(rotation) and its distance from the sun is the same for all the planets.

Founder of the science of dynamics by **Galileo Galilei**

He was regarded as the founder of the science of dynamics. He was the first to establish the law of falling bodies. He showed that there was no measurable difference between the rates of fall of objects in a vacuum. He also showed that the acceleration of falling bodies is always the same throughout the fall.

Discovered the law of gravity by **Isaac Newton**

He discovered the law of gravity and postulated laws of motion. According to him, every planet, at every moment, has acceleration towards the sun which varies inversely with the square of the distance from the sun.

Satisfactory explanation of circulatory systemin the human body by **William Harvey**

He came up with a satisfactory explanation of circulatory system in the human body.

Discovery of quantum nature of light by **Albert Einstein**

He discovered the quantum nature of light and provided a description of molecular motion. He also introduced the special theory of relativity.

Propounded heliocentric theory by **Nicolas Copernicus**

He propounded heliocentric theory which states that the sun is in the centre of the universe and that every other planet revolves round the sun.

Discovery of radio activity by **Marie Curie**

She discovered radio activity and she was the first woman to win Nobel Prize.

Development of Precision instruments by **Archimedes**

He is known for applying science to everyday life. He developed practical inventions such as levers and screws.

Discovery of nature of electricity and magnetism by **William Gilbert**

He discovered the nature of electricity and Magnetism.

Invention of Mechanical adding machine by **Blaise Pascal**

He invented the first mechanical adding machine and formulated one of the basic theorems of projective geometry.

ii. Who discovered the Law of Gravity?
Isaac Newton discovered the law of gravity.

iii. Name the first woman to Nobel Prize in Science.
Marie Curie

Assignment

i. Briefly describe the nature of scientific revolution in the 16th and17th centuries.
It provided the intellectual basis for modern western technology particularly in Europe.
The period witnessed a drastic emergence of able-bodied men of science who can be regarded as genius.
Significant transformations were made in the field of astronomy, physics and mathematics.
During these centuries, it was possible and convenient to borrow scientific instruments from other walks of life although emphasis was laid on designing scientific instruments for specific purposes. It can be said that the 16th and

17thcenturies witnessed the development of scientific instruments. This made it possible for industries to develop rapidly in the 16thcentury especially mining.
It should also be noted that in the 16th and 17th centuries, scientific instruments were used on a large scale for the first time in history and this suddenly opened up vast new field of discovery.

ii. What are the factors that led to the revolutionary upsurge in science in the 16th and 17th centuries in Europe?

- Quick cultural, political and economic changes taking place and the receptive of new ideas by the society.
- Formation of societies and organisations to promote, publicise and encourage science. Examples of such society include the English Royal Society and French Academy of Science.
- Emergence of able and devoted men of science. Examples of such men include Tycho Brahe, Robert Boyle, Galileo Galilee, JohanesKepler etc.
- Use of well-formulated problems and the pursuit of answers to such problems.
- Use of improved experimental instruments such as telescope microscope, etc.
- Marriage of mathematics with science which made precision in science possible.
- Free communication among scientists. This includes healthy rivalry and argument among scientist without bitterness and confrontation.
- Invention of printing which makes communication possible.

Unit 3

Activity

i. Describe in your own words what you understand by Industrial Revolution.
Industrial Revolution is the change from the use of hands in producing goods to the use of machine. OR It is the change from the cottage system of industry known in the medieval period to the factory system of industry.

ii. How did invention of steam engine aided Industrial Revolution in Europe?
The steam engine was used to run factories, turn drills, drive ships and pull cars along a track. It was a cheaper and more dependable form of energy. The invention of steam engine led to the inventions that were made in the spinning and weaving industries.

iii. What are the major limitations of Industrial Revolution?
One of the major limitations of Industrial Revolution is the exploitation of the lower class or the workers. Conflicts between the workers and the capitalists often lead to strike actions and lockouts.

Other negative consequences of the revolution include pollution of both land, water and air which has led to loss of habitat for both plants and animals.

Drastic population growth following industrialisation has contributed to the decline of natural habitats and resources.

iv. What do you consider to be the major impact of Industrial Revolution?
The major significant achievement of the revolution was the mass production of cheap goods. This has increased the wealth of all Nations and it has improved the standard of living of the people.

Assignment

i. Mention and explain the factors that aided Industrial Revolution in great Britain.
Invention of steam engine- by Thomas Newcomer but was improved upon by James Watt. It was a cheaper and more dependable form of energy. The invention of steam engine led to the inventions that were made in the spinning and weaving industries.

Population - There was a geometric increase in population due to movement of people from rural areas to the cities as a result of improvements in agriculture.

Availability of raw materials- These include coal, iron, ore, and wool from the home market, cotton from India and other agricultural and mineral resources from Africa.

There were ***many navigable rivers*** which made it possible to transport raw materials and finished goods by water to European markets and the whole world.

No internal custom duties in Britain for the industries and duties on imported raw materials were very low.

ii. Will you consider Industrial Revolution a blessing or a curse? Support your answer with relevant explanation and examples.
(Any correct answer award score)

Unit 4

Activity

i. Mention two Physicists of the 19th century.
Hans Christian Oersted,; Michael Faraday; Herman Von Helmholtz and James Clerk Maxwell.

ii. State Daltons Atomic Theory.
Dalton's atomic theory which states that all materials are made up of small indivisible and indestructible particles called atoms.

iii. What is the major achievement in Biology in the 19th century?
Louis Pasteur discovered that some microorganisms are involved in causing disease. He discovered immunisation as a way of preventing disease. He also invented the process of pasteurisation, to help prevent the spread of disease through milk and other food.

Gregor Mendel, an Australian monk, laid the foundation of genetics-the study of heredity.

Charles Darwin postulated the theory of Evolution by natural selection. Theodore Schwann discovered the cellular structure of living organism.

iv. Who discovered Neptune in the 19th Century?
Neptune was discovered by a German Astronomer Johann Galle.

Assignment

i. Discuss, with the aid of specific examples, the major scientific achievements in Biology, Chemistry, Physics and Astronomy in the 19th Century.

Discoveries in Biology

The study of microorganism became increasingly important in the 19th century. Louis Pasteur discovered that some microorganisms are involved in causing disease. He discovered immunisation as a way of preventing disease. He also invented the process of pasteurisation, to help prevent the spread of disease through milk and other food. Also in this century, Gregor Mendel, an Australian monk, laid the foundation of genetics-the study of heredity.

Discoveries in Chemistry

The 19th century chemistry built on the foundations of the chemical substance nomenclature founded by Lavoisier. Also elaborated was Dalton's atomic theory which states that all materials are made up of small indivisible and indestructible particles called atoms. Modern periodic table of element was developed by DimitriMendelee, a Russian.

Substances were also classified as elements and compounds. Discoveries were made on the properties of other unknown elements. As chemistry continues to make progress, chemists were able to uncover the true structure of organic substances. It was at this time that chemistry moved closer to unite with physics

and achieved an increased power in industrial application. Other 19th century discoveries in chemistry include the world's first synthetic fertilizer. Thomas Edison devised the carbon – granule microphone which greatly improved the recently invented telephone.

Discoveries in Physics

Eminent 19th century physicists include Hans Christian Oersted, Michael Faraday, Herman Von Helmholtz and James Clerk Maxwell. These men, in their various ways, contributed to the theory of energy conversion and conservation working within the context of Newtonian theory. However, electromagnetic theory, towards the end of the 19th century, began to question the validity of Newtonian physics. Electric motors and generators were also discovered during this century. Radio and X-Ray waves were also discovered.

Unit 5

Activity

i. Discuss the achievement of science in the 20th century.

Physics

In the first half of the 20th century, scientists completely transformed the study of physics. Physics discovered the internal structures of the atom. It was discovered that mass could actually bend space and time. It was also found that the smallest known units of mass and energy behaved as waves and as particles.

Genetics

Gregor Mendel's work in genetics was revisited in the 20th century. Biologists are now convinced that genes are located in chromosomes, the thread-like structure that contains proteins and deoxyribonucleic acid (DNA). It was in this century that James Watson and Francis Crick established the structured of DNA in 1953. British developmental biologist, Lewis Wolpert, was known for his pioneering work on the development of the embryo.

Medical Science

The major achievement in this field was that a Dutch physician, Christian Eijkman, showed that diseases can are caused not only by microorganism but also by deficiency of certain substances, now called vitamins. Paul Ehrlich introduced the world's first bactericide, a chemical designed to kill specific kinds of bacteria without killing the patient's cells. Sir Alexander Fleming discovered penicillin in 1928. By the mid-20th century, medical scientists had advanced in preventing, treating, and curing many diseases that have affected human being. Also, the diagnosis of disease has been modernised by the use of new imaging techniques.

Improved drugs and development of new tools have made surgical operations easy and possible.

Social Sciences

Social sciences received a very great attention in the 20th century. An Australian physician, Sigmund Freud founded the practice of psychoanalysis, a name applied to a specific method of investigating, unconscious mental process. There were also dramatic discoveries in Anthropology.

Assignment

i. Discuss briefly the Nature of Science in the 20th century.

The 20th century was a continuation of the development in the 19th century. Science became highly professionalised. Investigations were concentrated mainly on laboratory experiments with the use of scientific methods. This formed the basis of modern science.

The 20th century scientists achieved spectacular advances in the fields of genetics, medicine, social science, technology and physics

ii. Explain the major developments of science today.

The mathematical relationship between measured quantities, which seemed so exciting when first discovered, became exercises and examples in applied mathematics. Scientists working in industries use these facts to work out processes and give us new products, new varieties of plants and more useful breeds of animals for the benefit of mankind.

Modern methods of communication and transportation arising in particular from the scientific effects devoted to aircraft design and radio have made war between nations inevitably involving the whole world.

APPENDIX II

ANSWERS TO ACTIVITIES AND ASSIGNMENTS IN PED313

PED 313 HISTORY AND CULTURAL BACKGROUND OF IMMEDIATE ENVIRONMENT

MODULE 1

Unit 1

Activity

An attempt to categorize the environment would first require defining the concept-environment. Okidi (2003) defines the environment as the totality of the nature and natural resources as well as the context of the within which they exist and interact. This includes the infrastructures which support socio-economic activities and which becomes part of our natural and cultural heritage.

In a broad term environment can be categorized in the physical, social and the biophysical (Natural environment. The physical environment is made up of all the lithosphere, hydrosphere, atmosphere, and the biosphere. On the other hand, the social environment is the composition of interpersonal relationships, cultural orientation, economic and political organizations that influence the life of the individuals or community.

The biophysical environment is the symbiosis between the physical and biological life of the environment.

1. The physical environment is characterized by all the phenomena apart from man and the things he creates. It consists of four major interactive components which are the lithosphere, hydrosphere, atmosphere, and biosphere.

   The lithosphere consists of solid, rocky crust covering the entire planet. This crust is inorganic and is composed of minerals. The hydrosphere is made up of the mass mater found on, under and over the surface of the planet. This includes oceans, rivers, lakes and even moisture in the air. Atmosphere refers to the body of air which surrounded our planet; the atmosphere is divided into five layers, troposphere, stratosphere, mesosphere, thermosphere and exosphere.

   The biosphere is composed of all living organism. Plants, animals and one-celled organism are all part of the biosphere. Most of the planet's life is found from three meters below the ground to thirty meters above it and in the top 200 meters of the oceans and seas.

2. The social environment is made up of all human activities. This includes the culture, social institutions and organization that operate in the society. It involves interpersonal relationships at four basic levels of the human society. First the family level (based on love, hard-work, mutual understanding, progress and happiness). Second is the interfamily level on the basis of neighbourhood. Interpersonal relationships. The third is the intercommunity level-relationship; this comprises inter-town, inter-local government, inter-state, etc.

   The fourth is the international level this involves relationships among nations in terms of the ways different nations relate to one another in political, economic, scientific and technical matters.

   The social environment refers to relationships that exist between individuals and groups. It includes the cultures and institutions or organization that is found in the community or society.

Assignment

1. Okidi (2003) defines the environment as the totality of the nature and natural resources as well as the context within they exist and interact. This includes infrastructures which support socio-economic activities, light, water, and other things.
2. The natural environment is composed of the ecological units and components that function as this includes vegetation, animals, microorganism, atmosphere, rocks, soil etc.
3. The physical environment is made of the natural features that are characterized by rivers, rocks, vegetation and resources that are visible and varied in nature. The social environment refers to relationship that exists between individual and groups. It includes the culture, institution, organizations that are found in the community or society

Unit 2

Activity

1. Culture can be defined as the complex whole which consist of knowledge, language, values, customs, believes, arts and traditions that one's acquires as a member of society. It is learned and passed on from one generation to another.

   The reasons why we study the culture of any society can be summed as follows: - Firstly, to have an insight into the social life of the people. Secondly, is to understand the lifestyles of the people and know now to interact with. Since culture is passed on from one generation to another, it also the past of the people. It also enables one to appreciate the contributions of our ancestors of the present day development in terms of ideas, norms and values.

2. Culture is learned: That is we understand the culture of a people through interaction with the people in the study.
   Culture is dynamic. The society is not static there are innovations, interventions and new techniques coming up every day. These changes impact on the culture of the people.

   Culture passed on from one generation to another. This enables us to have a transition of ideas, values, customs and traditions from one set of people to another, thus it is shared.

3. Culture helps us to understand how things are created, developed, managed and changed. Each culture is unique. It will be difficult to find any culture that is exactly like another culture, but it is possible to find many similarities among different cultures.

   Based on the above characteristics, it is very easy to trace one's historical background or cultural heritage from other cultures. The similarities in material and non – material aspects are indicators for this analysis. Another example is the identification of the individual or group of individuals based on their cultural patterns and models. This can be seen in their conduct of ceremonies, religious beliefs and traditions.

Assignment

1. Culture is the total ways of life of a people. It consists of the norms, mores, values, customs, and ideas as well as knowledge of a given people from one generation to another. Culture is dynamic, it is not static
2. Culture is learned, Culture is shared, culture is dynamic, it is transmitted from generation another. It consists of material and non-material aspects of the people's ways of life. Culture is a complex whole that reflects the norms, values, traditions of the people and their customs. The discussions should be based on the various points with relevant examples
3. The contributions of culture can analyzed in terms of the following aspects: -
   i. It is a process of socialization of an individual or group of people.
   ii. It is a symbol of identity.
   iii. It reflects the historical and materialistic life of a people.
   iv. It contributes to social order in terms of conformity and social control.
   v. It highlights the life styles of the people and community.
   vi. It strengthens the bonds, affection and passion of the people.

Unit 3

Activity

1. *Wikipedia* (2009) defines a child as a human being between the stages of birth and puberty. Biologically, a child can also be described as anyone in the developmental stage of childhood between infancy and adulthood.

   The United Nations convention on the Rights of child defines a child as every human being below the age of 18 years, which includes adolescents.

2. Each child in every society is unique both as a member and a learner with each having different traits. Some of these includes
   i. Seeking out things to do
   ii. Curious, eager to try new things
   iii. Experience and express emotions freely
   iv. Physically active
   v. Smile and laughs a lot.

3. The child's Right Act 2003 (CRA 2003) contains a lot of provisions which includes the following: -
   - Right to life, survival and development
   - Right to name, nationality, privacy and family life
   - Freedom of association and peaceful assembly in conformity with the law and in accordance with the direction of his/her parents.
   - Freedom of thought, conscience and religion.
   - Freedom of movement subject to parental control
   - Freedom from discrimination
   - Respect for dignity of persons
   - Right to leisure, recreation, and cultural activities
   - Right to health and health services etc.

Assignment

1. Some of the traits of children are: - Seeking out things that are fun
   - Jumping from one interest to another
   - Curious, eager to try new things
   - Smile and laugh a lot
   - Creative and innovative
   - Physically active
   - Dream and imagine
   - Passionate
2. Core issues of the United Nation convention on the rights of the child are as follows;

- Children are entitled to full care and support
- Children have right to live their lives without restriction
- Children have right to education, social development.
- Children have right to association
- Children have right to religious beliefs and worship
- Respect for dignity of persons, molestation, injury and abuse of the child is prohibited by law.
- Right to leisure, recreation and cultural activities.

3. The extent to which Nigeria has domesticated the Child Rights Acts of 2003 is dependent on the states of the federation. While some have adopted these provisions, others have not. The implication of the differences is responsible for the treatment of children across the country. Child abuse, child labour and child tracking, child marriage and other social vices.

Unit 4

Activity

1. The three likely components of the children environment are language, physiological characteristics/health status and social behaviour and interaction.

   Language as one of the components of the child's environment constitutes a cognitive tool of great power. It transforms the child in the area of hearing, seeing, feeling, and understanding what is being said in the language.

   The physiological characteristics and health status of the child also counts as the access to good food supply, access to recreational facilities and increased safety concern. The wellbeing of the child is very significant to his development.

   The social environment determines the opportunities the child acquires. The child through peer group interaction can learn certain habits or skills that may make or mar the child's future carrier. A socially contaminated environment characterized by trauma, depression, despair and alienation can therefore affect the social behaviour of a growing child and subsequently make him/her maladjusted

2. Five things that can influence a child in any following: - (1) family (home), peer and friends, religious institutions, mass media, laws, rules, regulations and rights.

   The above agents can impact either positively or negatively on the child's personality development.

3. The likely effects of a child's environment in terms of his or her social behaviour and interactions could be as follows:
   - Ask questions.
   - Talk about tough or personal issues.

- Trust their own emotions.
- Trust self to make decisions.
- Forgive self for making mistakes.
- Be proud of an accomplishment, be proud of self, feel worthy on own merits.

MODULE 2

Unit 1

Activity

1. The concept of child rearing is embedded in the socialization process of any socialist group. It is the training, or upbringing of children by parents or parents-substitutes.
   Evans and Mayers (1994) observed that child rearing practice are embedded in the culture and determine to a large extent the behaviours and expectations surrounding a child's birth and infancy. They influence the child's behaviour. Thus, child rearing is usually rounded in cultural patterns and beliefs.
   The parents play a vital role in the child rearing.
2. Parenting is the process of raising and educating a child from birth until adulthood. Parenting refers to the activity of raising a child rather than the biological relationship. Parenting is usually done by the child's family e.g. Father, mother, close siblings, aunts, uncles, or grand parents. In some cases, children may be cared for by adoptive parents, foster parents or institutions (such as group homes or orphanage which are not so common in some rural area in Nigeria.
3. Highlights of parenting models in the unit include the following:
   - Rule of traffic model: this involves directives from parents to their children on rules of behaviour as it is done with traffic rules.
   - Fine gardening model: this involves parents "weeding out" or "pruning" the negative qualities of a child through the disciplinary process.
   - Reward and punishment model: parents reward the children for the good actions and punish the child for wrong committed. This can be done through praising the child (reward) while scolding or reprimanding (punishment) for bad action.

     In addition, there are recent models such as:
     a. Nurturant parents-model
     b. Attachment parenting
     c. Taking children seriously
     d. Parenting for everyone

Assignment

1. a) Child rearing is a process of promoting and supporting the physical, emotional, social and intellectual development of the child, from infancy to adulthood.
   b) While parenting involves raising and educating the child from birth until adulthood.

2. Models of children rearing that can be found in my community are the orientation approach, gardening and pruning model, and the reward and punishment approach. They can be used based on the community's situation. If a child misbehaves, he/she is

punished, however it the child does a good thing, he/she is commended. In addition, rules are applied to ensure orderliness and conformity in the community. The reason why parenting is a duty and not a hobby are mainly. First it is the responsibility of the parents to raise the child in a godly way. It is also the responsibility of the parents to care, love, support, and protects the child.

3. The reasons why parenting is a duty and not a hobby are many. Firstly it is the responsibility of the parents to raise the child in a godly way; it is also the responsibility of the parents to care, love, support, and protect the child. The parent's duty involves educating the children to better their potentials and provide a good future for them.

Unit 2

Activity

1. Some of the components of child rearing practices in Nigeria include the following;
    a. Guarantee the child's physical well-being, that is keeping the child safe and from any harm. Providing shelter, clothing, etc.
    b. Promoting the child's psychological well-being, providing emotional security, through socialization, showing love and affection.
    c. Supporting the child's physical development feeding, bathing, etc.
    d. Promoting child's mental development through interaction, stimulation and play.
    e. Facilitate the child interaction with others outside the home within the community, at school etc.
2. A child is trained in Nigeria by family members especially mothers on how to use the toilet. For example in Western Nigeria, the Yoruba women gives a command to the child by hissing and the child responds by urinating. In other, cultures when the child is aged one, he or she is taught how to use the toilet by the adults. In other cultures the growing child is taught body language when or she wants to use the toilet.
3. In Nigeria the cultural similarities and differences in terms of food habits. On a general note, every culture supports the concept of breast feeding for the young infants until they start eating solid foods.

    There also gender differences in the area of preparation of who cooks the food the female gender are mostly responsible for cooking and food preparation. However, in some societies, the males are allowed or take the responsibility to prepare the food for the family.

Assignment

Some of the children rearing practices in Nigeria are as follows: Language development, Discipline, punishment and character training, toilet etiquette, health habits, food habits, recreation and treasure, sex knowledge and training etc.

Example should be given based on the community's or ethnic group model and approach. This is because; they vary from one society to another.

Unit 3

Activity

1. Usuigo – Abanibe (1985) defines fostering/fosterage as the practice of relocating or transferring a child or children from their biological or natal homes to other homes where they will be raised and cared for by foster parents.

   The reasons for the practice are multiple. It can social, cultural, economic, religious, and psychological. In most cases it could be due to the parents wish or that of the grandparents.

2. There are different types and reasons for child fostering or fosterage. Basically, it comes as kinship, fostering, crises fostering, alliance and apprentice fostering as well as domestic fostering.
   - Kinship Fostering: Based on blood relationship either from the father's or mother's side
   - Crisis Fostering: Due to problems of the family e.g. separation, divorce, death etc.
   - Ward-ship and Alliance Fostering: Children sent to live with people based on personality, interest e.g. religious, political, economic and social.
   - Domestic Fostering: This promotes redistribution of children for domestic purpose. Children are expected to learn from the new parents.
   - Educational Fostering: Purely for educational purpose. They learn or are trained in formal school systems.

Assignment

1. Definition of child fostering
   - Relocation of child from biological parents to other people to raise them or educate them.

   Prospects (merits) of the foster parents include the following – it enables the biological mother freedom to engage in other things e.g. schooling, farming, business, etc.

Secondly, it reduces hardship and burden on the part of the parents since the children are transferred.

Thirdly, it promotes bonds in families and increases support for each other.

The problem (demerits) include: - It may become an economic burden for the foster parents. Secondly, it can create emotional stress for the parents and children.

Fourthly, it does not encourage small family size.

2. Ways in which fostering of children can be improved upon are the following: -

   Firstly, the number of family size should be controlled through family planning.

   Secondly, there should be close bond between the two parents and children. The parents should also show understanding and love for the children.

3. The concept of child rearing and fostering should be practiced based on knowing their duties and responsibilities as parents. The failure to perform their duties may lead to poor socialization of the children. Secondly, there can be emotional and economic stress when the population of the children increases. In addition, the bond between parents and children should be maintained always. Parents should see children as gifts from the Lord and care for them very well.

Unit 4

Activity

- The four benefits of proper and appropriate child rearing practice and parenting are as follows:
  a) In the area of obedience, the child is trained to respect and obey adults from one culture to another. For example, a Yoruba boy is trained not to call his senior, siblings by names, it is not so with Igbo's or Hausas.
  b) Another is the responsibility training children are taught on responsibility(s). a growing child can assist his parents in doing certain assignments.
  c) Nurturance training refers to the part by played by older siblings in caring for their younger ones in areas of domestic roles.
  d) Self – reliance training, children are trained to take care of themselves and to be independent of assistance from others, in supplying their needs or wants.
- The benefit that can be derived from cultural understanding by various ethnic groups can be seen in the following areas: firstly, theme is better understanding of the cultural differences among the various ethnic groups. Secondly it is capable of reducing ethnocentric feelings selves relating with these children at one point of their growth and development.

In addition, it can help erase the wrong impression and abusive practices of some people towards other cultures. Finally, educators and others within that locality are not likely to be involved in misjudging the appropriateness of such differing child rearing practices or parenting styles.

Assignment

- The different cultural practices in Nigeria are as follows:
- Obedience training
- Nurturance training.
- Self-reliance training discussions should be based on how the different ethnic groups practice each of the above points.

1. Some of the benefits of understanding children cultural difference can be analyzed in terms of: - Understanding the culture of the people, the values, customs and traditions of the ethnic groups. Secondly, the reasons why they behave in a particular way. To appreciate the ways of life of the people in addition to avoid conflict and culture shock.

Definition of Ethnocentrism

- It causes bias, conflict and crisis between groups.
- It creates a gap in the relationship, thus no unity of purpose among the groups.
- It promotes tribalism, nepotism, selfishness and hatred.

Activity

1. Communication has been described by Wikipedia (2009) as the process of transferring information from one source to another. It involves imparting or interchanging of thoughts, opinion or information by speech, writing or signs.
   Communication is usually described along a few major dimensions which include content - what type of things are communicated sources (emissary, sender or encoder, by whom in which form channel through which medium, destination – receiver or target (Decoder) to whom the purpose or pragmatic aspect.

2. There are different types of communication, namely the verbal communication written communication and non-verbal communication.
   - Verbal communication: - This includes face conversation over the phone, voice chat over the internet. It is basically oral in nature.
   - Written communication refers to general correspondence, reports of different types, procedures, records keeping, operating instructions, spreadsheet data, announcements, documentation and presentation.

- Non-verbal Communication comprise of pictures, signboard, photographs, sketches, paintings, vocal nuance, intonation, glance and posters.

3. Verbal communication is orally inclined such as conversation, talking to one on phone, voice chart over the internet and ace to face conversation (talk).

On the other hand non-verbal communication refers to the process of communicating through sending and receiving of wordless messages. This can be the form of facial expression, eye contact, gestures, body language and posture, paralinguistic and proximity. Others include photographs, sketches, paintings, etc.

MODULE 3

Unit 1

Assignment

1. Four types of non-verbal communication method includes
   - Body language such as body movement.
   - Pictorial representations.
   - Signboards.
   - Photographs, sketches.
   - Painting.
2. Different scholarly definitions of communication.

   Wikipedia (2009) defines communication as a process of transferring information from one source to another.

   Lawal (2004) defines communication as a process of sending information through a channel that is received and a feedback is given.

   Douglas Harper (2008) opines communication as sending a message through different media be it verbal or non-verbal.

3. Verbal communication involves the voice speaking, shouting, etc. non-verbal involves body language, pictures, sign posts, sketches.

   Verbal communication involves face to face interaction, while non-verbal is not.

   Verbal communication can be controlled in terms of volume, interaction and contact; non-verbal is permanent and fixed.

Activity

1. Family communication pattern is a communication perspective that focuses on the interaction between two or more persons and the patterns which emerge as they interact over time. It demands that each person within a family system. Communication within an interpersonal context and each communication acts reflects the nature of those relationships.
2. The different types of communication models are the conversation orientation and the conformity orientation. The first type refers to the model that encourages every members of the family to participate. In addition, the family environment emphasizes open communication and exploration of new ideas. It does not support a communication environment where children are better seen than heard. The other is the conformity orientation focuses on the parent's maintaining a relationship that encourages respects and obedience. This emphasis is maintaining the status quo, respect for constituted authority.

3. Five ways of promoting effective family communication patterns are as follows.
   - Frequent communicating.
   - Communicating clearly and directly.
   - Be an active listener.
   - Be open and honest.
   - Pay attention to non-verbal messages.
   - Be positive.. etc.

Discussion should be based on concrete examples that are relevant to each point.

Assignment

1. To a large extent it is true that there are different patterns of communication among families. Some families use the conversation orientation and other conformity orientation approach. Some families engage in frequent, spontaneous interactions with each other, they spend enough time together and can discuss to any extent any topic while the children are free to express their minds to each other. On the other, the conformity approach makes the children to rely on their parents in terms their expectations and conducts.
2. The effective ways' of promoting family communication are as follows:
   - Communicate clearly and directly.
   - Be an active listener.
   - Be open and honest.
   - Think about the person with whom you are communicating.
   - Pay attention to non-verbal messages.

Be positive I addressing the issues and problems in the family.

Unit 3

Activity

1. The two main types of communication categories among families are as follows: - conformity orientation and open communication model. Open conversation approach encourage members express themselves while conformity is based low or non-conversation orientation. Children tend to be shy people avoid communication because it is better to silent than to risk appearing foolish to talk.
2. The major family types includes:-
   - Pluralistic families.
   - Protective families
   - Families
   - Lassie-faire families.

Briefly discuss on each of the above families.

3. Effects of the four types of families.
   - A protective family makes children to be seen and not heard. Characterized by low self-reliance.
   - Aggressiveness, low in achievement orientation, etc.
   - Conversation families may perceive conflict in communication signals from their parents; they may speak openly, but only express opinion in agreement in less tension in the family.
   - Laissez-faire families: - it develops little cohesion in this type of families, they do not restrict members, they are free to hold similar or differing opinions and little communication occurs among family members.
   - Pluralistic families encourage free and open conversation among members in a supportive, communicative environment with few topical limitations.

Assignment

1. The impact of family communication helps in increasing the understanding between parents and children as well as other family persons or members,

   Secondly it allows for freedom of expression of one's feelings and experience

   - It enables parents to guide and counsel their children.
   - It clears doubts o issues and problems.
   - It reduces rumours mongering among the people and family members.
2. The type of family communication patterns and their effects on the children are as follows:-
   i. Pluralistic families.
   ii. Protective families.
   iii. Consensual families.
   iv. Laissez families.

The comparison and contrast depends on the locality that is being used for the case study.

Unit 4

Activity

1. Children are active participants in the world around them, begging with their immediate family. There are several ways children view themselves. As they grow and learn about the physical and social worlds, they join different cooperative social groups and cultivate a more and more complex sense of right and wrong. They may like something and acts that existed about then and develop interest in certain media

or dislike doing routine drills, be angry with a certain teacher or be intensely involved with a project.

The children may also view themselves as being a boy or girl child or adult depending on their ages. They may be conscious of the physical characteristics, either hall or short black or dark complexion or light skinned.

2. Children may view the other people around them in different ways. As they grow up and interact with their parents, relations and friends they develop a sense of feeling or feelings towards them. They learn certain traits from them as well. They can imitate them or are modeled towards them especially where they find them interesting and attractive. They become their role models.

Assignment

1. Children view the adults and other people around them with different perceptions. Some see the adults and other people as mentors. There is respect and obedience's to rules and regulation in the home and family setting. Secondly, they see as friends, companions and those they can confide in without fear or doubt. In addition, they expects love to be shown to them through care and support.

2. The unique ways children view themselves in any environment is dependent on the home, the people around, peer groups and the situation he/she finds them. A child can have absolute confidence in his/her self if the task at hand is something they can handle without difficulty.
   On the other hand, where they are afraid or doubt the issues around them, they can either harshly to the problem. The children have different gifts and potentials that can make them to see themselves as future leaders and important citizens in the society.

MODULE 4

Unit 1

Activity

1. School: is an institution designed to allow and encourage the students/pupils to learn under the supervision of teachers. There are private and public schools.
   - Schooling: This refers to an organized form of indoctrination that takes place in schools. It is a sub-set of education. It is instruction, education, or training, especially, when received in a school. Schooling is an act of teaching. It is a process of education linked with the formal system of education.
   - A community can be simply described as a ground of people with a common background or with shared interest with common history or common economic or political interest.
2. Definition of community. This is referring to a ground of interacting people living in a common location. There are different types of communities. These include a society made up of a ground; a body of people having common rights, privileges or intentions; the others include people living in the same locality or location. On wider note national levels of interactions.
3. The function of the school in child rearing is the socialization of the child. This can be in the form of learning new skills, trades and acquisition of knowledge in a particular field of study.
   The school creates opportunity and chance of the children to know many other children in the community, neighborhood or town which makes it easier for after-school socialization.

Assignment

1. Two ways through which the community participates in the rearing of the child is through home training and formal training at school. The home training is informal in nature. The child is taught by the parents, foster parents, siblings and older adults in the community. The training takes different forms. On the other hand, there is the formal training that takes place in a school. The school is managed by teachers and other instructors of different disciplines.
2. Definition of a School
   Explanation of public and private school. They are different in terms of their ownership and population of students.
   The effect of public schools can be seen in terms of the quality of education the quality basic facilities and infrastructures. The students/pupils pay more in private school than public schools thus the class population is high.

   On the other hand, the private schools have better facilities, they are well equipped and the welfare of the pupils and students are a top priority for the managers.

Although, they pay more, thus the effect is that the parents feel the financial burdens and load which can sometimes be very stressful.

Unit 2

Activity

1. Modernity refers to changing from traditional ways of doing thing and adopting new approaches, it also refers to being up to date with quality standards.
2. Modernity has influenced the Nigerian family in many ways. First, it has brought about positive changes in the health status of families. With modern science and researchers there have been breakthroughs in the predication of killer diseases. This has reduced mortality rates.

   Secondly, with modernity, there are new improvements in the social life of the people. There is new knowledge of dealing with issues and problems.

3. The third is the introduction of new technologies in the sense that stress has been reduced and time spent in such task are better managed.The three positive aspects of modernity include:
   a. Improvement and better standard of living.
   b. Improvement in health sector.
   c. Breakthrough in science and technology thus eliminating difficulties, waste of time and reducing stress in the area of manual labour.
   d. The negative effects include exposure to social vices with the use of social media.

The second is the reduction in the bond among parents and children, due to western model of lifestyle.

Assignment

1. Definition of modernity

- Benefits of modernity to parenting and child rearing are numerous. First, has made teaching easier and less stressful.
- The use of modern technology has also made the teaching to be better comprehended. Modernity has expanded to scope of learning. The whole world is a global village.

  Modernity has significant effect on the attitudes of individuals especially those countries that are undergoing the rapid social and economic changes that accompany industrialization and urbanization.

2. The problems of modernity can be seen in the area of loss of some cultural traits and traditions of our society.

There also exposure to social vices through the social media. Children learn bad habits from older siblings and other members of the society. The formative years of the children is very important, whatever they learn from their environment may likely mar their personality development.

Unit 3

Activity

1. Community or social network refer to the activities that exists between the child and those living in the community, it may involve parents, neighborhood, peer groups, teachers and those he/she interacts with in the community during the process of socialization.
2. The values of community or social support networks to child rearing includes: (1) Guidance (2) reliable assistance (4) reassurance of worth social integration and nurturance. On the whole, the social and community support networks are therefore expected to be recognized as vital tools for promoting proper child rearing among families and in the society.

Assignment

1. Definition of community network and support-networks.

- Three ways of social and community support-networks are as follows: (1) guidance (2) reliable alliance (3) attachment (4) reassurance of worth (5) social integration and (6) nurturance.

2. Social and community support network helps the children to survive. It also helps them to facilitate their participation and integration in activities that are regularly carried out in their communities. They connect children and other members of the community(s). They participate in local organizations, social, economic and other institutions in the community. Finally, it helps to embrace the building a future for them services.