

FEDERAL PUBLIC SERVICE COMMISSION

COMPETITIVE EXAMINATION FOR RECRUITMENT TO POSTS
IN PBS-17, UNDER THE FEDERAL GOVERNMENT, 2003

ZOOLOGY-I

TIME ALLOWED: THREE HOURS

MAXIMUM MARKS: 100

NOTE: Attempt **FIVE** questions in all, including **Question No. 7** which is **COMPULSORY**. Select **TWO** questions from each **SECTION**. All questions carry **EQUAL** marks. Write clearly.

SECTION - I

1. (a) Discuss the phenomenon of Autogamy with special reference to PARAMECIUM. (07)
(b) Give a brief over view of PARASITIC ADAPTATIONS in PLATYHELMINTHES. (07)
(c) "SPONGES have a DIPLOBLASTIC organization". Discuss the statement. (06)
2. (a) Define POLYMORPHISM, and explain with reference to COELENTRATA. (08)
(b) Describe RESPIRATORY SYSTEM in insects. (07)
(c) "The skeletal support though gives protection, yet make MOLLUSCS inefficient". Comment on the statement. (05)
3. (a) "The ANNELIDS are METAMERICALLY SEGMENTED organisms". Discuss the statement. (10)
(b) Discuss the WATER VASCULAR system in ECHINODERMS. (10)

SECTION - II

4. (a) Discuss RETROGRESSIVE METAMORPHOSIS with reference to Ascidian. (10)
(b) "AMPHIOXUS is an ideal CHORDATE". Comment. (10)
5. (a) Discuss the evolutionary changes in the structure of heart in different CHORDATE groups. (10)
(b) Write a brief essay on MIGRATION in birds. (10)
6. (a) Give an account of development of chick upto the development of three GERMINAL LAYERS. (12)
(b) Name the ten CRANIAL NERVES found in SCOLIODON. (08)

COMPULSORY QUESTION

7. (A) Write only the correct answer in the Answer Book. Do not reproduce the question.
- (1) Contractile vacuole in PROTOZOA is basically concerned with:
(a) Excretion (b) Osmoregulation
(c) Respiration (d) None of these
 - (2) GAMMULES are produced in:
(a) Annelida (b) Arthropoda
(c) Porifera (d) None of these
 - (3) Scales in REPTILES Originate from:
(a) Ectoderm (b) Mesoderm
(c) Endoderm (d) None of these

ZOOLOGY-I

- (4) The CHORDATES are dissected from:
 - (a) Dorsal side
 - (b) ventral side
 - (c) Lateral sides
 - (d) Both (a) and (b) above
 - (e) None of these
- (5) Open type of blood vascular system is present in:
 - (a) Echinoderms
 - (b) Chordates
 - (c) Molluscs
 - (d) None of these
- (6) Frog has the following number of NECK VERTEBRAE:
 - (a) Seven
 - (b) Nine
 - (c) Four
 - (d) Zero
- (7) Insects have not adapted to the environment:
 - (a) Aquatic
 - (b) Fresh water
 - (c) Marine
 - (d) All of these
- (8) The true jaw is not present in:
 - (a) ELASMOBRANCHS
 - (b) BONEY FISH
 - (c) AGNATHA
 - (d) None of these.
- (9) SEA HORSE is included in:
 - (a) PISCES
 - (b) Mammals
 - (c) Insects
 - (d) Mollusca
 - (e) None of these
- (10) A house fly has the following number of legs:
 - (a) Four
 - (b) Eight
 - (c) Six
 - (d) None of these

(B) Check the following statements as true(T) and false(F). Simply write the question number and T and F on the Answer Book.

- (11) Some sponges are found in freshwater also.
- (12) CHOANOCYSTS are found in COELENTERATES.
- (13) Coral reefs are present in the sandy coasts of Karachi.
- (14) All the internal body cavities are not COELOME .
- (15) Mouth parts in ARTHROPODES are modified appendages.
- (16) The appearance of different stages in the embryonic development of a mammal is called as METAMORPHOSIS.
- (17) The major part of the CHORDATE Body is MESODERMAL in origin.
- (18) The ECHINODERMS and CHORDATES are ENTEROCOELIC.
- (19) Giraffe and goat are similar in having seven neck vertebrae.
- (20) The mammals are characterized by having Mammary glands.

TIMI
NOTI

1.

2.

3.

4.

5.

6.

7.

8.

(

(

(

(

(

FEDERAL PUBLIC SERVICE COMMISSION

COMPETITIVE EXAMINATION FOR RECRUITMENT TO POSTS
IN PBS-17, UNDER THE FEDERAL GOVERNMENT, 2003ZOOLOGY-IITIME ALLOWED: THREE HOURSMAXIMUM MARKS: 100NOTE: Attempt **FIVE** questions in all, including **Question No. 8** which is **COMPULSORY**. All questions carry **EQUAL** marks. Write clearly.

1. (a) Draw neat diagrams representing important stages of meiosis in an organism having the diploid chromosomal number of 4. (12)
(b) Define Excretion and briefly discuss the main excretory products in animals. (8)
2. (a) Define and explain Genetic Linkage. What are the cytological bases of linkage? (8)
(b) How will you explain the production of long neck in Giraffe under Darwinian Theory. (12)
3. (a) Give a detailed account of PHOSPHORUS cycle. (10)
(b) What do you understand from energy subsidy. (5)
(c) Define hormones. How does these differ from enzyme. (5)
4. (a) Discuss the mechanism of transport of oxygen from lungs to the tissues. (10)
(b) Write a brief note on PARACENTRIC INVERSION. (10)
5. (a) Give a brief account of ORTHOGENESIS. (8)
(b) Discuss the basic structure and chemical composition of MITROCHONDRION. (12)
6. (a) Define pollution. Discuss air pollution with reference to Pakistan. (8)
(b) Define and explain EPISTASIS. How does it differ from Genetic dominance? (12)
7. Write short notes on the following:
(a) GOLGI COMPLEX (b) GLOBAL WARMING
(c) Possible first living organism (d) Linkage

COMPULSORY QUESTION

8. Write only the correct answer in the Answer Book. Do not reproduce the question.
 - (1) The main division of the chromosomes occurs in:
(a) Prophase (b) Metaphase
(c) Anaphase (d) Telophase (e) None of these
 - (2) The protein synthesis occurs in:
(a) Mitochondrion (b) Endoplasmic reticulum
(c) Ribosomes (d) Acrosome (e) None of these
 - (3) Blood antigens are present in:
(a) Blood serum (b) RBC's
(c) WBC's (d) Platelets (e) None of these
 - (4) Sex linked genes are the genes located on:
(a) x-chromosome only (b) y-chromosome only
(c) Both x and y chromosomes (d) x or y chromosomes
(e) None of these

ZOOLOGY-II

- (5) Transcription is the phenomenon associated with:
(a) Synthesis of new DNA (b) Formation of mRNA from DNA
(c) Formation of tRNA (d) None of these
- (6) Segregation of alleles of a gene occurs in:
(a) Diploid individual (b) Homozygous individual
(c) Heterozygous individual (d) All of the above
(e) None of these
- (7) Sodium-Potassium pump is located in:
(a) Liver (b) Heart cell
(c) Nerve cell (d) All of these
(e) None of these.
- (8) Pepsin is an enzyme responsible for breaking:
(a) Proteins (b) Lipids
(c) Fats (d) None of these
- (9) Pace maker is located in:
(a) Liver (b) Brain
(c) Heart (d) Muscle (e) None of these
- (10) Follicle stimulating hormone are produced in:
(a) Pituitary (b) Ovaries
(c) Thyroid (d) Kidney (e) None of these
- (11) Genetic dominance is strongly associated with:
(a) Personality dominance (b) Adaptive value
(c) Population distribution (d) None of these
- (12) Crossing over is the physical exchange between chromosomes:
(a) Homologous (b) Non-Homologous
(c) Both (a) and (b) above (d) None of these
- (13) XXY individual in man is phenotypically a:
(a) Male (b) Female
(c) Inter sex (d) None of these
- (14) Amino acids are the organic compound behaving like:
(a) Acid (b) Base
(c) Both (a) and (b) above (d) None of these
- (15) Which of these can be the first living organism on the earth:
(a) Protozoan (b) Algae
(c) virus (d) None of these
- (16) Ontogeny represents the history of an organism:
(a) Evolutionary (b) Embryonic
(c) Both (a) and (b) above (d) None of these
- (17) Nuclear membrane has a structure similar to:
(a) Cell membrane (b) Mitochondrion
(c) Endoplasmic reticulum (d) All of these
- (18) Osmosis is the movement of solutes through a membrane:
(a) Permeable (b) Semi-permeable
(c) Both (a) and (b) above (d) None of these
- (19) Sickle Cell Anemia is the condition where the RBC's deflate:
(a) Under Oxygen (b) Absence of Oxygen
(c) Both (a) and (b) above (d) None of these
- (20) Pond is an example of ecosystem:
(a) Complete (b) Incomplete
(c) Almost complete (d) None of these
