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**UNIVERSITY OF PETROLEUM
AND ENERGY STUDIES**

End Semester Examination – May, 2018

Program/course: B.TECH/ MINING ENGG

Subject: MINERAL EXPLORATION

Code : GSEG 328

No. of page/s: 02

Semester – VI

Max. Marks : 100

Duration : 3 Hrs

Instructions:

- a. Answers must carry the supporting material such as equations and diagrams, wherever necessary
- b. Section-A is compulsory
- c. In section-B, attempt any 1 from Q-5
- d. Section C is compulsory

Section A

20Marks

1. Each question carries 05 marks

- i) What are the drilling methods? What is the advantage of wire line coring over conventional coring?
- ii) Discuss the limitations of refraction method in exploration.
- iii) Discuss the scale intended for topographical & geological mapping for various stages of exploration?
- iv) What is the difference between feasibility & pre-feasibility resource?

Section B

40 Marks

2. a) Statement: Take a complete cross section of the material, being careful to include all the material on the belt and only the material in the section. What is the context for the above statement? Why such advice is given? (5 marks)
- b) Is Prospecting used for outcrop identification? Justify? (5 marks)

Each question carries 02 mark (02*5=10 marks)

3. a) What is the advantage and disadvantage of direct push?
- b) Give suitable technique that qualifies aerial reconnaissance survey?

- c) Statement: Arizona soil samples are collected at a nominal depth of 0.50 m on a 100 m by 25 m north-south orientated grid which is surveyed using a total station. Which drilling method is suitable to recover samples at 0.50 m depth?
 - d) Differentiate between tone & texture in aerial photograph.
 - e) What do you mean by secondary haloes?
4. a) Is Prospecting used for outcrop identification? Justify? (5 marks)
b) Compare advantages of Geological mapping at 1:50,000 cm compared to 1:10,000 cm? What nomenclature of dragline signifies? (5 marks)
5. What are the controlling factors for resistivity measured in the ground? Based upon resistivity, classify the rocks (10 marks)

OR

Discuss the significance of atmospheric window in mineral exploration

Section C

40 Marks

Each question carries 20 Marks

6. a) Analyse the influence/role of interpolation & extrapolation in mineral exploration (10 marks)
b) How Remote sensing images are used in Mineral Exploration & how they influence risk involved in project? (10 marks)
7. Discuss the components of Aerial photographs & their respective significance in mineral exploration. Examine the importance of drainage pattern in mineral exploration. (20 marks)