

**APRIL/MAY, 2019 EXAMINATIONS**

**TIME ALLOWED: 2 Hours**

Q1. ai) Explain how Gas Chromatography can be carried out. **(4 marks)**  
ii) Enumerate four applications of Gas Chromatography. **(4 marks)**  
bi) Explain the principle of operation of Vacutainer Syringe System. **(5 marks)**  
ii) List four advantages of Vacutainer Syringe System **(4 marks)**  
ci) What is Meteorology? **(3 marks)**  
ii) List any five Meteorological variables. **(5 marks)**

Q2. a) What is a Colorimeter? **(2 marks)**  
b) Enumerate any four uses of a Total Station. **(4 marks)**  
c) State five advantages of sampling rather than an entire population for a study **(5 marks)**  
d) Mention four essential characteristics of a Graphic Level Recorder. **(4 marks)**

Q3. a) Define Ecology. **(2 marks)**  
b) What is the essence of using a quadrant in a study? **(2 marks)**  
ci) Why is it that grab samplers should not be used to collect reactive gases? **(2 marks)**  
ii) How can this problem be overcome? **(2 marks)**  
d) Explain the operating principles of direct reading instruments. **(7 marks)**

Q4. a) Define instrumentation? **(2 marks)**  
b) Mention two survey equipment that are also remote sensing devices. **(4 marks)**  
ii) Why is it that some field survey equipment are also called remote sensing devices? **(2 marks)**  
c) State three criteria for using integrated sampling procedure for air borne gaseous agents. **(3 marks)**  
d) Differentiate between sampling and population. **(4 marks)**

Q5. ai) What are the factors that control the intervals at which samples are taken in a Quadrant Survey? **(3marks)**  
ii) What is the implication of using small interval? **(2 marks)**  
iii) What is the implication of using great interval? **(2 marks)**  
iii) What normally determines the choice of a quadrant to be used in a study?

iv) What is the main criterion for using random sampling in quadrant survey? **(2 marks)**

b) Outline four particular metadata of radiation measurements. **(4 marks)**