ZOOLOGY, PAPER-II

FEDERAL PUBLIC SERVICE COMMISSION
COMPETITIVE EXAMINATION FOR
RECRUITMENT TO POSTS IN BPS-17 UNDER
THE FEDERAL GOVERNMENT, 2010

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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)   Cell membrane is formed of:
    (a)   Carbohydrate   (b)   Lipid   (c)   Protein
    (d)   Lipoprotein   (e)   None of these

(ii)   Electron transport chain reaction occur in:
    (a)   Cell membrane   (b)   Cell wall   (c)   Endoplasm
    (d)   Mitochondrion   (e)   None of these

(iii)   Ribosomes in cell are responsible for:
    (a)   Protein formation   (b)   Glycolysis   (c)   Lipid breakdown
    (d)   All of these   (e)   None of these

(iv)   Golgi complex is responsible for:
    (a) Carbohydrate metabolism   (b) Protein synthesis   (c) Lipid synthesis
    (d) None of these   (e) All of these

(v)   Basic excretory chemicals in all the cells is:
    (a) Urea   (b) Uric acid   (c) Ammonia
    (d) None of these   (e) All of these

(vi)   Oxygen transport from lungs to tissue occurs through:
    (a) Difference in pressure   (b) Solubility in plasma   (c) Attachment with RBC surface
    (d) None of these   (e) All of these

(vii)   FSH (Follicle Stimulating Hormone) is produced in:
    (a) Ovary   (b) Hypothalamus   (c) Pituatary
    (d) None of these   (e) All of these

(viii)   Lipase is an enzyme responsible for:
    (a) Carbohydrate metabolism   (b) Lipid breakdown   (c) Protein breakdown
    (d) None of these

(ix)   Law of segregation is applicable to:
    (a) Homozygous individual   (b) Heterozygous individual
    (c) Both Homozygous and heterozygous   (d) None of these

(x)   Sex linked genes concern:
    (a) Sex characters   (b) Somatic character
    (c) Mostly somatic character   (d) None of these

(xi)   XXY individual in man is a phenotypic male, because:
    (a) Two X chromosomes are present   (b) Y-chromosome is present
    (c) Both X and Y chromosomes are present   (d) None of these

(xii)   Trisomic condition can be produced through:
    (a) Primary Non-disjunction (b) Secondary non-disjunction (c) Both a and b (d) None of these

(xiii)   First living organism on this planet was:
    (a) A protozoan   (b) An algae   (c) Bacteria   (d) A virus   (e) None of these

(xiv)   Theory of Natural Selection was proposed by:
    (a) Charles Darwin   (b) A.R. Wallace   (c) Both a and b   (d) None of these

(xv)   Lamarck's theory of inheritance of acquired characters says:
    (a) Environment forces a character   (b) Environment selects a character
    (c) Environment has no effect   (d) None of these

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(xvi) Orthoselection means:
    (a) Selection occurring at different times   (b) Selection occurring at different rates
    (c) Selection occurring in one direction   (d) None of these
    (e) All of these

(xvii) Haeckle's biogenetic law says:
    (a) Ontogeny repeats phylogeny   (b) Phylogeny repeats ontogeny
    (c) None of these   (d) Both a and b together

(xviii) Ecosystem is a system involving biotic and abiotic components which:
    (a) Interact   (b) Interact for energy flow   (c) No interaction   (d) None of these

(xix) Nitrogen biogeochemical cycle is regarded as gasous cycle because:
    (a) Nitrogen is a gas   (b) Recycling is almost complete
    (c) Major part of cycle is in gasous state   (d) None of these

(xx) Raw material for evolution are variation, which are produced through:
    (a) Gene mutation   (b) Chromosomal aberration   (c) Both a and b   (d) None of these

PART – II

NOTE:	(i) **PART-II** is to be attempted on the separate **Answer Book.**
	(ii) Attempt **ONLY FIVE** questions from **PART-II,** selecting at least **THREE** questions from **SECTION-I and TWO** questions from **SECTION-II**. All questions carry **EQUAL** marks.
	(iii) Extra attempt of any question or any part of the attempted question will not be considered.

SECTION-I

Q.2. (a) Describe structure, chemical composition and function of Endoplasmic reticulum. **(10)**
    (b) Define membrane system. What are the main members of this system in a cell? **(6)**

Q.3. (a) Draw neat diagrams to show different stages of meiosis in a cell, where diploid number of chromosomes is 6. **(9)**
    (b) Describe the phenomenon of transcription. **(7)**

Q.4. (a) Discuss the mechanism of transport of carbon dioxide from tissue to lungs. **(8)**
    (b) How are the nerve impulses pass through the nervous network. **(8)**

Q.5. (a) Develop a list of the hormones secreted by pituatary gland and indicate their target organs and effects. **(10)**
    (b) Define excretion. What are the rationales for adapting to different excretory substances in different animal groups? **(6)**

Q.6. (a) Define Epistasis. Describe six basic types of epistatic reactions. **(10)**
    (b) Define sex-linkage. Explain the phenomenon with one example. **(6)**

SECTION-II

Q.7. (a) Write an essay on possible origin of life. **(12)**
    (b) "Fossils provide some important evidences of evolution". Discuss. **(4)**

Q.8. (a) "Hardy Weinberg Law provides the basis for modern synthesis on mechanism of evolution". Explain. **(8)**
    (b) "Darwin and Wallace worked under identical conditions but in different areas to develop the theory of natural selection". Justify the statement. **(8)**

Q.9. (a) Define an ecosystem. Discuss the system considering the example of a pond as an almost complete ecosystem. **(12)**
    (b) List four adaptations of animals to desert conditions. **(4)**

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