

ZOOLOGY, PAPER-II

**FEDERAL PUBLIC SERVICE COMMISSION
COMPETITIVE EXAMINATION FOR
RECRUITMENT TO POSTS IN BPS-17 UNDER
THE FEDERAL GOVERNMENT, 2009**

S.No.	
R.No.	

ZOOLOGY, PAPER-II

TIME ALLOWED:	(PART-I) 30 MINUTES	MAXIMUM MARKS:20
	(PART-II) 2 HOURS & 30 MINUTES	MAXIMUM MARKS:80

- NOTE:** (i) First attempt **PART-I (MCQ)** on separate **Answer Sheet** which shall be taken back after **30 minutes**.
(ii) **Overwriting/cutting of the options/answers will not be given credit.**

PART – I (MCQ)
(COMPULSORY)

- Q.1. Select the best option/answer and fill in the appropriate box on the Answer Sheet. (20)**
- (i) Which part of the brain detects temperature changes in the blood?
(a) cerebellum (b) cerebral hemisphere (c) hypothalamus
(d) medulla (e) None of these
- (ii) From which of the following is urea formed?
(a) fat (b) glycerol (c) protein
(d) starch (e) None of these
- (iii) Where are hormones destroyed?
(a) adrenal gland (b) kidney (c) liver
(d) pancreas (e) None of these
- (iv) During the beating of the heart, in which region will the highest pressure develop?
(a) left atrium (b) left ventricle (c) pulmonary artery
(d) right ventricle (e) None of these
- (v) Which molecules are produced by the digestion of starch and of protein?
(a) glycerol and amino acids (b) glycerol and fatty acids (c) sugar and amino acids
(d) sugar and fatty acids (e) None of these
- (vi) Which type of cell stimulates the release of adrenaline?
(a) white blood cells (b) muscle cells (c) pancreatic cells
(d) red blood cells (e) None of these
- (vii) Which secretion, released into the alimentary canal, contains no enzymes but speeds up fat digestion?
(a) bile (b) intestinal juice (c) mucus
(d) pancreatic juice (e) None of these
- (viii) Which of the following normally enters the blood as it passes through the pancreas?
(a) amino acids (b) glycogen (c) insulin
(d) lipase (e) None of these
- (ix) Which of the following is an example of discontinuous variation?
(a) blood group (b) height (c) intelligence
(d) weight (e) None of these
- (x) Which of the following would be more prominent in a secretory cell than in a non-secretory cell?
(a) golgi apparatus (b) mitochondria (c) ribosomes
(d) pinocytotic vesicles (e) None of these
- (xi) Which of the following is found in both DNA and messenger RNA?
(a) ribose (b) thymine (c) sugar-phosphate chain
(d) double helix structure (e) None of these
- (xii) What is carried by a molecule of transfer RNA?
(a) an amino acid molecule (b) enzyme for protein synthesis (c) information from the DNA
(d) sequence of codons (e) None of these

ZOOLOGY, PAPER-II

- (xiii) The populations of all the species in a given habitat are referred to as the:
(a) biosphere (b) community (c) ecosphere
(d) ecosystem (e) None of these
- (xiv) Which of the following is not recycled in ecosystem?
(a) carbon (b) energy (c) sulphur
(d) water (e) None of these
- (xv) In most ecosystems, the greatest amount of energy flows through the:
(a) secondary consumers (b) herbivores (c) carnivores
(d) decomposers (e) None of these
- (xvi) During which phase of meiosis are chiasmata formed?
(a) prophase I (b) metaphase II (c) metaphase I
(d) telophase II (e) None of these
- (xvii) Who proposed the mutation theory of Evolution?
(a) Lamarck (b) Darwin (c) de Vries
(d) Wallace (e) None of these
- (xviii) During which stage of meiosis do homologous chromosomes separate?
(a) prophase I (b) prophase II (c) anaphase I
(d) anaphase II (e) None of these
- (xix) In a DNA molecule, the bases of pyrimidine are:
(a) thymine and cytosine (b) cytosine and guanine (c) adenine and thymine
(d) thymine and guanine (e) None of these
- (xx) Triassic and Jurassic periods are included in the:
(a) Palaeozoic era (b) Mesozoic era (c) Coenozoic era
(d) Proterozoic era (e) None of these

PART – II

NOTE:	<p>(i) PART-II is to be attempted on the separate Answer Book.</p> <p>(ii) Attempt ONLY FOUR questions from PART-II. All questions carry EQUAL marks.</p> <p>(iii) Extra attempt of any question or any part of the attempted question will not be considered.</p>
--------------	---

- Q.2.** (a) Give an account of the mechanisms by which the living cell is believed to synthesize proteins. **(12)**
(b) Explain how carbon dioxide is transported by the blood? **(8)**
- Q.3.** (a) Describe the structure and functions of cell membrane. **(12)**
(b) How is the nerve impulse generated and conducted. **(8)**
- Q.4.** (a) Describe prophase-I of meiosis in detail with the help of labeled diagrams. **(10)**
(b) Give an account of digestion of food in mammals. **(10)**
- Q.5.** (a) Describe the structure and functions of Endoplasmic reticulum. **(10)**
(b) What is haemoglobin? How it carries oxygen in the blood? What happens when carbon monoxide combine with haemoglobin? **(7)**
(c) Differentiate between pinocytosis and phagocytosis. **(3)**
- Q.6.** (a) Give an account of Mendel's law of segregation with example. **(10)**
(b) What is vestigial organ? Presence of vestigial organs is taken as an evidence of evolution. Discuss. **(10)**
- Q.7.** (a) What are biogeochemical cycles? Describe the carbon cycle in detail. **(10)**
(b) Given an account of Lamarck's theory of evolution. **(10)**
- Q.8.** Write short notes on: **(5+5+5+5)**
(i) Natural Selection (ii) Mutation
(iii) Hormones (iv) Chromosomal aberration
