


<b>Name:</b> <b>Enrolment No:</b>	
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<b>UPES</b> <b>End Semester Examination, December 2023</b>	
<b>Course: Economic Geology</b> <b>Program: B.Sc Geology</b> <b>Course Code: PEGS3026</b>	<b>Semester: V</b> <b>Time : 03 hrs.</b> <b>Max. Marks: 100</b>
<b>Instructions: Draw suitable sketch wherever necessary</b>	

<b>SECTION A</b> <b>(5Qx4M=20Marks)</b>			
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Q 1	Discuss the role of chemical and physical properties of rock in controlling ore localization in hydrothermal deposits	04	CO1
Q 2	Discuss the two types of textures exhibiting by Chromite deposits	04	CO1
Q 3	Classify Cu-Zn deposits of VMS origin	04	CO2
Q 4	Differentiate between Indicated and Inferred Reserve	04	CO2
Q 5	a. Minerals in which country is not self-sufficient, known as -----. b. Conversion of deposit to target happens in ----- stage. c. Weighted average method is otherwise known as -----method. d. The area beyond territorial water is known as ----	04	CO1

<b>SECTION B</b> <b>(4Qx10M= 40 Marks)</b>			
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Q 6	a. Does carbonization is related to coal maturity, if yes, how? b. Establish the interdependency between tenor, grade & cut-off grade. c. Nugget Effect is bias/ blessing in sampling, analyze. d. Grab vs Bulk sampling, analyse the accuracy in terms of accuracy. e. Differentiate between Alternate & Fractional shoveling	2*5 =10	CO2
Q 7	The initial cash outlay of a Bauxite deposit is 2,00,000. The cash inflows will be 40000, 30000, 20000, and 50000 in 4 years. Calculate the NPV and judge the project viability.	10	CO3
Q 8	Explain the mode of formation of Cu-deposits of porphyry origin	10	CO3
Q 9	With a neat sketch, demarcate the various zones in VMS deposit highlighting its characteristic mineralogy/ mineral assemblage.  <b>OR</b> Elluvial placer is considered as the Embryonic stage in formation of stream placer. Do you agree/ disagree, support your answer with proper justification/ s.	10	CO3

**SECTION-C**  
**(2Qx20M=40 Marks)**

Q 10

There is a Pb deposit, which evaluated based upon 7 boreholes. Find out the average grade of the deposit. The details are as follows:

Sample location	Thickness (mtrs)	Area (ft <sup>2</sup> )	Tonnage Factor	grade
B-1	150	5320	10	1.21
B-2	135	5300	10	0.97
B-3	?	4400	10	?
B-4	175	5520	10	0.75
B-5	155	6800	10	0.82
B-6	180	4960	10	0.66
B-7	?	4520	10	?

The max. depth up to which, deposit is encountered is 300. The information for Borehole 7 is as follows.

Each section is at an interval of 50. The respective grade for each section is 0.4, 0.9, 1.2, 1, 1.7 & 1.1 of Pb.

For Bore hole 3, the information is as follows-

Thickness	Grade
0-50	0.3
50-100	0.7
100-150	0.5
150-180	1
180-250	0.7
250-300	0.8

Cut-off grade is **0.7%** of Pb

**20**

**CO3**

Q 11

BIFs were first reported in Archean period and marker of GOE. & characterized by rhythmic precipitation of iron and silica, mostly.

a. Analyse the reason behind this rhythmic precipitation rather simultaneous precipitation

b. Examine the formation of iron oxide in an anoxic environment.

**OR**

Does Diamond formation igneous in nature, Yes/ No, validate with suitable examples. Favorable conditions for diamond formation prevails in lower mantle, Check the authenticity of statement with suitable justification/s

**10\*2  
=20**

**20**

**CO4**