

FEDERAL PUBLIC SERVICE COMMISSION
COMPETITIVE EXAMINATION FOR RECRUITMENT TO POSTS
IN BPS-17, UNDER THE FEDERAL GOVERNMENT, 2005

GEOLOGY, PAPER-I

TIME ALLOWED: THREE HOURS

MAXIMUM MARKS: 100

NOTE: Attempt **FIVE** questions in all, including **QUESTION NO.8**, which is **COMPULSORY**.
 All questions carry **EQUAL** marks. Illustrate your answer with sketches where needed.

1. Define mineral, crystal and rock. Describe the Feldspar group of minerals.
2. How do you classify Folds? Discuss the types of Folds in the mountains of Baloshitan.
3. Discuss the process of weathering and erosion. What is the importance of these processes?
4. Describe the morphology of Brachiopods. What is their significance in the stratigraphy of Pakistan?
5. What is the difference between magnitude and intensity of an earthquake? What are earthquake resistant structures?
6. What is Stratigraphic Code of Pakistan? Describe the Paleozoic rocks of the Salt Range.
7. How do the sediments convert to sedimentary rocks? Describe a few clastic sedimentary rock.

COMPULSORY QUESTION

8. Write very short note on the following:-

- | | |
|--------------------------|-----------------------|
| (1) Sedimentary facies | (2) Lithosphere |
| (3) Ropy lava | (4) Flute cast |
| (5) Continental shelf | (6) Fossil fuel |
| (7) Gray wack | (8) Extension joints |
| (9) Submarine Fan | (10) Garnet |
| (11) Graded river | (12) Chevron folds |
| (13) Hornfels | (14) Axis of symmetry |
| (15) Marker bed | (16) Peridotite |
| (17) Interference colors | (18) Discocyclina |
| (19) Cyclosilicate | (20) Pyrite |

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ZOOLOGY, PAPER-II

TIME ALLOWED: THREE HOURS

MAXIMUM MARKS: 100

NOTE: Attempt **FIVE** questions in all, including **QUESTION NO.8**, which is **COMPULSORY**. All questions carry **EQUAL** marks. Give diagram wherever required.

1. (a) List the steps involved in the synthesis of protein starting from DNA. (9)
(b) Give an account of morphology, chemical composition and function of Golgi Complex. (11)
2. (a) Briefly discuss the mechanism involved in transport of Oxygen from lungs to tissue. (12)
(b) What are the different excretory products in animals? How and why these are produced in different animal groups? (8)
3. (a) Discuss the multiple allelic inheritance with reference to inheritance of ABO blood groups in man. (9)
(b) Define epistasis. How does it differ from dominance? Give three examples of epistasis interactions. (11)
4. (a) Give a brief account of the possible origin of life on this globe. (8)
(b) Compare Darwin's theory of natural selection with Lamarck's theory of Acquired characters. (12)
5. (a) Define an ecosystem. Discuss pond as an example of the complete ecosystem. (10)
(b) What is biogeochemical cycle? Describe phosphorus cycle. (10)
6. (a) Discuss the role of polyploidy in development of commercial varieties in plants. (10)
(b) Discuss the different enzymes involved in digestion in man. (10)
7. Write short notes on: (5 each)
(a) Sex linkage (b) lysosomes
(c) Pituitary Hormones (d) Air Pollution

COMPULSORY QUESTION

8. Write only the correct answer in the Answer Book. Do not reproduce the question.
 - (1) The chemical composition of a chromosome is:
(a) Lipoprotein (b) Oligopolysaccharid
(c) Nucleoprotein (d) None of these
 - (2) Lysosomes are responsible for:
(a) Protein synthesis (b) ATP formation
(c) Intracellular break down (d) None of these
 - (3) Ribosomes are located on:
(a) cell membranes (b) Rough Endoplasmic reticulum
(c) Mitochondria (d) Nuclear membrane
(e) None of these
 - (4) The metaphase chromosomes are thick because these:
(a) Multiply (b) Duplicate
(c) Coiled Coiling (d) None of these
 - (5) Glycolysis occurs in:
(a) Cytoplasm (b) Mitochondria
(c) Cell membrane (d) All of these

ZOOLOGY, PAPER-II

- (6) Nerves convey the message in the form of:
(a) Physical impulse (b) Chemical impulse
(c) Electrical impulse (d) None of these
- (7) Follicle stimulating hormone is produced in:
(a) Ovary (b) Pituitary
(c) Hypothalamus (d) All of these
- (8) The primary excretory product is:
(a) Ammonia (b) Carbon dioxide
(c) faeces (d) None of these
- (9) Pepsin is responsible for digestion of:
(a) carbohydrate (b) lipid
(c) Protein (d) All of these
- (10) XXY individual in men is phenotypically:
(a) Male (b) Female
(c) Intersex (d) None of these
- (11) Sex linked genes are located on (in man):
(a) Only on X chromosome (b) Only on Y chromosome
(c) Sex chromosome (d) All of these
- (12) Mendelian Segregation is applicable to:
(a) Gametogenesis (b) Meiosis
(c) Spore formation (d) None of these
- (13) The number of the alleles of a gene in diploid individual is:
(a) Any number (b) One
(c) Two (d) Three
- (14) The gene mapping is measured in:
(a) Millimeters (b) Microns
(c) Angstrom (d) Centi Morgan
- (15) Genetic dominance concerns with the phenotypic expression in:
(a) Heterozygous (b) Homozygous
(c) Both (a) and (b) (d) None of these
- (16) The first living organism was:
(a) Algal cell (b) Virus
(c) Bacteria (d) None of these
- (17) Enzymes are chemically:
(a) carbohydrates (b) lipids
(c) lipoprotein (d) Proteins
- (18) Theory of Natural Selection was initially proposed by:
(a) Darwin (b) Wallace
(c) Both Darwin and Wallace (d) Lyell
- (19) Second law of thermodynamics demand:
(a) Energy stability (b) Energy loss during transfer of energy
(c) Energy flow from one form to another (d) None of these
- (20) The basic purpose of ecosystem is:
(a) Maintenance of organisms (b) Energy flow
(c) Chemical movements (d) None of these
