

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

B.Sc. Semester III (Honours) Examination, 2018-19**GEOLOGY****Course ID : 32012****Course Code : SHGEL-302C-6(T)**

Course Title : Sedimentology

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) What is ripple index?
 - (b) What is 'geopetal fabric'?
 - (c) Define diagenesis.
 - (d) What is arkose?
 - (e) What do you mean by supercritical flow?
 - (f) What is CCD?
 - (g) What is meant by 'textural inversion'?
 - (h) What is a reverse graded bed?

 2. Answer *any two* questions of the following: 5×2=10
 - (a) Distinguish between the followings: 2·5×2=5
 - (i) Conglomerate and breccia
 - (ii) Laminar flow and turbulent flow
 - (b) Briefly discuss about textural maturity and mineralogical maturity of sandstone.
 - (c) How does the subaqueous bedform change with flow velocity and sediment grain size? State with diagram.
 - (d) Justify your answer: 2·5×2=5
 - (i) Reduction in grain-size is recorded in downstream direction.
 - (ii) Dry cold climatic condition is indicated by the presence of unaltered feldspar in an arkose.

 3. Answer *any one* of the following questions: 10×1=10
 - (a) Briefly describe the different stages of diagenesis of sandstone. 10
 - (b) Furnish the Dunham's classification of limestone. What is dolomitization? 8+2=10
-

B.Sc. Semester III (Honours) Examination, 2018-19**GEOLOGY****Course ID : 32013****Course Code : SHGEL-303C-7(T)**

Course Title : Palaeontology

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) Define fossil.
 - (b) What is taxonomy?
 - (c) Define species.
 - (d) What is hyponome?
 - (e) What is the age of Ediacaran fauna?
 - (f) Give an example of living fossil.
 - (g) Give an example of sinistrally coiled gastropod.
 - (h) What is peristome of an echinoid?

 2. Answer *any two* questions of the following: 5×2=10
 - (a) Compare between Pelecypoda and Brachiopoda.
 - (b) Write short notes on the followings: 2·5×2=5
 - (i) Index fossil
 - (ii) *Lagerstätten*
 - (c) Briefly discuss about the evolution of suture pattern in ammonite shells with suitable sketches.
 - (d) Briefly discuss on upper Gondwana flora.

 3. Answer *any one* question of the following: 10×1=10
 - (a) Discuss about the fossilization process and modes of preservation.
 - (b) Discuss about the lower Gondwana flora and their possible relation to past climate.
-

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

GEOLOGY

Course ID : 32021

Course Code : SHGEL-301C-5(P)

Course Title : Igneous Petrology 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. Identify the minerals in the given hand specimen of igneous rock. Describe the physical properties of the minerals and name the rock. 3+2+1=6
 2. Identify the minerals in the given thin section of igneous rock. Describe the optical properties of the minerals, texture and name the rock. 2+2+1+1=6
 3. Laboratory note book. 3
-

SH-III/Geology/302C-6(P)/19

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

GEOLOGY

Course ID : 32022

Course Code : SHGEL-302C-6(P)

Course Title : Sedimentology 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. Describe the given rock in hand specimen. 3
 2. Describe the given thin section of a sedimentary rock mentioning its composition and texture.
Provide a suitable name of the rock. 8+1=9
 3. Laboratory note book. 3
-

SH-III/Geology/303C-7(P)/19

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

GEOLOGY

Course ID : 32023

Course Code : SHGEL-303C-7(P)

Course Title : Palaeontology 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. Identify and describe the morphological features of the given fossil specimen with neat labelled sketch. 10
 2. Laboratory note book. 5
-