FEDERAL PUBLIC SERVICE COMMISSION
COMPETITIVE EXAMINATION-2016
FOR RECRUITMENT TO POSTS IN BS-17
UNDER THE FEDERAL GOVERNMENT

Roll Number

GEOLOGY

TIME ALLOWED: THREE HOURS	**PART-I (MCQS) MAXIMUM MARKS = 20**
PART-I(MCQS): MAXIMUM 30 MINUTES	**PART-II MAXIMUM MARKS = 80**

NOTE: (i) **Part-II** is to be attempted on the separate **Answer Book.**
(ii) Attempt **ONLY FOUR** questions from **PART-II** by selecting **TWO** questions from **EACH SECTION. ALL** questions carry **EQUAL** marks.
(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.
(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.
(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.
(vi) Extra attempt of any question or any part of the attempted question will not be considered.

PART-II
SECTION-I

Q. No. 2. Weathering is a natural process to break down the rocks and the minerals. This process involves a set of physical, chemical, and biological processes. Explain different types of physical and chemical weathering, and describe the role of water in chemical weathering process. **(20)**

Q. No. 3. Global society is heavily dependent on minerals and metals. Earth is the source of all these resources. All minerals are grouped into silicate and non-silicate minerals, and further are divided into seven major classes according to their economic use. For example, class Sulfides has mineral Galena whose chemical formula is PbF, and is a source of LEAD. Make a Table of four columns; 1st column should carry the title 'Minerals Class', 2nd column 'the Names of Minerals of the classes', 3rd column is Chemical formulae of minerals of 2nd column, 4th column the economic use of minerals of column-2.
Mention 10 minerals in that Table, giving their class (1st column), mineral name (2nd column), chemical composition (3rd column), and economic use (4th column). **(20)**

Q. No. 4. Mountain Belts are made of several mountain ranges, usually with related histories. There are some familiar mountain ranges of the world, mention simply their names and localities. However, discuss in detail the tectonic frame work of Himalayas. **(20)**

Q. No. 5. Earth scientists are aware of the fact that metamorphism and plate tectonics are intimately linked and are responsible for the development of different metamorphic facies. Explain with diagram(s) the type of plate tectonic boundary and formation of the related facies. **(20)**

SECTION-II

Q. No. 6. Pakistan has plenty mineral resources. Massive sulfide bodies are also found in different places. Electromagnetic geophysical methods is considered most suitable for the exploration of such high electrical conductivity bodies buried under surface.
Discuss in detail the electromagnetic method, the controlling factors for increasing depth penetration and its other applications. **(20)**

Q. No. 7. Earthquakes are produced by fracturing the rocks in the subsurface. How it happens? How tsunamis are produced? What characteristics make the earthquakes dangerous, **(20)**