

**FEDERAL PUBLIC SERVICE COMMISSION
COMPETITIVE EXAMINATION FOR RECRUITMENT TO POSTS
IN BPS-17, UNDER THE FEDERAL GOVERNMENT, 2006**

ZOOLOGY, PAPER-I

TIME ALLOWED: THREE HOURS MAXIMUM MARKS: 100

NOTE: (i) Attempt ONLY FIVE questions in all, including QUESTION NO.7, which is COMPULSORY. All questions carry EQUAL marks. Select any TWO questions each from SECTION-I and SECTION-II.
(ii) Extra attempt of any question or any part of the attempted question will not be considered.
(iii) Candidate must draw two straight lines () at the end to separate each question attempted in Answer Books.

SECTION – I

- Q.1(a) Discuss PROTOZOA as UNICELLULAR and ACELLULAR organisms. (7)
(b) Define POLYMORPHISM and discuss it with reference to COELENTERATES. (6)
(c) "ANNELIDS have said to have true METAMERIC SEGMENTATION." (7)
Q.2.(a) "PORIFERA exhibits a Tissue level of organization". Discuss. (6)
(b) "ECHINODERMS have a close evolutionary relationship with CHORDATES". (6)
Comment the statement.
(c) Discuss insects as the most successful group. (8)
Q.3. Write short notes on the following; - (5 each)
(a) CORAL REEF (b) COELOME
(c) TUBE FEET IN ECHINODERMS (d) FOOT IN MOLLUSCA.

SECTION – II

- Q.4.(a) "HEMICHORDATES have a mixture of CHORDATE and NON-CHORDATE characters." Explain. (10)
(b) "ALL the CHORDATES character are present in Ascidea in larval stage". Discuss. (10)
Q.5.(a) Write an essay on biting mechanism of snakes. (8)
(b) Discuss the different adaptation to flight with reference to birds. (12).
Q.6.(a) Describe placentation in mammals. (9)
(b) Write a short essay on different types of scales found in fishes. (11).

COMPULSORY QUESTION

Q.7. Write only the correct answer in the Answer Book. Do not reproduce the question.

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| (1) Contractile vacuole in protozoa is basically responsible for | (d) None of these |
| (a) Excretion | (5) Open circulatory system is present in |
| (b) osmoregulation | (a) Annelids |
| (c) Feeding | (b) Insects |
| (d) All of these. | (c) Reptiles |
| | (d) Mammals |
| (2) Pneumatocysts are typically present in | (6) Sponges are present in |
| (a) Porifera | (a) Marine |
| (b) Annelida | (b) Freshwater |
| (c) Coelenterata | (c) Moist places |
| (d) Protozoa | (d) Both (a) and (b) |
| (3) Pinococysts are present in | (7) Telson is present in |
| (a) Echinodermata | (a) Annelids |
| (b) Arthropoda | (b) Arthropoda |
| (c) Porifera | (c) Molluse |
| (d) None of these. | (d) Chordates |
| (4) Nerve cord is dorsally located in | (8) Entamoeba histolítica is a member of class |
| (a) Annelids | (a) Scyphozoa |
| (b) Mollusca | (b) Polycheata |
| (c) Arthropodes | |



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- (c) Mastigophora
(d) None of these
- (9) A house fly has legs
(a) 8
(b) 10
(c) 6
(d) 4
- (10) Wasps bite using
(a) Mouth
(b) Proboscis
(c) Genital claspers
(d) None of these
- (11) Number of cranial nerves in fish
(a) 10
(b) 12
(c) 8
(d) None of these
- (12) Frog has ribs
(a) 6
(b) 12
(c) 4
(d) None of these
- (13) Scales in reptiles are
(a) Ectodermal
(b) mesodermal
(c) Both a & b
(d) Endodermal
- (14) Gill slits in Amphioxus are present
(a) Mouth
(b) Neck
(c) Pharynx
- (d) Head
- (15) Giraffe has neck vertebrae
(a) 15
(b) 10
(c) 7
(d) None of these
- (16) Duck billed platypus has on its body
(a) Feathers
(b) Hairs
(c) Scales
(d) None of these
- (17) Pulmonary vein in mammals carries blood
(a) Deoxygenated
(b) oxygenated
(c) Both a&b
(d) None of these
- (18) RBCs in amphibians are
(a) Nucleated
(b) Without nucleus
(c) Both a&b
(d) None of these
- (19) Python kills its prey by
(a) poison biting
(b) Constriction
(c) Both a&b
(d) None of these
- (20) The location of mouth is ventral in
(a) Bony fish
(b) permyzaon
(c) Shark
(d) None of these



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ZOOLOGY, PAPER-II

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NOTE: (i) Attempt ONLY FIVE questions in all, including QUESTION NO.8, which is COMPULSORY. All questions carry EQUAL marks.

(ii) Extra attempt of any question or any part of the attempted question will not be considered.

(iii) Candidate must draw two straight lines (=====) at the end to separate each question attempted in Answer Books.

Q.1.(a) Give a detailed account of structure of lysosome. Discuss its function in a cell. (12)

(b) Discuss the steps involved in the semi conservative replication of DNA. (8).

Q.2.(a) Describe the microscopic, ultramicroscopic and chemical structure of a Eukaryotic chromosome. (10).

(b) List the steps involved during the process of meiosis. (10).

Q.3.(a) Define respiration. Discuss the mechanism involved in the transport of carbon dioxide from tissue to lungs. (8).

(b) What is the basic excretory product? Discuss different excretory substances produced in different animals. (12).

Q.4.(a) Describe the mechanism involved in transmission of the nerve impulse along the nervous system. (10).

(b) "Pituitary Gland works as a link b/w the nervous system and the other hormonal complexes of the body". Discuss. (10).

Q.5.(a) Discuss the phenomena of genetic linkage. (5).

(b) Describe sex linkage, giving suitable example. (6).

(c) Discuss Mendel's law of segregation, as it is understood now. (9).

Q.6.(a) Discuss polyploidy. How is it exploited for human development? (7).

(b) Define gene map. Discuss the method involved in the preparation of a gene map in diploid. (13).

Q.7.(a) Give an account of Darwin's theory of natural selection, as it is understood now. (13).

(b) State and explain Haeckel's Biogenetic law. (7).

COMPULSORY QUESTION

Q.8. Write only the correct answer, in the answer book don't reproduce the question.

1) Cell membrane is chemically

a. nucleoprotein

b. lipoprotein

c. lipid

d. protein

2) ATP is produced in

a. golgi complex

b. lysosome

c. mitochondria

d. none of these

3) Transcription is the phenomenon involved with

a. mRNA formation

b. binding of amino acid

c. DNA replication

d. all of these

4) Glycolysis occurs in

a. endoplasmic reticulum

b. cytoplasm

c. mitochondria

d. golgi bodies

5) Centromere in a chromosome is heterochromatic as it

a. does not divide

b. helps chromosomal attachment with the spindle

c. does not go through a regular change in the cell cycle

d. all of these together

6) Neurotransmitters are involved in

a. nerve transmission

b. synaptic transmission

c. chemical transmission

d. b & c

e. a & c

- 7) Pepsin is the chemical involved in
 a. Protein breakdown
 b. carbohydrates breakdown
 c. protein synthesis
 d. lipid breakdown

- 8) Food is assimilated into the body from digestive tract in
 a. oesophagus
 b. stomach
 c. small intestine
 d. rectum

- 9) Excretory product is produced through the breakdown of
 a. protein
 b. carbohydrates
 c. lipid
 d. all of these

- 10) Basic process of respiration occurs in
 a. lungs
 b. mitochondria
 c. blood circulation
 d. none of these

- 11) Genetic dominance involves
 a. personality dominance
 b. better adaptive value
 c. a wider population distribution
 d. all a, b & c
 e. none of the above

- 12) Principle of segregation is applicable to
 a. Heterozygous individual only
 b. homozygous individual only
 c. Diploid individual
 d. none of these

- 13) XXY individual in man is phenotypically a
 a. Female
 b. male
 c. super female
 d. super male

- 14) sex linkage concerns with the gene
 a. Responsible for the development of sex
 b. Associate with some sex
 c. Located on X chromosome only
 d. located on sex chromosome

- 15) Cistron is the smallest part of the chromosome working as
 a. Mutational unit
 b. functional unit
 c. Recombinational unit
 d. None of these

- 16) First living organism on this planet was
 a. an algal cell
 b. a virus
 c. a protozoa
 d. none of these

- 17) Darwin's theory of natural selection believe in selection of
 a. the fittest
 b. fitters
 c. better adapted individual
 d. All of these

- 18) The raw material for evolution comes from
 a. Mutation
 b. Chromosomal aberration
 c. Recombination
 d. All of these

- 19) A group develops to adapt a number of diverse niches. The phenomena is called as
 a. Convergent evolution
 b. Divergent
 c. Punctuated evolution
 d. none of these

- 20) Linneous was the father of classification and was
 a. Not believer of evolution
 b. strong believer of evolution
 c. believer of limited evolution
 d. Believer of natural selection