

27

11

FEDERAL PUBLIC SERVICE COMMISSION
COMPETITIVE EXAMINATION FOR RECRUITMENT TO POSTS
IN BPS-17 UNDER THE FEDERAL GOVERNMENT, 2001.

ZOOLOGY, PAPER-I

TIME ALLOWED: THREE HOURS

MAXIMUM MARKS: 100

NOTE: Attempt FIVE questions in all, including question No.7 which is COMPULSORY. Select at least TWO QUESTIONS from each of the SECTIONS 'A' AND 'B'. All questions carry EQUAL marks.

SECTION 'A'

- Q.1. (a) Briefly describe four different methods of ASEXUAL REPRODUCTION met in the PROTOZOA. 7
- (b) Give a brief account of different types of spicules found in PORIFERA. 7
- (c) Define POLYMORPHISM. Discuss the phenomenon with reference to order SIPHONOPHORA (COELENTRATA). 6
- Q.2. (a) Write a short essay on affinities of CTENOPHORA. 6
- (b) Discuss the general adaptation of parasitic mode of life with special reference to phylum PLATY HELMINTHES. 7
- (c) Give an account of two broad types of NEPHRIDIA found in POLYCHAETA. 7
- Q.3. (a) Define METAMORPHOSIS and discuss the phenomenon with reference to INSECTS. 7
- (b) Write a short essay on TORSION in GASTROPODA. 7
- (c) Discuss REGENERATION with special reference to ECHINODERMS. 6

SECTION 'B'

- Q.4. (a) Discuss the possible origin of the CHORDATES. 7
- (b) Give a brief account of the evolutionary changes in HEART in different classes of CHORDATES. 7
- (c) Write a short note on anatomy of the MAMMALIAN KIDNEY. 6
- Q.5. (a) Describe the two basic types of CLEAVAGE with reference to CHORDATES. 7
- (b) Write an essay on PLACENTATION IN MAMMALS. 6
- (c) Develop an outline on adaptation of FLIGHT IN BIRDS. 7
- Q.6. Write short notes on the following: 20
 - (a) CAUDAL FINS IN FISH
 - (b) NOTOCHORD
 - (c) VIVIPARITY
 - (d) FEATHERS IN BIRDS

COMPULSORY QUESTION

- Q.7. Write only the correct answer in the Answer Book. Do not reproduce the questions.
 - (A) Which of the four options make the following statements correct. On your answer books just write the question number and one of the serial alphabets.

- (1) Insects are characterized by:
 (a) 3 pairs of legs (b) Two pairs of antennae
 (c) Wings on body (d) Large sized eggs
 (e) None of these.
- (2) Body is metamerically segmented in:
 (a) Porifera (b) Annelida
 (c) Coelentrata (d) None of these
- (3) Which of the following arthropod are totally aquatic:
 (a) Crustaceans (b) Insects
 (c) Millipedes (d) None of these
- (4) Dorsal tubular nerve cord is characteristic of:
 (a) some chordates (b) some non chordates
 (c) all non chordates (d) all chordates
 (e) None of these.
- (5) Opposable thumbs are characteristic feature of:
 (a) Lagomorpha (b) Primates
 (c) Edentata (d) None of these
- (6) Differences in the scales of fishes and reptiles lies in their being:
 (a) Endodermal and dry (b) Epidermal and dry
 (c) Epidermal and wet (d) Endodermal and wet
 (e) None of these.
- (7) Which of the following has oxygenated blood: *
 (a) Renal veins (b) Pulmonary veins
 (c) Pulmonary artery (d) Hepatic portal veins
 (e) None of these.
- (8) Scapula is the bone of:
 (a) Skull (b) Pelvic girdle
 (c) Pectoral girdle (d) Vertebral column
 (e) None of these.
- (9) All the digestive are formed in vertebrates by:
 (a) Ectoderm only (b) Endoderm only
 (c) Mesoderm only (d) None of these
- (10) Ammonia is chief excretory product in:
 (a) Reptiles (b) Turtles
 (c) Mammals (d) Fish
 (e) None of these.
- (B). Check which of the following statements are true (T) or false (F). on your answer sheets just write the question number and T or F.
- (11) Coelome is lined by ectodermal epithelium.
 (12) Non-chordates are dissected from dorsal side.
 (13) All snakes are poisonous.
 (14) Mouth in sharks is located on anterior tips.
 (15) Frogs have 3 cervical vertebrae.
 (16) Contractile vacuole in protozoa is basically an excretory organ.
 (17) Nerve cord in chordates is Endodermal in origin.
 (18) Whale is the largest mammals living in sea.
 (19) Both male and female mosquitoes bite and carry parasite.
 (20) The gammules are produced in coelentrates.

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ZOOLOGY, PAPER-II

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MAXIMUM MARKS: 100

NOTE: Attempt **FIVE** questions in all, including question No.8 which is **COMPULSORY**. All questions carry **EQUAL** marks.

1. Give an account of the following:

(a) Meiosis and its significance.	(Marks 12)
(b) The role of Nucleic Acid in Protein Synthesis.	(Marks 08)

2. Write short notes on: (Marks 5+5+5+5)

(a) Nucleolus.	(b) Lysosome.
(c) Chromosomal aberrations.	(d) Gene concept.

3. Give in detail the account of functions of various hormones produced by different lobes of Pituitary gland. (Marks 20)

4. Discuss in detail the relationship between ontogeny and Phylogeny. (Marks 20)

5. Give an account of sources, effects and control of Air Pollution. (Marks 20)

6. Give an account of: (Marks 12+8)

(a) Sex – linked inheritance.
(b) Linkage and crossing over.

7. Write short notes on: (Marks 5+5+5+5)

(a) Nitrogen cycle.
(b) Lateral line system.
(c) Respiratory pigments found in Animals.
(d) Erythrocytes.

COMPULSORY QUESTION

8. Write only the correct answer in the Answer Book. Don't reproduce the questions.

(1) Life originated during:	
(a) Pre-cambrian period.	(b) Mesozoic era.
(c) Coenozoic era.	(d) Proterozoic era.
(e) None of these.	
(2) Pancreas secrete:	
(a) Pepsin	(b) Only hormones.
(c) Only enzymes.	(d) Both (b) and (c).
(e) None of these.	
(3) Louis – Pasteur is known for:	
(a) Germ theory of disease	(b) Germ plasm theory
(c) Mutation theory	(d) Cell theory
(e) None of these.	

25
ZOOLOGY, PAPER-II

- (4) Life originated:
(a) In Air (b) On land
(c) In water (d) In all (a), (b) and (c).
(e) In none of these.
- (5) Viruses are:
(a) Unicellular (b) Acellular.
(c) Multicellular (d) Free living.
(e) None of these.
- (6) Wings of Insects and bats are examples of:
(a) Homologous organs. (b) analogous organs
(c) both (a) and (b). (d) vestigial organs.
(e) None of these.
- (7) Archeopteryx is a connecting link between:
(a) Amphibians and reptiles (b) Reptiles and birds
(c) Birds and Mammals (d) Amphibians and birds
(e) None of these.
- (8) Lamarck's theory of Evolution is based upon:
(a) Effect of environment (b) Use and disuse of body parts.
(c) Inheritance of Acquired characters (d) All of these
(e) None of these.
- (9) Absorption of digested food occurs mainly in:
(a) Colon (b) Small Intestine
(c) Large Intestine (d) Stomach.
(e) None of these.
- (10) A renal portal system is found in:
(a) Man (b) Horse
(c) Rabbit. (d) Frog.
(e) None of these.
- (11) Tangoreceptors respond to:
(a) Heat (b) Smell
(c) Chemicals (d) Touch.
(e) None of these.
- (12) Third ventricle is found in:
(a) Brain of Rabbit. (b) Heart of Rabbit.
(c) Kidney of Frog (d) Heart of Frog.
(e) None of these.
- (13) Blood from glomerulus returns by:
(a) Afferent renal arteriole. (b) Efferent renal arteriole.
(c) Both of these. (d) Renal vein
(e) None of these.
- (14) Vital morphological and Physiological units of Mammalian kidney are:
(a) Ureters (b) Seminiferous tubules
(c) Uriniferous tubules (d) All of these.
(e) None of these.

- (15) Which of the following secrete Oxytocin:
(a) Adrenals (b) Pituitary
(c) Thyroid (d) Ovaries
(e) None of these.
- (16) Longest cells in animals are:
(a) Nerve cells (b) Egg cells
(c) Kidney cells (d) Liver cells
(e) None of these.
- (17) Function of centromere is to:
(a) Initiate cell division (b) Inhibit cell division
(c) Provide site for cell division (d) Do all of these
(e) Do none of these.
- (18) Which of the following has extranuclear DNA:
(a) Mitochondria. (b) Lysosomes
(c) Golgi complex (d) All of these.
(e) None of these.
- (19) Who gave laws of segregation and Dominance:
(a) Mendel (b) Morgan
(c) Darwin (d) Muller
(e) None of these.
- (20) Adrenal glands are found in close association with:
(a) Testes (b) Spleen
(c) Liver (d) Ovaries
(e) None of these.
