



Name:	
Enrolment No:	

UPES	
End Semester Examination, December 2023	
Course: Economic Geology Program: B.Sc Geology Course Code: PEGS1002	Semester: I Time : 03 hrs. Max. Marks: 100
Instructions: Draw schematics wherever necessary	

SECTION A
(5Qx4M=20Marks)

Q 1	a. Cubic & basal cleavage has ----- & -----sets of cleavage planes b. Two common tools to find out hardness of minerals are ----- & -----	04	CO1
Q 2	Differentiate between Alpha and Beta Quartz	04	CO1
Q 3	a. Fibrous minerals exhibit -----type of fracture b. Peat leads to formation of lignite due to ----- c. Excessive sedimentation in basin leads to formation of -----instead of coal. d. Uranium is -----a mineral	04	CO1
Q 4	Explain the role of water-table on the coalification/coal maturity process.	04	CO2
Q 5	Elaborate the special properties of minerals	04	CO2

SECTION B
(4Qx10M= 40 Marks)

Q 6	Consider yourself to a Field Geologist. You are on a field trip having no tools with you. You came across a wonderful specimen. Without any identification tool, what are the characteristic properties of the mineral you will consider while identifying the same.	10	CO2
Q 7	In accordance with Gibbs Rule, explain a non-variant system with suitable example.	10	CO4
Q 8	a. Differentiate between pseudomorphism and polymorphism b. Define crystal. c. Discuss Hilt's law d. Explain the changing composition of magma corresponding to increase/ decrease in temperature e. Define isomorphism in Quartz	2*5 =10	CO3
Q 9	Using the Principle of Bowens Reaction series, arrange the minerals in order of increasing stability with suitable justification for the same. OR List the common ore minerals of Copper. With suitable sketch, illustrate the formation of copper oxide and sulphide minerals.	10	CO3

SECTION-C
(2Qx20M=40 Marks)

Q 10	With sketch, define solidus & liquidus curve in Phase Diagram OR Examine & validate the statement “Uni-component system should have a maximum of two degrees of freedoms”.	20	CO3
Q 11	With neat sketch, explain play of light while in an isotropic and anisotropic mineral while light i. Entering polarizer ii. Leaving polarizer iii. leaving analyzer	20	CO3