# B.Sc. Semester III (Honours) Examination, 2018-19
# GEOLOGY

**Course ID : 32011**     **Course Code : SHGEL-301C-5(T)**

Course Title : Igneous Petrology

**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 of the following:     1×5=5

(a) Mention the factors which control the viscosity of magma.

(b) Give an example of igneous rock which is ultrabasic but not ultramafic.

(c) Name two concordant igneous rock bodies.

(d) Name the igneous rock which shows spinifex texture.

(e) How does norite differ from gabbro?

(f) Define incongruent melting of a mineral.

(g) How does granite differ from granodiorite?

(h) Which igneous rock is most abundant in island-arc setting?

**2.** Answer *any two* questions of the following:     5×2=10

(a) Classify intrusive igneous rock bodies based on their shape and relation with the planar fabric of country rocks.

(b) How does ophitic texture grade to other textures with change of relative size of pyroxene and plagioclase?

(c) Compare norm and mode of igneous rocks.

(d) How do you distinguish between subsolvus and hypersolvus granites?

**3.** Answer *any one* of the following questions:     10×1=10

(a) Briefly discuss the classification of igneous rocks proposed by Hatch, Wells and Wells. Mention the merits and demerits of the classification.     8+2=10

(b) State the course of crystallisation of a liquid having composition $Di_{10} Ab_{20} An_{70}$ in the diopside (Di) – albite (Ab) – anorthite (An) system with proper diagram. Mention the textural character of the solid product.     8+2=10

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