

Roll No



**PRESIDENCY UNIVERSITY  
BENGALURU**

**SET A**

**SCHOOL OF ENGINEERING  
END TERM EXAMINATION - JAN 2024**

**Semester :** Semester III - 2022

**Course Code :** CIV2008

**Course Name :** Engineering Geology

**Program :** B.Tech.

**Date :** 01 -JAN-2024

**Time :** 9:30AM - 12:30 PM

**Max Marks :** 100

**Weightage :** 50%

**Instructions:**

- (i) Read all questions carefully and answer accordingly.
- (ii) Question paper consists of 3 parts.
- (iii) Scientific and non-programmable calculator are permitted.
- (iv) Do not write any information on the question paper other than Roll Number.

**PART A**

**ANSWER ALL THE QUESTIONS**

**4 X 5M = 20M**

1. The triangulation method is one of the best method to determine the epicentre location of earthquake. How the Seismologist use triangulation method to locate the earthquake epicentre?  
(CO1) [Knowledge]
2. Igneous rocks are classified into four classes based on silica percentage. List the classes of igneous rock with silica percentage and examples.  
(CO2) [Knowledge]
3. Based on porosity and permeability, geological formations are classified into 4 types. List the types and explain any two of it with examples.  
(CO2) [Knowledge]
4. The Global Positioning System (GPS) is a US owned utility that provides users with positioning, navigation, and timing (PNT) services. List and explain any two segments of GPS.  
(CO3) [Knowledge]

**PART B**

**ANSWER ALL THE QUESTIONS**

**5 X 10M = 50M**

5. Pedologists have distinguished a number of horizons or layers within the soil. A vertical section made through a soil from the surface down to the bedrock reveals various layers, the identification of which is termed a soil profile. Explain the distinct layers of soil profile with sketch.  
(CO2) [Comprehension]

6. All Igneous rocks are thought to have been formed from single parent magma of basaltic composition and which is originally homogenous and uniform in nature. From this parent basaltic magma diverse types of igneous rocks are assumed to have evolved through the process of differentiation and assimilation. Enlist and explicate any four processes of differentiation.  
(CO2) [Comprehension]
7. Faults are well defined cracks or fractures along which the rock-masses on either side have relative displacements. Depict the fault terminologies.  
(CO3) [Comprehension]
8. Earthquake is the most dangerous natural phenomenon that generates sizable destruction in structures. Suggest any eight measures to protect building structures from earthquake.  
(CO1) [Comprehension]
9. An aerial photograph is the picture of the ground surface taken from the air with a camera pointing downward. On the basis of optical axis position aerial photographs are classified into 2 types. Describe the types of aerial photographs and their uses in in the field of photogrammetry and photointerpretation.  
(CO3) [Comprehension]

### **PART C**

**ANSWER ALL THE QUESTIONS**

**2 X 15M = 30M**

10. The orientation, shape, and location of folds and faults can reveal the direction and intensity of past tectonic forces that acted on the rocks. The folds and faults have important implications for engineering and construction projects. Illustrate the engineering considerations of folds and faults.  
(CO2) [Application]
11. Geographic Information System (GIS) is used for mapping and geospatial analysis of data while GPS (Global Positioning System) is used for navigation. They are both widely available today with some even being produced by small businesses. Discuss elaborately the application of GIS and GPS.  
(CO3) [Application]