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

Roll Number

GEOLOGY, PAPER-II

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) The "safe yield" of groundwater basin is:
(a) The total quantity of water that can be withdrawn from it annually
(b) The total quantity of water obtained from a basin less the water lost on account of evapotranspiration
(c) The amount of water that can be withdrawn from it annually without producing an undesired result
(d) None of these

(ii) The lower 10 km of the atmosphere where most weather occurs is called:
(a) Troposphere (b) Hydrosphere (c) Barosphere (d) Biosphere

(iii) When moist air moves and encounters a mountain range, it flows up and down the other side, rain occurs in the zone of cooling air, called:
(a) Convectine precipitation (b) Cyclonic precipitation
(c) Orographic precipitation (d) None of these

(iv) Clay is:
(a) More porous and more permeable (b) Less porous and less permeable
(c) More porous and less permeable (d) Less porous and more permeable

(v) In Alkali-Silica Reaction strained quartz is:
(a) Non-reactive (b) Most reactive (c) Prevent ASR (d) Imparts high strength

(vi) In concrete ASR is exhibited by:
(a) Parallel Fractures (b) Oblique fractures
(c) Transverse fractures (d) None of these

(vii) Greywacke and other phillosilicates are generally prone to:
(a) Alkali Silica Reaction (b) Alkali Carbonate Reaction
(c) Alkali Silicate Reaction (d) All of these

(viii) An aquifer, not in contact with atmosphere, overlain by aquitards, have inflow or out flow of groundwater through overlying (or underlying) aquitards, is known as:
(a) Semi-unconfined aquifer (b) Confined aquifer
(c) Unconfined aquifer (d) Semi-confined aquifer

(ix) A formation which can transmits water at a very low rate (sandy clay, fractures shales, silts) forms:
(a) Aquitard (b) Aquifuge (c) Aquiclude (d) Aquifer

(x) Maps having contour lines connecting points of equal depths of precipitation for the aerial distribution of rainfall are called:
(a) Contour Maps (b) Isopack Maps (c) Isohyetal Maps (d) Hydrological Maps

(xi) Having uniform grain size, choose the correct statement:
(a) Cubic packing has higher porosity than rhombohedral packing
(b) Rhombohedral packing has higher porosity than cubic packing
(c) Both type of packing have same porosities
(d) Packing of grains has no effect on porosity

(xii) The process of formation of deposits from channels at or near the surface is described as:
(a) Syngenetic (b) Epigenetic (c) Paragenetic (d) Pneumatogenetic

(xiii) Pegmatites are described as:
- (a) Massive mineral deposits of sedimentary origin
- (b) Huge outcrops of fine-grained volcano-plutonic rocks
- (c) Very coarse-grained igneous or metamorphic rocks
- (d) Bonanza of gold and silver

(xiv) Which of the following is an endogenetic deposit?
- (a) Oxidation and supergene sulphide enrichment
- (b) Residual concentration deposits
- (c) Sedimentation deposits
- (d) Fumarolic deposits

(xv) The deposits formed at the end of magmatic differentiation are termed as:
- (a) Orthotectic deposits (b) Metasomatic deposits
- (c) Hydrothermal deposits (d) Orthomagmatic deposits

(xvi) In a compaction test, maximum dry density is achieved at a particular moisture content called:
- (a) Maximum moisture content (b) Optimum moisture content
- (c) Ultimate moisture content (d) Minimum moisture content

(xvii) Coal deposits are formed on:
- (a) Continental slopes (b) Deep Marine (c) Shallow Marine (d) None of these

(xviii) Uranium in Pakistan is found in:
- (a) Volcanic Rocks (b) Plutonic Rocks (c) Sedimentary Rocks (d) All of these

(xix) In stratigraphic trap the chief trap making element is:
- (a) Lithology (b) Porosity (c) Permeability (d) All of these

(xx) The Lines of Latitude and Longitude drawn on a globe as:
- (a) Latitude lines are parallel and Longitude lines meet at the poles
- (b) Latitude lines are parallel and Longitude lines meet at the equator
- (c) Longitude lines are parallel and Latitude lines meet at the poles
- (d) Longitude lines are parallel and Latitude lines meet at the equator

PART – II

NOTE:	**(i)** **PART-II** is to be attempted on the separate **Answer Book.** **(ii)** Attempt **ONLY FOUR** questions from **PART-II**. All questions carry **EQUAL** marks. **(iii)** Extra attempt of any question or any part of the attempted question will not be considered.

Q.2. Describe various modes of slope failures in rocks. **(20)**

Q.3. What is meant by alkali-aggregate reaction? Elaborate the concept of Alkali-Silica reaction. **(20)**

Q.4. How the geochemical survey is used for the exploration of mineral deposits? **(20)**

Q.5. Describe the occurrence and industrial utilization of bentonite deposits of Azad Kashmir. **(20)**

Q.6. Discuss salient featured of Tarbela Dam. **(20)**

Q.7. What is the role of an Engineering Geologist in the site investigation of a mega project? **(20)**

Q.8. Describe the theories regarding the Origin of Petroleum and Primary Migration of Hydrocarbons. **(20)**

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