

**B. Sc. Semester I (Honours) Examination, 2018-19****GEOLOGY****Course ID : 12011****Course Code : SHGEL-101C-1(T)**

Course Title : Earth System Science

**Time: 1 Hour 15 Minutes****Full Marks: 25***The figures in the margin indicate full marks.**Candidates are required to give their answers in their own words as far as practicable.*

1. Answer *any five* questions from the following: 1×5=5
    - (a) What is asteroid?
    - (b) What is the 'age of reptiles'?
    - (c) Write down the basic statement of the 'Law of uniformitarianism'.
    - (d) What is the age of the oldest rock record on earth?
    - (e) Write the name of the discontinuity surface between continental and oceanic crust.
    - (f) What is the composition of earth's core?
    - (g) What happened at Permian/Triassic boundary?
    - (h) What is the epicentre of an earthquake?
  
  2. Answer *any two* questions from the following: 5×2=10
    - (a) Compare between the following:
      - (i) Weathering and Erosion
      - (ii) Meteorite and Crustal igneous rock.
    - (b) Classify volcano according to their life cycle. Give example.
    - (c) Briefly discuss about the different types of mechanical weathering process.
    - (d) Provide the subdivision of Cenozoic Era in a tabular form.
  
  3. Answer *any one* question from the following: 10×1=10
    - (a) What do you mean by tectonic plate? Describe with necessary sketches different types of plate boundaries. 2+8=5
    - (b) Compare between terrestrial planets and Jovian planets. Briefly describe Nebular hypothesis regarding the origin of earth. 5+5=10
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**B. Sc. Semester I (Honours) Examination, 2018-19****GEOLOGY****Course ID : 12012****Course Code : SHGEL-102C-2(T)**

Course Title : Mineral Science

**Time: 1 Hour 15 Minutes****Full Marks: 25***The figures in the margin indicate full marks.**Candidates are required to give their answers in their own words as far as practicable.*

1. Answer *any five* questions from the following: 1×5=5
    - (a) Name the crystal system in which the isotropic minerals crystallise.
    - (b) State the law of constancy of interfacial angle.
    - (c) Name a mineral which shows anomalous interference colour.
    - (d) Give one example of mineral which occurs in fibrous form.
    - (e) Which mineral is used for construction of Nicol Prism?
    - (f) Give one example of felsic mineral which is understaturated with respect to SiO<sub>2</sub>.
    - (g) Name the crystal form with highest number of faces.
    - (h) Name the high temperature polymorph of alkali feldspar.
  
  2. Answer *any two* questions from the following: 5×2=10
    - (a) State the principle of coordination and principle of sharing of coordination polyhedra according to Pauling's Rule.
    - (b) Write short notes on:
      - (i) Solid solution, and
      - (ii) Piezoelectricity
    - (c) Write the common formula of olivine group of minerals and mention different members of that group.
    - (d) Briefly describe the process of determination of Miller Indices of crystal faces.
  
  3. Answer *any one* question from the following: 10×1=10
    - (a) Briefly describe different types of unit cell with suitable diagrams.
    - (b) Briefly describe with diagram the use of Becke line in determination of relative refractive indices of two adjacent minerals.
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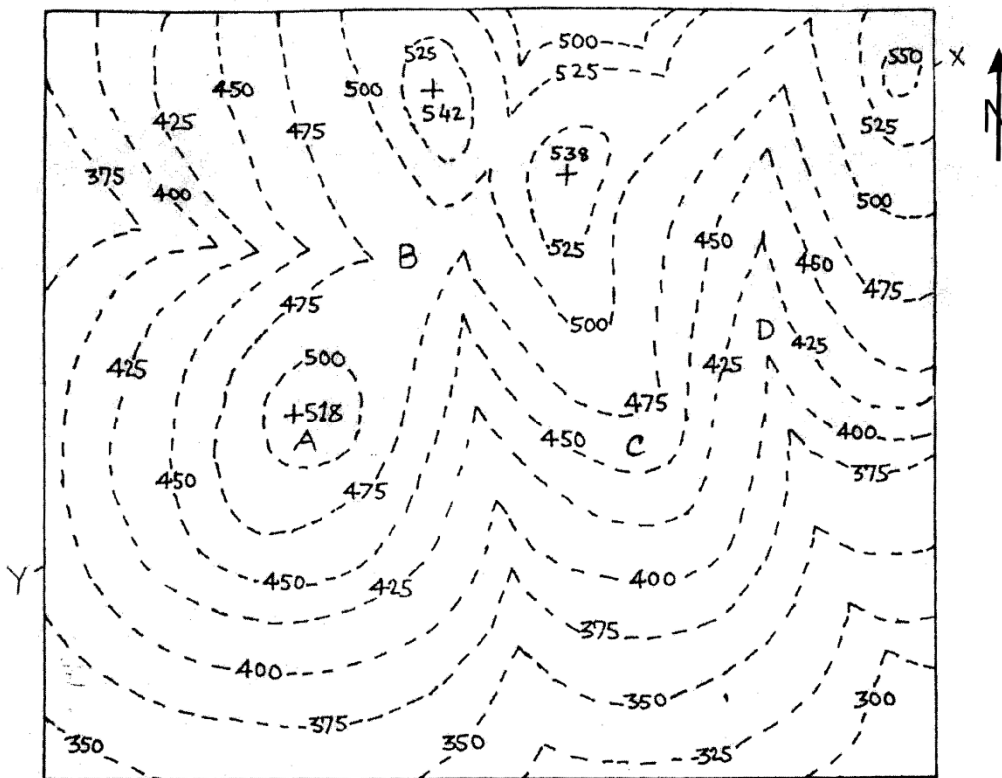
**B. Sc. Semester I (Honours) Practical Examination, 2018-19****GEOLOGY****Course ID : 12021****Course Code : SHGEL-101C-1(P)**

Course Title : Earth System Science Lab.

**Time: 2 Hours****Full Marks: 15***The figures in the margin indicate full marks.**Candidates are required to give their answers in their own words as far as practicable.*

Answer all the questions:

1. Name the geomorphic features at the points A, B, C, D of the given topographic map.  
Draw a section along the XY line. 4+6=10
2. Laboratory note book. 5



Contours are in metre.  
Scale: 4 cm = 100 m

*SH-I/Geology/102C-2(P)/19*

**B. Sc. Semester I (Honours) Practical Examination, 2018-19**

**GEOLOGY**

**Course ID : 12022**

**Course Code : SHGEL-102C-2(P)**

Course Title : Mineral Science Lab

**Time: 2 Hours**

**Full Marks: 15**

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words  
as far as practicable.*

1. Describe the physical properties of the given mineral in hand specimen and identify it. 3+1=4
  2. Describe the optical properties of the given mineral in thin section and identify it. 3+1=4
  3. Study the symmetry elements of the given crystal model and mention its crystal system. 2
  4. Laboratory note book. 5
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