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**Presidency University**

**Bengaluru**

 **SCHOOL OF ENGINEERING**

**Summer Term End Term Examinations, August 2024**

**Winter Semester**: 2023 - 24

**Course Code**: CIV 2008

**Course Name**: Engineering Geology

**Program & Sem**: B.Tech, & Summer Term

**Date**: 06-08-2024

**Time**: 09:30AM – 12:30PM

**Max Marks**: 100

**Weightage**: 50%

 **Instructions:**

1. *Read the all questions carefully and answer accordingly.*
2. *Do not write any matter on the question paper other than roll number.*

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| **PART A** |
|  **ANSWER ANY 4 QUESTIONS 4Q X 5M=20M** |
| 1 | A mineral is naturally formed, homogeneous inorganic solid substances. Differentiate Rock forming and Ore forming minerals. | (CO 1) | [Knowledge] |
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| 2 | Rocks are generally classified into three types namely, igneous, sedimentary and metamorphic rocks. Differentiate Igneous and sedimentary rocks. | (CO 2) | [Knowledge] |
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| 3 | Based on porosity and permeability, geological formations are classified. Explain any three geological formation of ground water. | (CO 2) | [Knowledge] |
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| 4 | The Global Positioning System (GPS) is a US owned utility that provides users with positioning, navigation, and timing (PNT) services. Explain the three segments of GPS. | (CO 3) | [Knowledge] |
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| 5 | The study of physical properties of minerals is important, since it varies from mineral to mineral. Enlist the properties of minerals depend on the internal atomic structure and mode of formation? | (CO 1) | [Knowledge] |
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| 6 | Depending upon the factors responsible for metamorphism, different kinds of metamorphism are noticed. Differentiate thermal and dynamic metamorphism.  | (CO 2) | [Knowledge] |
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| **PART B** |
|  **ANSWER ANY 5 QUESTIONS 5Q X 10M=50M** |
| 7 | Pedologists have distinguished a number of horizons or layers within the soil. A vertical section made though 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.  | (CO 2) | [Comprehension] |
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| 8 | Weathering is the process of mechanical disintegration and chemical decomposition of the rocks of the earth’s surface, under the influence of factors like temperature, water, oxygen, carbon dioxide and organic life. Name the types of weathering and explain it. | (CO 2) | [Comprehension] |
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| 9 | Depending upon mode and mechanism of accumulation and consolidation, sedimentary rocks may broadly have classified into 4 types. Enlist and explain the types of sedimentary rocks. | (CO 2) | [Comprehension] |
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| 10 | Faults are well defined cracks or fractures along which the rock-masses on either side have relative displacements. Depict the fault terminologies with neat sketch. | (CO 3) | [Comprehension] |
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| 11 | On the basis of optical axis position aerial photographs are classified into two types. Describe the types of aerial photographs and their uses in in the field of photogrammetry and photointerpretation.  | (CO 3) | [Comprehension] |
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| 12 | The subsurface occurrence of ground water may be divided into two zones i.e. zone of aeration and zone of saturation. Illustrate the vertical distribution of ground water with sketch. | (CO 2) | [Comprehension] |
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| 13 | Chemical weathering is a process of alteration of rocks of the earth crust by chemical decomposition brought about by atmospheric gases and moisture. Discuss the main processes involved in chemical weathering | (CO 2) | [Comprehension] |
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| **PART C** |
|  **ANSWER ANY 2 QUESTIONS 2Q X 15M=30M** |
| 14 | Seawater intrusion associated with lowering of groundwater levels is an important issue in many of coastal groundwater basins. Illustrate the main causes and remedial measures to control of sea water intrusion.  | (CO 2) | [Application] |
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| 15 | 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. | (CO 3) | [Application] |
|  |
| 16 | The orientation, shape, and location of folds can reveal the direction and intensity of past tectonic forces that acted on the rocks. Folds have important implications for engineering and construction projects. Depict the Elements of folds with engineering considerations. | (CO 3) | [Application] |