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**Presidency University**

**Bengaluru**

**SCHOOL OF ENGINEERING**

**Make-Up Examinations, July 2024**

**Winter Semester**: 2023 - 24

**Course Code**: CIV2008

**Course Name**: Engineering Geology

**Program & Sem**: B.Tech, & III Sem (2022 batch)

**Date**: 01 JULY 2024

**Time**: 01:30PM – 04:30PM

**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 | The travel - time curve is one of the method to determine the epicenter location of earthquake. How the Seismologist use travel‐time graph to locate the earthquake epicenter? | (CO 1) | [Knowledge] |
|  | | | |
| 2 | Rocks are generally classified into three types namely, igneous, sedimentary and metamorphic rocks. Differentiate sedimentary and metamorphic rocks. | (CO 2) | [Knowledge] |
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| 3 | Seawater intrusion associated with lowering of groundwater levels is an important issue in many of coastal groundwater basins. What is Sea water intrusion? List the main causes of sea water intrusion. | (CO 2) | [Knowledge] |
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| 4 | GIS that uses web technology to communicate between a server and a client. What is GIS? Name the different components of GIS? | (CO 3) | [Knowledge] |
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| 5 | Folds have important implications for engineering and construction projects. Enlist any five the engineering considerations of folds. | (CO 3) | [Knowledge] |
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| 6 | The triangulation method is one of the best method to determine the epicenter location of earthquake. How the Seismologist use triangulation method to locate the earthquake epicenter? | (CO 1) | [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 | Folds may be defined as undulations or bends or curvatures developed in the rocks of the earth crust as a result of compressional forces to which these rocks have been subjected from time to time in the past geological history of the earth. Depict the elements of folds with neat sketch. | (CO 3) | [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 | 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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| 13 | 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. Illustrate the engineering considerations of folds. | (CO 3) | [Comprehension] |
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| **PART C** | | | |
| **ANSWER ANY 2 QUESTIONS 2Q X 15M=30M** | | | |
| 14 | An aerial photographis 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. | (CO 3) | [Application] |
|  | | | |
| 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] |
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| 16 | 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) | [Application] |