

**PARUL UNIVERSITY**  
**FACULTY OF APPLIED SCIENCE**  
**M.Sc., Winter, 2019-20- Examination**

**Semester: 3**  
**Subject Code: 11211204**  
**Subject Name: Exploration Geology**

**Date: 03/12/2019**  
**Time: 02:00 pm to 04:30 pm**  
**Total Marks: 60**

**Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

- Q.1. A) Essay type/ Brief note (4x2) (Each of 04 marks) (08)**  
 (a) Write a brief note on free air correction and Bouguer correction.  
 (b) Write brief note on Rubidium Vapour magnetometer
- Q.1. B) Answer the following questions (Any two)**  
 (a) Short note/ Brief note (2x2)/ Schematically label the figures (2x2) (Each of 02 marks) (04)  
 1. Name the two computer oriented standard format for core logs used by most organization.  
 2. Schematically represent the Vector diagram of earth's magnetic field  
 (b) Short note on the principle of seismic method (04)  
 (c) Short note on surface geological mapping in an open-pit mine. (04)
- Q.2. A) Answer the following questions.**  
 (a) Short note/ Brief note (2x2)/ Fill in the blanks. (Each of 02 marks) (04)  
 1. In \_\_\_\_\_ waves, the motion of the particles is parallel to the direction of propagation of the wave.  
 2. List the four bands with their wavelength range that are received in Multispectral scanner (MSS) data in Landsat-1.  
 (b) Short note on the stages of exploration. (04)
- Q.2. B) Answer the following questions (Any two)**  
 (a) Multiple choice questions. (Each of 01 marks) (03)  
 1. \_\_\_\_\_ furnishes the guide to all people connected to the drilling.  
 (a) Reconnaissance Map (b) Base map (c) Geotechnical Order (d) Field diary  
 2. \_\_\_\_\_ gravimeter has an overall accuracy of 0.1 milligal  
 (a) Worden (b) Astatic (c) Static (d) La Coste-Romberg  
 3. In a seismograph, the first arrival is the \_\_\_\_\_ wave.  
 (a) Love (b) Secondary (c) Rayleigh (d) Primary  
 (b) Short note on magnetic susceptibility and its relation to permeability (03)  
 (c) Short note on Application of gravity method (03)
- Q.3. A) Essay type/ Brief note (4x2) (Each of 04 marks) (08)**  
 (a) Short note on Diamond core drilling method  
 (b) Map scale for designing a reconnaissance project
- Q.3. B) Answer the following questions (Any two)**  
 (a) Short note/ Brief note (2x2)/ Schematically label the figures (2x2) (Each of 02 marks) (04)  
 1. Name the widely used products of satellite imagery for geologic reconnaissance study?  
 2. Diagram illustrating the principle of Zero-length spring.  
 (b) Short note on Borehole surveying (04)  
 (c) Short note on bias in sampling (04)
- Q.4. A) Answer the following questions.**  
 (a) Short note/ Brief note (2x2)/ Fill in the blanks. (Each of 02 marks) (04)  
 1. The gravity value which is short of or in excess of the normal value, after the corrections is applied is known as \_\_\_\_\_.  
 2. What is the purpose of auxiliary magnets?  
 (b) Write a brief note on percussion drilling (04)

**Q.4. B) Answer the following questions (Any two)**

- (a) Multiple choice questions. (Each of 01 marks) **(03)**
1. Which series of satellite was designed for geologic data collection?  
(a) Nimbus (b) Geosat (c) Landsat-I (d) Skylab
  2. \_\_\_\_\_ is the highest risk stage in exploration.  
(a) Production (b) Screening (c) Mining (d) Reconnaissance
  3. \_\_\_\_\_ Magnetometer require orientation correctly along the total magnetic field to obtain accurate measurements.  
(a) Geomagnetic gradiometer (b) Fluxgate (c) Rubidium vapour (d) Schmidt
- (b) Short note on logistics used in reconnaissance. **(03)**
- (c) Short note on scanning systems **(03)**