



# **PUNJAB PUBLIC SERVICE COMMISSION**

## **COMBINED COMPETITIVE EXAMINATION 2017** **FOR RECRUITMENT TO THE POSTS OF** **PROVINCIAL MANAGEMENT SERVICE, ETC.**

**SUBJECT: ZOOLOGY (PAPER-I)**

**TIME ALLOWED: THREE HOURS**

**MAXIMUM MARKS: 100**

**NOTE: Attempt FIVE Questions with at least TWO Questions from Each Section. Attempt in Urdu or English.**

### **SECTION – I**

**Q No. 1:** a) ✓ Discuss different types of Nutrition in Protozoa.  
b) ✓ Demonstrate skeleton in Porifera.  
**(10+10=20 Marks)**

**Q No. 2:** a) Describe parasitic adaptations of Platyhelminthes.  
b) ✓ Give an account of water vascular system in Echinodermata.  
**(10+10=20 Marks)**

**Q No. 3:** a) Explain metamerism and tagmatization in Annelids.  
b) Define and mention various types of metamorphosis in Arthropoda.  
**(10+10=20 Marks)**

**Q No. 4:** ✓ Write short notes on any FOUR of the following:- **(4x5=20 Marks)**

- a) Skeleton in Echinodermata.
- b) Nematocysts.
- c) Pseudocoelomates and Coelomates.
- d) Shell in Mollusca.
- e) Ecdysis.

### **SECTION – II**

**Q No. 5:** a) ✓ Give an account of swim bladder in fishes.  
b) ✓ Describe extinction of Dinosaurs.  
**(10+10=20 Marks)**

**Q No. 6:** a) What do you know about excretion and osmoregulation in Amphibia?  
b) Explain evolution of flight in birds.  
**(10+10=20 Marks)**

**Q No. 7:** a) Describe basic plan of vertebrate body.  
b) Give comparative account of evolution of jaw in vertebrates.  
**(10+10=20 Marks)**

**P.T.O**