

Name:	
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, Dec 2021

Course: Engineering Geology
Program: B Tech Civil Engineering
Course Code: CIVL 2014

Semester: III
Time: 03 Hours
Max. Marks: 100

Instructions: Attempt all the questions

SECTION A (4 x 5 = 20 marks)

1. Each Question carries 4 marks
2. Instruction: Complete the statement/Select the correct answer(s)
3. Choose the best possible answer in case of MCQ
4. Also explain your answer in 1-2 line(s)

S. No.		Marks	CO
Q1	A place is 120° west of London. An observer in London sees a clock at 15.30. How long will it be before a clock in this place displays the same time?	4	CO1
Q2	Mention the weathering type for the following agents of weathering: a) Man b) River c) Acids d) Oxygen There can be multiple answers also.	4	CO2
Q3	Fill in the Blanks: a) Diamond has ----- Lustre. b) The hardest mineral is c) Quartz shows fracture. d) and are the two minerals that react with diluted HCl.	4	CO2
Q4	Identify the intrusive volcanic landforms given Below: a. Magma which could not come out b. Saucer-shaped c. Shape like waves d. Intrusive granitic rock	4	CO2
Q5	Identify the Types of rocks from the following examples: a. Granite b. Gabbro c. Breccia d. Coal	4	CO1

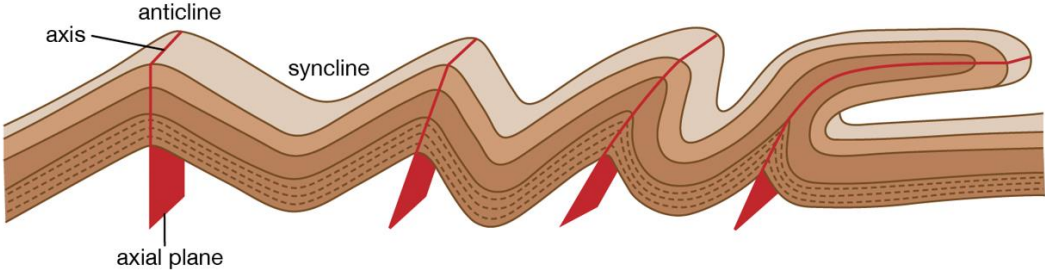
SECTION B (10 x 4 = 40 marks)

1. Each Question carries 10 marks
2. Instruction: Write Short/brief notes

Q6	Identify the physical feature given below and give complete classification covering the other types as well.	10	CO2
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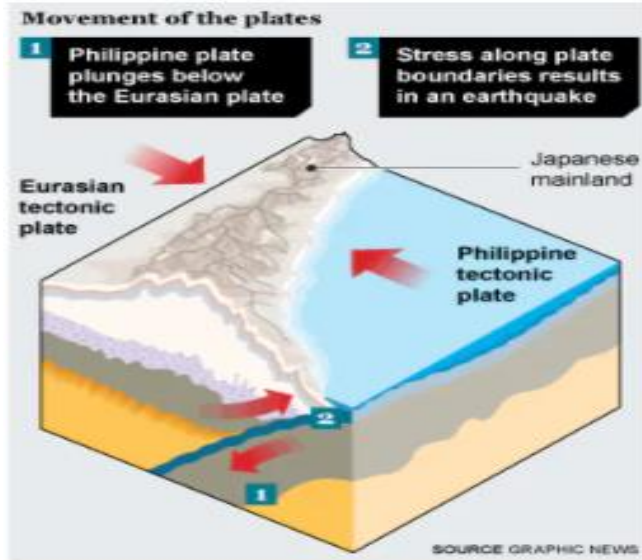
OR

Q6	<p>There are four types folds in this figure. Identify explain the characteristics of these folds.</p> 	10	CO2
Q7	<p>a) Is man an agent of biological weathering? If so, how? b) Also mention other agents of Biological weathering in brief.</p>	5+5	CO1
Q8	<p>What are the geological considerations in the selection of a tunnel site?</p>	10	CO4
Q9	<p>A soil deposit has three layers having the same thickness but the permeability of the layers are in the ratio of 1:1:3 from top to bottom. Calculate the effective permeability. Also give the ratio of $K_x: K_y$</p>	10	CO3

SECTION-C (20 x 2 = 40 marks)

- 1. Each Question carries 20 marks**
- 2. Instruction: Write long answer.**

Q10	<p>With reference to given figure, explain the phenomenon occurring in detail. Also, sketch the shadow zones for P wave and S wave.</p>	10+5+5	CO3



Q11	A G+5 building is proposed in an area prone to seismic activity (Zone IV). Groundwater table is also shallow. For the above conditions and structure, what are the considerations from engineering geology point of view? Your answer should address foundation criteria, groundwater considerations, seismic zone considerations apart from other criteria which may be necessary	10+10	CO4
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OR

Q11	<p>Explain the principles that govern the below mentioned geophysical methods used for geological investigations.</p> <ul style="list-style-type: none"> a) Seismic Refraction Method b) Electrical resistivity methods c) Remote Sensing Methods <p>Also, compare the relative suitability of these methods.</p>	20	CO4
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