FEDERAL PUBLIC SERVICE COMMISSION

COMPETITIVE EXAMINATION FOR RECRUITMENT TO POSTS IN BS-17 UNDER THE FEDERAL GOVERNMENT, 2013

Roll Number

ZOOLOGY, PAPER-I

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

NOTE: **(i)** **First** attempt **PART-I (MCQs)** on separate **OMR Answer Sheet** which shall be taken back after **30** minutes.

(ii) **Overwriting/cutting of the options/answers will not be given credit.**

PART-I ((MCQs) (COMPULSORY)

Q.1. (i) Select the best option/answer and fill in the appropriate Circle ◯ on the **OMR Answer Sheet. (20x1=20)**
(ii) Answers given anywhere, other than OMR Answer Sheet, shall not be considered.

1. Metamerically segmented worms belong to phylum:
(a) Nematoda **(b)** Platyhelminthes **(c)** Annelida **(d)** None of these

2. Which of the following is a multiflagellate Protozoa?
(a) Ceratium **(b)** Noctiluca **(c)** Leishmania **(d)** None of these

3. Spicules are secreted by:
(a) Scleroblasts **(b)** Nematoblasts **(c)** Endoblasts **(d)** None of these

4. Which of the following is a porous opening through which water enters the hydrocoel of an echinoderm?
(a) Pedicellaria **(b)** Tube feet **(c)** Madreporite **(d)** None of these

5. The body cavity of most triploblastic animals formed by splitting the mesoderm into an outer and an inner layer is called:
(a) Coelentron **(b)** Coelom **(c)** Colon **(d)** None of these

6. Compound eyes are found in:
(a) Platyhelminthes **(b)** Ecinodermate **(c)** Mollusca **(d)** None of these

7. Egg-laying mammals are placed in sub class:
(a) Meththeria **(b)** Prototheria **(c)** Theria **(d)** None of these

8. Open circulatory system is found in:
(a) Birds **(b)** Earthworms **(c)** Cockroaches **(d)** None of these

9. Bivalve molluscs are usually:
(a) Scavangers **(b)** Deposit feeder **(c)** Filter feeder **(d)** None of these

10. The pillar or central axis around which the whorls of a gastropod shell are coiled is called:
(a) Columella **(b)** Collembola **(c)** Colloblasts **(d)** None of these

11. The ninth vertebra of frog is known as:
(a) Cervical **(b)** Sacral **(c)** Urostyle **(d)** None of these

12. The stage in an embryo in which the primary germ layers have been laid down is called:
(a) Gastrula **(b)** Blastula **(c)** Morula **(d)** None of these

13. A fish which migrates down river to spawn in the sea is called:
(a) Anadromous **(b)** Catadromous **(c)** Dromiacea **(d)** None of these

14. Which of the following has four-chambered heart?
(a) Dog fish **(b)** Frog **(c)** Pigeon **(d)** All of these

15. Facets by which vertebrae articulate with one another are called:
(a) Metapophyses **(b)** Parapophyses **(c)** Zygopophyses **(d)** None of these

16. The inner membrane of the two foetal membranes in reptiles, birds and mammals is called:
(a) Amnion **(b)** Chorion **(c)** Peritoneum **(d)** None of these

17. Amphioxus is an example of:
(a) Urochordata **(b)** Cyclostomata **(c)** Hemichordata **(d)** None of these

18. Filarial worm (genus Wuchereria) belong to phylum:
(a) Nematoda **(b)** Platyhelminthes **(c)** Annelida **(d)** None of these

19. Notochord is formed from primary:
(a) Ectoderm **(b)** Mesoderm **(c)** Endoderm **(d)** All of these

20. Shell fish includes:
(a) Shrimp, Crabs and eel fish **(b)** Dog fish, crabs and lobsters
(c) Lobsters, crabs and shrimps **(d)** All of these

PART-II

NOTE: **(i)** **Part-II** is to be attempted on the separate **Answer Book.**
(ii) Candidate must write **Q. No.** in the **Answer Book** in accordance with **Q. No.** in the **Q. Paper.**
(iii) Attempt **ONLY FOUR** questions from **PART-II**, selecting **TWO** questions from **EACH SECTION. ALL questions carry EQUAL marks.**
(iv) Extra attempt of any question or any part of the attempted question will not be considered.

SECTION-A

Q.2. **(a)** Give an account of life cycle of Fasciola hepatica. **(10)**
(b) Describe the various types of larval forms found in crustacea. **(10)**

Q.3. **(a)** What is the difference between corallite and coral reef? Give a detailed account of the various forms of coral reefs. **(10)**
(b) Write an essay on parasitic adaptation in platyhelminthes. **(10)**

Q.4. **(a)** Describe the morphology and microscopic structure of the shell of a gastropod mollusc such as Pila. **(10)**
(b) Describe the water vascular system of star fish. **(10)**

Q.5. Write short notes on the following:- **(5 each)** **(20)**

(a) Binary fission in Paramecium **(b)** Flame cells
(c) Leishmaniasis **(d)** Spicules

SECTION-B

Q.6. **(a)** Describe various types of heart found in the vertebrate. **(10)**
(b) Give an account of flight adaptation of birds. **(10)**

Q.7. **(a)** Describe the pelvic girdle of frog with the help of labelled diagram. **(10)**
(b) Give a detailed structure of the eye of frog. **(10)**

Q.8. Write short notes on the following:- **(5 each)** **(20)**

(a) Biting mechanism of snakes **(b)** Placenta
(c) Fish scales **(d)** Neuron

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ZOOLOGY, PAPER-II

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PART-I ((MCQs) (COMPULSORY)

Q.1. (i) Select the best option/answer and fill in the appropriate Circle ◯ on the **OMR Answer Sheet. (20x1=20)**
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1. Which of these is a direct source of energy for muscle contraction?
(a) ATP **(b)** Creatine phosphate **(c)** Lactic acid **(d)** Glucose **(e)** None of these

2. Muscle fatigue is caused by:
(a) CO_2 **(b)** Lactic acid **(c)** Fumaric acid **(d)** Ethyl alcohol **(e)** None of these

3. The functional unit in a skeletal muscle is called:
(a) Actin filament **(b)** Sarcomere **(c)** Z line **(d)** Myosin filament **(e)** None of these

4. We would describe the layered, flat, scaly epithelium of human skin as:
(a) Simple Squamous **(b)** Stratified Squamous **(c)** Stratified Columnar
(d) Pseudo Stratified Cubiodal **(e)** None of these

5. Which of the following is not considered to be a tissue?
(a) Cartilage **(b)** Mucous membrane lining the stomach **(c)** Blood **(d)** Brain **(e)** All of these

6. As a Zoologist you would look for looping movement in:
(a) Earthworms **(b)** Poly chaetes **(c)** Echinoderms **(d)** Leeches **(e)** None of these

7. The elements of nervous system which help in co-ordination are:
(a) Receptors **(b)** Neurons **(c)** Effectors **(d)** All of these **(e)** None of these

8. The distal ends of which of these neurons lie adjacent to blood stream:
(a) Afferent neurons **(b)** Efferent neurons **(c)** Inter neurons
(d) Neuro secretory neuron **(e)** All of these

9. The electrical potential that exists across a cell membrane is:
(a) Resting membrane potential **(b)** Active membrane potential **(c)** Automatic potential
(d) All of these **(e)** None of these

10. A nerve is a:
(a) Collection of neurons **(b)** Concentration of dendrites and exons
(c) Bundles of exons or dendrites of neurons
(d) Bundles of exons or dendrites bounded by connective tissues **(e)** None of these

11. Which of these is a correct statement?
(a) All of the neurons are excitable **(b)** All of the neurons can transmit impulses across their membrane
(c) Transmission of nurve impulses is always unidirectional **(d)** All of these statements
(e) None of these

12. Sodium-Potassium pump operates with the help of which of these enzymes:
(a) $Na^+ - K^+$ ATPase **(b)** Phosphatase **(c)** Isomerase **(d)** Hydrolase **(e)** None of these

13. Name of the chemical messengers released to the exterior of one animal that affect the behaviour of another individual of the same species:
(a) Neuropeptides **(b)** Neurohormones **(c)** Pheromones **(d)** Neurotransmitters **(e)** None of these

14. Hormones that the Thyroid gland secrets are:
(a) Proteins **(b)** Amines **(c)** Steroids **(d)** Carbohydrates **(e)** All of these

15. Thyroxine is:
(a) An enzyme **(b)** A hormone **(c)** A vitamin **(d)** An excretory waste **(e)** None of these

16. Development of Secondary Sexual characters in a female is controlled by:
(a) STH **(b)** Androgens **(c)** TSH **(d)** Estrogens **(e)** None of these

17. Insulin is a hormone which is secreted by:
(a) Islet of langerhans and regulates glucose level in blood **(b)** Thyroid and regulates growth
(c) Adrenals and regulates heart beat **(d)** Pituitary and regulates reproduction **(e)** None of these

18. Hormone responsible for regulation of calcium and phosphorous is secreted by:
(a) Thyroid **(b)** Para-thyroid **(c)** Adrenals **(d)** Thymus **(e)** None of these

19. A hormone responsible for conversion of glucose into glycogen within the liver is called:
(a) Secretin **(b)** Gastrin **(c)** Pancreozymin **(d)** Insulin **(e)** None of these

20. Fibrinogen is found in the:
(a) Bile and produced in liver **(b)** Blood and produced by RBCS
(c) Blood and produced in liver **(d)** Bone and produced in bone marrow **(e)** None of these

PART-II

NOTE: **(i)** **Part-II** is to be attempted on the separate **Answer Book.**
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SECTION-A

Q.2. Describe the phenomenon of Mitotic Cell division in animals. **(20)**

Q.3. Define an allele. Explain Mendel's principle of Independent assortment with examples. **(20)**

Q.4. What do you know about sex-linked inheritance? Explain with examples. **(20)**

SECTION-B

Q.5. Do you believe in "Evolution". Give evidences in favour of the theory. **(20)**

Q.6. Define bio-geochemical cycles. Explain 'Nitrogen' cycle diagrammatically. **(20)**

Q.7. What is Darwinism? Differentiate it from Lamarkism. What do you know about the synthesis of Darwinian theory with population genetics? **(20)**

Q.8. Describe various interactions among animal populations **(20)**

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