

B.Sc. 3rd Semester (Honours) Examination, 2019-20**GEOLOGY****Course ID : 32011****Course Code : SHGEL-301C-5**

Course Title: Igneous Petrology

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

1. Write *any five* of the following questions: 1×5=5
 - (a) Why basaltic magmas are less viscous than granitic magmas?
 - (b) Name the plutonic igneous rock composed of olivine and plagioclase.
 - (c) Mention one felsic mineral which is not commonly found to be associated with quartz in igneous rock.
 - (d) Name one igneous rock which generally contains zoned plagioclase.
 - (e) Name two discordant igneous rock bodies.
 - (f) Define variation diagram.
 - (g) Name an igneous rock which is produced only by assimilation.
 - (h) Which is the volcanic equivalent of peridotite?

2. Answer *any two* of the following questions: 5×2=10
 - (a) Describe with sketches the primary structures used for determination of right side up of a stratigraphic succession.
 - (b) How can you distinguish between gabbro and diorite though they are plotted in the same field in the IUGS classification igneous rocks?
 - (c) Define Peacock's Alkali Lime Index (PALI). Describe the classification of igneous rocks based on PALI.
 - (d) Compare between I-and S-type granite.

3. Answer *any one* of the following questions: 10×1=10
 - (a) Briefly discuss the processes responsible for the formation of primary igneous textures.
 - (b) Describe the principles of IUGS classification of plutonic igneous rocks with $M < 90$.