

Total No. of Printed Pages—4

3 SEM TDC GEOH (CBCS) C 5

2021

(Held in January/February, 2022)

GEOLOGY

(Core)

Paper : C-5

(Igneous Petrology)

Full Marks : 53

Pass Marks : 21

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

UNIT—1

(Marks : 5)

1. Write a brief note on geothermal gradient.
How is the geothermal gradient related to
different tectonic environments? 2+3=5

(2)

UNIT—2

(Marks : 7)

2. What are the different types of lava flow?
Write briefly on the physical properties of
magma. 2+3=5
3. Answer the following as directed : 1×2=2
- (a) The extrusive equivalent of diorite is
trachyte/andesite/phonolite.
(Choose the correct one)
- (b) Long vent volcanic pipe formed by
gaseous explosion is called _____.
(Fill in the blank)

UNIT—3

(Marks : 8)

4. (a) Describe the crystallization trend of
forsterite-silica system. 5
- Or
- Describe the crystallization trend of
albite-anorthite system.
- (b) What does peritectic point represent?
Discuss with an example. 1+2=3

(3)

UNIT—4

(Marks : 10)

5. (a) Differentiate between the physical properties of rhyolitic and basaltic magma. 3
- (b) What do you mean by primary magma? What are the different processes of diversification of magma? 1+3=4
- (c) Answer the following as directed : 1×3=3
- (i) Myrmekitic intergrowth is between orthoclase and albite/orthoclase and quartz/plagioclase and quartz.
(Choose the correct one)
- (ii) Basalt is rich in _____ mineral.
(Fill in the blank)
- (iii) _____ is a high pressure form of silica.
(Fill in the blank)

UNIT—5

(Marks : 5)

6. Write short notes on any two of the following : $2\frac{1}{2} \times 2 = 5$
- (a) Ophitic texture
- (b) Corona structure

(c) Holohyaline texture

(d) Pillow structure

UNIT—6

(Marks : 18)

7. (a) What are the bases on which the IUGS classification distinguishes common igneous rocks? How are the common plutonic rocks classified in the IUGS classification? State two demerits of IUGS classification scheme. $2+4+2=8$
- (b) Write petrogenesis on any *five* of the following : $2 \times 5 = 10$
- (i) Komatiite
 - (ii) Granite
 - (iii) Lamprophyres
 - (iv) Abor volcanics
 - (v) Basalt
