

# UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

## Supplementary Examination, May 2022

Course Name: Mineral Exploration & Mining Geology

Programme Name: B. Tech, GIE

Course Code: PEGS 2006

Semester: IV

Time: 03 hrs

Max. Marks: 100

### SECTION A (20 Marks)

Q 1	a. Low oblique images are used in ----- survey. b. Shape of Image is GPR is ----- c. Alluvial soil exhibits ----- drainage texture d. Minerals in which country is not self-sufficient, known as -----	04	CO3
Q 2	Mark True/ False a. Placer deposits are result of residual liquid segregation b. Syngenetic deposits crystallized simultaneous with host rock. c. Tenor of the ore is the metal content of the ore. d. Commissioning stage is followed by start-up stage	04	CO1
Q 3	Mark True/ False a. Anthracite & Lignite are different grades of coal b. Hydrocarbon gases are the last products in oil cooking c. Placer deposits can be of residual origin d. Endogenetic deposits are formed due to surface processes	04	CO1
Q 4	a. For auction of composite lease, -----exploration needs to be completed. b. presence of minerals is authenticated in -----area c. NEMP has a -----tier amendment system d. The area beyond territorial water is known as -----	04	CO2
Q 5	a. Mineral identification based on physical & chemical properties known as ----- b. Frequency of radio waves for GPR is c. In GPR low frequency waves are used for -----purpose d. In an open pit mine, line joining bottom most toe & top most crest forms -----	04	CO1

### SECTION B (40 Marks)

Q 6	A copper vein of uniform thickness found at a depth of 100 mtrs. Vein width at the top is 60 mtrs, corresponding assay values are 15 & 9 respectively. Find out the average assay of the deposit.	10	CO4
Q 7	Analyze the influence/role of interpolation & extrapolation in mineral exploration.	10	CO4
Q 8	Examine the effect of particle motion in formation of placer deposit	10	CO1
Q 9	What is role of scale and how will it differ for a) Reconnaissance, b) Prospecting, c) General Exploration and d) Detailed Exploration?  <b>OR</b>  Explain various phases & stages of Mining cycle. Give suitable justification for cost variation during various stages/ phases.	10	CO3

### SECTION C (40 Marks)

Q 10	Elluvial placer considered as the Embryonic stage in formation of stream placer. Do you agree/ disagree, support your answer with proper justification/ s.	20	CO3
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Q 11	Discuss the components of Aerial photographs & their respective significance in mineral exploration. Examine the importance of drainage pattern in mineral exploration.  <b>OR</b>  Geochemical anomaly governs the concept of geochemical prospecting, Justify	<b>5+5+</b> <b>10=20</b>  <b>20</b>	<b>CO4</b>
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