

## AS-2293

**M.A./M.Sc. (First Semester) Examination, 2013**  
**Anthropology and Tribal Development**  
*Paper: Third*  
**(Basics of Archaeological Anthropology)**

### MODEL ANSWER

#### Section – A

1. Choose the correct answer:

- (i) Who use the term “Prehistory” for the first time:  
(a) John Lubbock (b) Daniel Wilson  
(c) M.C. Burkitt (d) Flavio Biondo
- (ii) Neanderthal man belongs to -  
(a) Solutrean cultural period (b) Aurignacian cultural period  
(c) Mousterian cultural period (d) Magdalenian cultural period
- (iii) Which one of the following emerged during post Neolithic period?  
(a) Microlithic Tools (b) Megalithic Monuments  
(c) Wheel Made Pottery (d) Polished Chisel
- (iv) The Palaeolithic Art in the form of paintings, engravings and carvings coexisted for the first time during -  
(a) Lower Palaeolithic period (b) Upper Palaeolithic period  
(c) Middle Palaeolithic period (d) All the above periods
- (v) Which dating technique is mainly applied to the heated materials?  
(a) Dendrochronology (b) Radiocarbon  
(c) Fluorite (d) Thermoluminescence
- (vi) The Megaliths found in India were systematically classified by -  
(a) V.D. Krishnaswamy (b) K.D. Bannerjee  
(c) H.D. Sankalia (d) K. Soundararajan
- (vii) The first evidence of man’s intentional use of fire associated with  
(a) Homo Erectus (b) Homo habilis  
(c) Grimaldi man (d) Ramapithecus
- (viii) Arrange the following tools in order of their chronology of appearance from early to later  
(a) Burin-side scraper-Celt-spear head  
(b) Side scraper-Burin-Spear head-Celt  
(c) Celt-Spear head-Burin-Side Scraper  
(d) Spear head-Burin-Celt-Side scraper
- (ix) Which cultural stage of the following saw the appearance of composite tools?  
(a) Upper Paleolithic (b) Neolithic  
(c) Mesolithic (d) Chalcolithic
- (x) Find proper sequence of the following sites in terms of cultural chronology.  
(a) Pallavaram - Daojali Hading - Lothal - Langhnaj  
(b) Daojali Hading - Lothal - Pallavaram - Langhnaj  
(c) Pallavaram - Langhnaj - Daojali Hading - Lothal  
(d) Lothal - Pallavaram - Langhnaj - Daojali Hading

#### Answer Keys:

- (i) b (ii) c (iii) b (iv) b (v) d (vi) a  
(vii) a (viii) b (ix) c (x) c

## Section – B

2. Why Archaeology is known as Multidisciplinary Discipline? Illustrate with suitable examples.

**Answer:**

The word archaeology is derived from Greek “archaiologia” ancient and “logia” logy. Hence, archaeology means ‘the study of ancient things’ and in practice it is the scientific study of people and societies of any era up to the present day by examining the artifacts. It is also defined as study of human activity in the past, primarily through the recovery and analysis of the material culture and environmental data that they have left behind, which includes artifacts, architecture, biofacts and cultural landscapes (the archaeological record). Archaeologists aim to discover how people lived by studying the things they made and used and the way they lived, worked etc.

**Different Branches of Archaeology**

(i) Historic Archaeology uses archaeological data both to test hypotheses about the operation of historically known societies and to fill in the historical gaps concerning the more mundane, but crucially important, aspects of the day-to-day functioning of those societies. (ii) Prehistoric Archaeology is concerned with testing anthropological theories of human behavior and cultural evolution against the archaeological record of societies that left no known written records. (iii) Experimental Archaeologists reconstruct techniques and processes used in the past to create artifacts, art, and architecture. (iv) Ethnoarchaeologists study people living today and record how they organize and use objects. (v) Maritime archaeology studies human interaction with water, including oceans, lakes and rivers by looking at their seafaring vessels, shore-side facilities and underwater landscapes. (vi) Urban archaeology, or city archaeology, includes looking at maps and city plans before the beginning of a construction projects. (vii) Forensic archaeology is the study of crime scenes to helps medical examiners, police officers and legal professionals solve homicides. They examine human remains to learn the age, gender, height and physical appearance of victims. (viii) Osteology archaeology studies bones, including skeletal structure, the teeth, bone hardening, disease and pathology. Similar to forensic archeologists, they identify human remains to determine age, sex, cause of death, and development and growth. (ix) Phoeniciology is the branch of archaeology in which archaeologists focus on ancient Phoenicia, including the areas in Cyprus, Malta, Sicily Corsica, Israel and Spain. (x) Environmental archaeology is the study of humans throughout history and how the environment shaped their cultures, including their ecological, economic and social implications. Reconstructing past environments gives archaeologists insight as to what adaptations past peoples needed to undergo in order to survive, and what environment changes may have played a role in their disappearance. Environmental Archaeology is commonly divided into three subfields: Archaeobotany, Zooarchaeology, Geoarchaeology (xi) Cognitive archaeology is a theoretical underpinning of archaeological research that is interested in the material expression of human ways of thinking about things, such as gender, class, status, kinship. It also needs to concern itself with evidence of early human technology and the ability of domesticating natural systems of energy. (xii) As archaeologists began to shift their attention from description to explanations of cultural changes, they came to appreciate the ways in which social dynamics structured the material remains of the past, as well as their contemporary interpretations of the archaeological record.

The science of archaeology has become hard to define because it no longer consists of looking at ancient cultures and peoples. The different branches of archaeology sometimes look at the past or examine recent events to form a story, including solving crimes. Each branch work together to form a tapestry of how people work and live, creating a picture of society as a whole.

3. Write short notes on absolute dating method. Describe briefly the principle and mechanism of amino acid method of dating.

**Answer:**

Determination of chronology is the most important task in the archaeological anthropology or prehistory. The purpose behind dating pre-historic materials is twofold i.e. to establish and study chronological arrangement of fossils and other evidences and to identify and reconstruct evolutionary interrelationships and bio-cultural history of early man.

There are two main approaches of dating by which dating of pre-historic archaeological materials are done. These are – Relative dating and absolute or chronometric dating. Relative dating methods are much simpler in form. It can be obtained through the techniques like stratigraphy, seriation, fluorine analysis, typology, patination etc. It provides a sequence of culture but does not present the time frame. Therefore accurate date in terms of specific year is absent here. One may know the age of a particular culture in connection to other cultures i.e. a culture may be termed as old or new in the perspective of associated cultures.

When the date of pre-historic materials is expressed in absolute or actual years, it is called as absolute method of dating. This is also known as direct method of dating because in this method associated finds are dated directly and date is determined in absolute years. There are a number of methods by which absolute dating of archaeological materials are done. These are as follows - dendrochronology, radio-carbon method, potassium-argon method, fission-track method, thermoluminescence, amino acid method etc.

Several amino-acids are present in the bones of human beings. When polarised light is thrown on them, some of them rotate the light to the left, when others rotate the light to right. Amino Acid method is based on that certain types of amino acids exist in two alternative structural forms. Their chemical composition is identical but the atoms arrangement is reversed in one of the forms. The two forms are called L (laevo-) and D (dextro-) form. In living systems the L-form is synthesized, but after death these L-forms undergo a slow transformation and change to D-form. Amino acid racemization dating (AAR) measures changes between these amino acids 'L- and D-forms; their ratio is an indication of age. The process is called racemization. The Extend of racemisation correlates with time and can be used for dating. Bones, teeth and shells contain proteins that break down after death, and the most commonly investigated products of decomposition are amino acids. It has been demonstrated that racemisation of a specific amino-acid called as aspartic acid has taken place in a period between 5000 to 100,000 years. Thus, by identifying the D-isomers of aspartic acid, date of bone samples can be calculated.

4. Write briefly about the upper Palaeolithic culture of Europe.

**Answer:**

The upper Palaeolithic culture coincided with the last phase of the Ice Age when climate became comparatively warm. This cultural phase began around 36000 BC all over the old world and came to an end around 9000 BC. It has a duration of barely 27000 years which is less than 3 percent of the duration of Lower Palaeolithic phase and 6 percent of the duration of middle Palaeolithic phase. Upper Palaeolithic is authored by fully evolved human group viz Homo Sapiens. The early Homo Sapiens were called Cro-Magnon man after the name of the site (in France) where it was first recorded. Both culturally as well as biologically, these early human groups slowly differentiated to form different human groups with their distinct cultures.

Silent characteristic features of Upper Palaeolithic Culture

- (a) Last phase of Palaeolithic period
- (b) Covers 1/10 of whole Palaeolithic period
- (c) Emergence of Blade tool (two parallel sides, length=2width, made up of flake tool)

- (d) Used bone tools
- (e) Evidence of dwelling place
- (f) Hunter and Gatherer
- (g) Some important tools are – scrapers, graters, points (chert, peronian, willow & lowrel leaf), harpoons, denticulates etc.

### **Cultural Traditions observed in Upper Palaeolithic culture of Europe**

- (a) Perigordian Tradition (I<sup>st</sup> Wurm):** Named after the site Perigord in Southwest France. This tradition is characterised by large curved points & blunted back with sharply retouched. It is further classified as -
  - (i) Lower Perigordian characterised by Chertalperonian Point
  - (ii) Upper Perigordian characterised by Gravetian Point
- (b) Aurignacian Tradition (II<sup>nd</sup> Wurm):** Named after the site Aurignac in South West France. It is classified as -
  - (i) Lower Aurignacian
  - (ii) Middle Aurignacian (Traditional Aurignacian)
  - (iii) Upper Aurignacian
 Some of the important tools of this tradition are chertalperonian point, gravetian point, aurignacian backed blade etc.
- (c) Solutrian Tradition (II<sup>nd</sup> last Wurm):** Named after the rock shelter site Houtou, Central France. This tradition is mainly recognized as finest tool making technique. Some of the important tools of this tradition are Lowrel Leaf Point and Willow Leaf Point
- (d) Magdalenian Tradition (III<sup>rd</sup> Wurm):** Last tradition of Upper Palaeolithic culture. Emergence of bone tools and art were observed in this period. Some of the important tools of this tradition are Harpoons, Burins, backed knife, denticulate etc.

### **5. Write short notes on:**

- (i) Mesolithic Art in India

#### **Answer:**

The earliest evidence of the artistic capabilities of man goes back to lower Palaeolithic. However, the full flowering of this skill was visible only from Upper Palaeolithic onwards. But one may be reasonably sure that some crude form of art was being practised earlier which has not been preserved. Beautiful cave painting and objects of art of Upper Palaeolithic and Mesolithic cultural period have been found from the caves and rock shelters of India.

Prehistoric Art can be studied under two broad categories such as home art and cave art. Home art is mostly found in the habitual prehistoric sites. This is also known as mobiliary or movable art. Especially they are made on bone, teeth, stone tools, clay etc. Whereas cave art is known as immovable art and they are mostly found on the wall of the cave or rock. It includes the paintings of animals, hunting, dancing etc.

The Adamgarh, Mahadeo and Bhimbhetka hills in the Vindhyan range of Madhya Pradesh are full of Palaeolithic and Mesolithic cultural remains especially Mesolithic paintings. The earliest paintings are of bison, elephants, tigers, rhinos and boars. Mesolithic paintings are smaller in size although the themes did multiply.

Paintings were made with white pigment, with black or deep purple obtained from magnesium oxides and copper compounds to produce a bright shade of green while the great majority of paintings were done with hematite or other oxides of iron to provide colours in red, yellow, orange or brown. Granite rocks of north Karnataka and Andhra Pradesh provided suitable canvases to Neolithic man; Kupgallu, Piklihal and Tekkalkota are the three important

sites. Apart from the depiction of various animals a site from Kuppallu presents a number of unique scenes where excited males outsized organs are abducting females.

(ii) Mesolithic Tool

**Answer:**

With the end of Pleistocene there was a great change of environment all over the world. Fauna and flora developed to suit this changed face of the world. There is ample evidence known from the entire world to show how man had also to adapt to this new environment. Mesolithic cultural period emerge after the end of upper palaeolithic cultural period.

In general most of the Mesolithic culture contains microlithic tools prepared on tiny and thin blades. By microlith we understand a narrow flake blunted on one or both edges by steep secondary work on either face. Many microliths are extremely small in size and conform to geometric shapes while others tend to be larger and less regular in form. Further, many microlithic industries contain a variable amount of tiny flake and core tools which do not carry steep retouching.

Mesolithic tools are comparatively very small in size as compared to the previous traditions. Collectively, they are called as microliths. The microlithic tools are mainly in geometric in shape. Some of the important examples of mesolithic tools are – Retouched blades, Points, Lunates or Crescents, Trapezes, Triangles, Semi triangular, Quadrilateral etc. Pressure fluting and retouching techniques were mostly used for making such tools besides pressure flanking, resolved flanking techniques etc.

**6. Define prehistoric tool and briefly discuss the techniques used by early man for making mesolithic tools.**

**Answer:**

Cultural reconstructions in the study of Palaeolithic prehistory is mainly done by studying the material left-overs of prehistoric man's activity. As it happens more than 90% of these left-overs constitute of stone or bone objects specifically shaped by the prehistoric man to fulfil his specific needs. A detailed and objective study of the stone tools of the prehistoric period cannot only demonstrate the basic code of the culture in that period but it also indicates a generalised status of technology at that stage. Some of the commonly used materials for making tools by pre-historic man include wood, bone, shell, stone and metal

Stone tools are manufactured by breaking selected piece of stone with another stone hammer or by using a compact bone or antler hammer. The initial blows delivered to obtain the desired shape as a first step towards tool manufacturing are usually done with a stone hammer. It is only in final shaping of the desired thickness or sharpness that the soft hammer is profitably used. The initial blows which strip the mantle of the stone are called primary flakes. Subsequent working takes out flakes which are called secondary, tertiary and so on. Minute flaking on border to obtained a point or a sharp border and these flaking are called retouching. Flake is always identified by the presence of a positive bulb of percussion on one of its surfaces while a core usually carries the corresponding features viz. a negative bulb of percussion.

**Tool making techniques**

- (i) Cylinder hammer (bone hammer, hollow hammer or soft hammer) Technique
- (ii) Percussion Technique      (iii) Punching Technique      (iv) Fluting Technique
- (v) Flaking Technique      (vi) Step Flaking or Resolved Flaking Technique
- (vii) Pressure Flaking Technique (Fish scale flaking)      (viii) Clactonian Technique
- (ix) Swinging-blow Method      (x) Levallois Technique (Pre-pared core Technique)
- (xi) Grinding and Polishing Technique

**Important techniques used for making Mesolithic tools**

(a) *Step Flaking or Resolved Flaking Technique*: When the blow is directed towards the centre of the core the force becomes zero after travelling a distance within the nodule. Immediately a crack develops on the surface along the periphery of termination of force. Thus, a flake is detached where the tail end is the result of a cleavage. Flakes detached by such a technique are always thick at the end opposite to the point of impact / butt end / bulbar end. This technique of manufacture is often referred to as *step flaking* or *resolved flaking* technique.

(b) *Prepared Core Technique*: It involves the taking out of a number of flakes from one face of nodule from all around its periphery in a centripetal manner as first step. These prepared cores look like inverted tortoise shell and therefore usually referred to as tortoise core. Striking platform is prepared before blowing along with bluntly trimming of the sides and is almost of the same size and shape as the dressed area on the tortoise core. Finally a calculated blow is delivered on the top of the shaped surface in such a manner that a flake comes out of the core. The detached flake has a faceted butt and carries the previous dressing on its dorsal surface and is almost the same size and shape as the dressed area on the tortoise core. The only feature which goes to define a Levallois flake is the occurrence of centrally directed flakes on the dorsal surface. This technique was introduced towards the end of the 2<sup>nd</sup> interglacial period (Europe). This method was also used in Africa and Asia and continued till Neolithic times in Egypt.

(c) *Pressure Flaking Technique (Fish Scale Flaking)*: It's a technique in which fine shallow flakes are removed from the surface. It is suitable for fine workmanship and it was mostly used in the beginning of Mesolithic cultural period.

(d) *Fluting Technique*: It is a percussion technique (whether direct or indirect) used to remove a series of uniformly thin parallel sided blades in rapid succession from prepared cores. In order to make blade, shallow flakes are detached from fluted core (a core already dressed by means of punch made of bone). Characteristics of Blade – long, narrow, thin and flat flake having more or less two parallel margins.

(e) *Retouch*: To retouch is to fit out, carve or transform into tool a product of flaking by percussion or by pressure. Steep retouching is meant to blunt a naturally obtained sharp blade border or to reinforce the sharpness of a point.

**7. Define Civilization and write in brief how Indus Valley Civilization came to an end.**

**Answer:**

**A brief description on Civilization:**

The word civilization comes from the Latin “civilis”, meaning civil / citizen, and “civitas” meaning city or city-state. It is the cooperation of large groups of people not only to survive but to maximize comfort and productivity. Humans started to settle down and farm which led to greater numbers of people surviving and people found that cooperating gave more benefits. The advent of agriculture (plant and animal domestication) brings the beginning of civilization. It depends on agriculture for subsistence. Trade and communications became important. Civilizations have been distinguished by their means of subsistence, types of livelihood, settlement patterns, forms of government, social stratification, economic systems, literacy, and other cultural traits.

**Important Sites of Indus Valley Civilization:**

- a. Harappa situated in Punjab
- b. Mohanjodaro situated in Sindh
- c. Chanudaro situated in Sindh
- d. Lothal situated in Gujarat
- e. Kalibangan situated in Rajasthan
- f. Banwali situated in Haryana

**Silent characteristic features of Indus Valley Civilization:**

- a. *Town Planning and Structure* – well planned city, cities were divided into blocks, drainage system, lamp post for street lighting, separate dwelling house and public building, dwelling house contained two rooms, a kitchen, courtyard, bath room and an upper storey; public bath place, granary; buildings were made of burnt bricks
- b. *Social Conditions* – emergence of cities, different occupation and division of classes (learned or intellectual elite – warriors, traders and traders and artisans - labourers), worship of god, trees, animals
- c. *Economic Activities* – abundance of fertile soil leads to progression of agriculture, use of potter's wheel, weaving, jewellery of silver and precious stones, trade and commercial links
- d. *Script* – seals, ceiling and pots have legends in pictographic scripts comprising some four hundred signs. Script has still not been properly deciphered and it is generally agreed that the script was written from right to left.

**Assumption behind the end of Indus Valley Civilization:**

- a. Decrease fertility due to increase in salinity of the soil caused by the expansion of the neighbouring desert
- b. Floods – wipe out whole cities
- c. Invasion of Aryans – destroyed the Harappan culture. Though, archaeological evidence of clear contact between the Aryans and the Harappans has been lacking
- d. Nuclear explosion or arson by extra-terrestrials
- e. According to Dr. Dmitriyev, the sudden disappearance or destruction of Indus civilization could have been due to natural phenomenon called “black lightning” an explosion with venomous power due to atmospheric physico-chemical explosion

8. State about the salient features of Neolithic Culture with special reference to Indian context.

**Answer:**

**Neolithic Culture**

Neolithic culture marks great technological and economic changes in society. These changes are of such a far reaching importance that many scholars have termed this phase as “Neolithic Revolution”. Although the Neolithic age began much earlier, in 7000 BC, Neolithic settlements in the Indian Sub-Continent are not older than 4000 BC. Chief characteristics of Neolithic culture were found in all human species inhabiting the different parts of the world at that time. But there was no similarity in Neolithic culture of different regions. It was because different region did not possess same climate and regional features. But in spite of all these regional variations, some chief characteristics of Neolithic culture had emerged.

**Salient Features of Neolithic Culture**

- (a) Agriculture
- (b) Invention of agriculture Implements
- (c) Invention of Pottery
- (d) Domestication of animals
- (e) Advance Social Organization
- (f) Carpentry and other tools for construction of house
- (g) Art of thread making and weaving
- (h) Manufacture of Boat
- (i) Increase in population size,
- (j) Beginning of settled life,

- (k) Planning of Village
- (l) Division of Labour
- (m) Social Organization and
- (n) Development of Culture

### **Important Neolithic Sites of India**

**a. Northern Zone – Burzahom** [The first discovery of this site was made by De Terra and Paterson in 1935. The Neolithic people lived in this region on a plateau in pits and probably had a fishing and hunting economy with faint clue of cultivation. The deposit of Burzahom is divided into four periods, out of which the first two are Neolithic, the third Megalithic and the last is early historic. Pit dwelling is the most distinctive characteristic of this site. The carbon dating indicate a time bracket for this culture of 2400-1400 BC]

**b. Southern Zone – Brahmagiri, Sangankallu and Tekkalkota** [The earliest manifestation of Neolithic culture in south India is seen in Sanganakallu which was dug by Subbarao. Wheeler dug at Brahmagiri. The pointed-butt polished axe seems to be the characteristic tool of southern Neolithic culture. The available carbon dating show that the southern Neolithic time spread is confined to 2500-1000 BC.]

**c. Eastern Zone – Daojali Hading and Chirand** [Excavation in this region has given for the first time stratigraphical occurrence of ground or polished stone axes and also pottery in a fairly deep deposit. Numerous pot sherds were discovered from the excavations and significantly in association with stone axes. Pottery is handmade and decorated with cord impressions or basket impressions. Neolithic man here lived in mud walled houses.]