

FEDERAL PUBLIC SERVICE COMMISSION



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

Roll Number

GEOLOGY, PAPER-II

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| TIME ALLOWED: | (PART-I MCQs) 30 MINUTES | MAXIMUM MARKS: 20 |
| THREE HOURS | (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.

- Mark the correct statement about Platinum Group Minerals (PGM).
(a) PGM occurs as immiscible segregation in early magmatic stage and is locked up in silicates
(b) They are primarily localized in ultramafic rocks
(c) Hydro thermal activity plays a significant role in the concentration of Platinum group elements
(d) All are correct (e) None of these
- Chrysolite Asbestos result from the:
(a) Magmatic liquid (b) Alteration of Serpentine (c) Alteration of Olivine to Serpentine
(d) Hydrothermal solutions (e) None of these
- Mn-ore of chemical grade should have:
(a) 0-95% of Mn (b) 82-87% of Mn (c) 74-78% of Mn
(d) 60-63% of Mn (e) None of these
- The major elements in Mn-nodules are:
(a) Fe and Mn (b) Fe, Mn and Ni (c) Fe, Mn, Ni and Cu
(d) Fe, Mn, Ni, Cu and Co (e) None of these
- Iron Sulphide minerals are often indicators of the?
(a) Geochemical conditions under which they are formed (b) Depositional Environments
(c) Transportation agencies (d) Both (a) and (b) (e) None of these
- Which is the correct statement about Pyrite:
(a) It has a wide range of thermal stability upto 743°C
(b) It is formed in marine depositional environment
(c) It deposits under neutral to alkaline conditions
(d) All the above statements are correct (e) None of these
- Molybdenum Steels are used in:
(a) Aircraft (b) Automobiles (c) Oil machinery
(d) All of these (e) None of these
- Which is the most stable mineral towards weathering:
(a) Quartz (b) Feldspar (c) Hornblende
(d) Olivine (e) None of these
- Which rare earth element replaces Zirconium in Zircon:
(a) Thorium (b) Cerium (c) Hafnium (d) None of these
- Epidote crystallises in:
(a) Orthorhombic system (b) Monoclinic system (c) Triclinic system
(d) Cubic system (e) None of these
- The degree of transparency of a mineral is known as:
(a) Schillerization (b) Diaphaneity (c) Phosphorescence (d) None of these
- Polymorphous elements like carbon are called:
(a) Semi-polytropic (b) Polytropic (c) Allotropic (d) None of these
- Which type of drainage pattern develops in folded or tilted blocks:
(a) Dendretic pattern (b) Trellis pattern (c) Rectangular pattern (d) None of these

GEOLOGY, PAPER-II

14. A plain of eroded bed rock developed between mountain and basin areas is known as:
(a) Pediment (b) Playa (c) Piedment (d) Peneplains (e) None of these
15. Amorphous substances are:
(a) Isotropic (b) Anisotropic (c) Uniaxial (d) Biaxial (e) None of these
16. Wind does erosion in:
(a) Attrition (b) Abrasion (c) Deflation (d) All these processes (e) None of these
17. A fossil which assumes to be the intermediate form between man and ape is:
(a) Australopithecus (b) Ramapithecus (c) Sivapithecus
(d) Sinanthropus (e) None of these
18. Stromatolites are only preserved in:
(a) Shales (b) Sandstones (c) Carbonates (d) Coal (e) None of these
19. Trace fossils are also known as:
(a) Organic fossils (b) Ichno fossils (c) Ripple fossils (d) None of these
20. What are the applications of condones:
(a) In Biostratigraphy (b) In Paleoecology (c) In Hydrocarbon Exploration
(d) All of these (e) None 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**. **ALL** questions carry **EQUAL** marks.
(iv) Extra attempt of any question or any part of the attempted question will not be considered.

- Q. No.2.** Discuss the processes of mineralization of Pegmatites. (20)
- Q. No.3.** Discuss in detail the geology of non-metallic minerals in Northern Areas of Pakistan. (20)
- Q. No.4.** Discuss various types and patterns of slope failures in Pakistan and their stability techniques (20)
- Q. No.5.** Describe the economic significance of the Pab Formation in Lower Indus Basin. (20)
- Q. No.6.** (a) Discuss in detail the causative mechanisms of earthquakes in Pakistan (15)
(b) How was the Rector's scale devised? (5)
- Q. No.7.** Discuss the occurrence and industrial utilization of bentonite deposits of Pakistan. (20)
- Q. No.8.** Write short notes on **FOUR** of the following: (5 each) (20)
(a) Types of Aquifers
(b) Hydrological cycle
(c) Sequence stratigraphic approach in exploration of hydrocarbons
(d) Foundation analysis
(e) Exploration in Badin Block in Lower Indus Basin with reference to Stratigraphic Traps Exploration Strategy
