

**ARUNACHAL PRADESH PUBLIC SERVICE COMMISSION, ITANAGAR**  
**SUBJECT: ZOOLOGY**

**Time : 3 hours**

**Full Marks : 200**

**Note: Question No. 1 is compulsory and answer any four from the remaining seven questions. All questions carry equal marks.**

**Q. No. 1. Attempt any 10 (ten)**

**4 x 10 = 40**

- A. Classify the phylum arthropoda (upto subclass) giving examples.
- B. Write the mechanisms of asexual reproduction in amoeba.
- C. Describe the function of ctenidium with the help of a labelled diagram.
- D. Draw a labelled diagram of plasma membrane and write its function.
- E. Write briefly a note on commensalism with examples.
- F. Differentiate between diapsida and anapsida with examples.
- G. Write the different orders along with characteristics of class amphibia.
- H. Differentiate between cercaria and metacercaria larva.
- I. Write briefly the cortical reaction during fertilization.
- J. Describe Mendel's dihybrid ratio with examples.
- K. Give reasons why Balanoglossus is regarded as a hemichordate.
- L. Discuss the phenomenon of incomplete dominance and co-dominance with examples.

**Q.No. 2. Attempt any eight (eight)**

**5 x 8 = 40**

- A. Describe the adaptive characteristics of desert animals.
- B. Write the role of pancreas in digestion.
- C. What is retrogressive metamorphosis? Write briefly on neoteny giving examples.
- D. Distinguish between the structure and function of rough and smooth Endoplasmic Reticulum.
- E. Mention the names of ten endangered animal species available in Arunachal Pradesh.
- F. Differentiate between breathing and respiration. Draw the oxyhaemoglobin dissociation curve and write its significance.
- G. What is linkage map? Describe the method of determination and drawing the linkage map in eukaryotes.
- H. Mention few names of harmful insect pests for rice, maize, citrus and silkworm and write briefly on their chemical control.
- I. Draw a labelled diagram of a flame cell and describe its function
- J. Define allele. Write a brief note on multiple allele giving suitable examples.

**Q. No. 3. Attempt any five (five)**

**8 x 5 = 40**

- A. Define spermiogenesis. Describe the process of spermatogenesis in mammals with labelled diagram.
- B. Explain the water vascular system in echinodermata and its functional significance