



**FEDERAL PUBLIC SERVICE COMMISSION**  
**COMPETITIVE EXAMINATION FOR**  
**RECRUITMENT TO POSTS IN BS-17**  
**UNDER THE FEDERAL GOVERNMENT, 2015**

Roll Number

**ZOOLOGY, PAPER-I**

<b>TIME ALLOWED: THREE HOURS</b> <b>PART-I(MCQS): MAXIMUM 30 MINUTES</b>	<b>PART-I (MCQS)</b> <b>PART-II</b>	<b>MAXIMUM MARKS = 20</b> <b>MAXIMUM MARKS = 80</b>
<b>NOTE: (i) Part-II is to be attempted on the separate Answer Book.</b> <b>(ii) Attempt ONLY FOUR questions from PART-II, by selecting TWO questions from EACH SECTION. ALL questions carry EQUAL marks.</b> <b>(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.</b> <b>(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.</b> <b>(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.</b> <b>(vi) Extra attempt of any question or any part of the attempted question will not be considered.</b>		

**PART-II**  
**SECTION-I**

- Q. No. 2.** (a) Describe the importance of insects to mankind. **(10 each) (20)**  
(b) Explain acoelomate, pseudocoelomate and coelomate conditions in animals.
- Q. No. 3.** Write a detailed essay on Metazoa. **(20)**
- Q. No. 4.** What is polymorphism? Compare a poly p of Obelia with medusa of Obelia. **(20)**
- Q. No. 5.** Earthworms are friends of farmers! How? Discuss in detail. **(20)**

**SECTION-II**

- Q. No. 6.** (a) Describe different types of cartilage found in vertebrates. **(10 each) (20)**  
(b) What are different views regarding sense organs in mammals.
- Q. No. 7.** (a) What is a placenta? Give an account of placentation in mammals. **(10 each) (20)**  
(b) Explain the physiology of muscle contraction and relaxation.
- Q. No. 8.** What is excretion? Give an account of various types of excretory products in animals. **(20)**

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Roll Number

**ZOOLOGY, PAPER-II**

<b>TIME ALLOWED: THREE HOURS</b>	<b>PART-I (MCQS)</b>	<b>MAXIMUM MARKS = 20</b>
<b>PART-I(MCQS): MAXIMUM 30 MINUTES</b>	<b>PART-II</b>	<b>MAXIMUM MARKS = 80</b>

- NOTE:** (i) **Part-II** is to be attempted on the separate **Answer Book**.  
(ii) Attempt **ONLY FOUR** questions from **PART-II**, selecting **TWO** questions from **Each Section**. **ALL** questions carry **EQUAL** marks.  
(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.  
(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.  
(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.  
(vi) Extra attempt of any question or any part of the attempted question will not be considered.

**PART-II**  
**SECTION-A**

- Q. No. 2.** (a) What is gene expression? Describe the role of tRNA, mRNA and rRNA in protein synthesis? (10)  
(b) Describe the structure & function of Golgi complex? (10) (20)
- Q. No. 3.** (a) How Hypothalamus-Pituitary Gland regulate and control thyroid endocrine functions in mammals? (10)  
(b) How oxygen is transported in blood? (10) (20)
- Q. No. 4.** (a) What is the role of nephrons in urine formation? How different types of Leukocytes (white blood cell) are formed in body? (10)  
(b) How proteins are digested and absorbed in gastrointestinal tract? (10) (20)
- Q. No. 5.** (a) Compare Mendelian Principle of Segregation with that of Independent Assortment? (10)  
(b) How external environment effects gene expression? (10) (20)

**SECTION-B**

- Q. No. 6.** (a) "Ontogeny repeats phylogeny". Discuss and compare the Theory of Recapitulation (Biogenic Law) proposed by Ernst Haeckel with Von Baer's Rule of Embryology, postulated by Karl Ernst Ritter von Baer. (10)  
(b) How you will reconcile the debate between religion and science on the issue of evolution of human being. (10) (20)
- Q. No. 7.** (a) "Living (biotic) organisms and their nonliving (abiotic) environment are inseparably interrelated and interact upon each other" Discuss (10) (20)  
(b) Define & differentiate between: (2½ each) (10)  
(i) Food Chain & Food Web  
(ii) Stenothermal & Eurythermal  
(iii) Lentic & Lotic Communities  
(iv) Fisheries & Aquaculture
- Q. No.8.** (a) "Ecosystems are capable of self-maintenance and self-regulation as are their component populations and organisms" Discuss (10) (20)  
(b) Write short notes on (2½ each) (10)  
(i) Conservation of Biodiversity  
(ii) Climate Change & Global Warming  
(iii) Liebig's Law of the Minimum  
(iv) Positive Interactions (Commensalism, Cooperation & Mutualism)

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