

2019

B.Sc.

4th Semester Examination

**GEOLOGY (Honours)**

Paper - C8P

(Metamorphic Petrology)

[Practical]

Full Marks : 20

Time : 3 Hours

*The figures in the margin indicate full marks.*

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

1. (a) Calculate the ACF values of the rock whose chemical analysis is given below :

[ Turn Over ]

	Wt%	Mol. Wt.
SiO <sub>2</sub>	54.00	—
Al <sub>2</sub> O <sub>3</sub>	14.00	102
TiO <sub>2</sub>	2.00	—
Fe <sub>2</sub> O <sub>3</sub>	3.00	159.7
FeO	9.00	71.8
MnO	0.00	70.9
MgO	4.00	40.3
CaO	7.00	56.1
Na <sub>2</sub> O	3.00	62
K <sub>2</sub> O	2.00	62
P <sub>2</sub> O <sub>5</sub>	0.00	—
Total	98.00	141.9

(b) Plot the rock on the ACF diagram (take 10cm long base of the ACF diagram) and hence find out the mineral assemblage of the rock under both amphibolite and greenschist facies metamorphism. 5

2. Describe the mineralogy and texture of the given hand specimen of the metamorphic rock and identify the same with proper reason. 3

3. Describe the petrography of the given thin section of the metamorphic rock. Draw sketches to illustrate the texture/structure of the rock under the microscope. Identify the rock with proper reason. 7
  4. Laboratory Note book. 2
  5. Viva-Voce. 3
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