

PRACTICAL TEST FOR IESO 2010

DLINGO AREA, BANTUL REGENCY, YOGYAKARTA, INDONESIA

Wednesday, September 22, 2010

INSTRUCTIONS:

1. Please write your name and nationality in English on the cover pages
2. The total time allocated for this practical test is about 45 minutes for every student.
3. Please write your answer legibly. Illegible answers will be counted as incorrect.
4. Please write your answers only on this practical test sheet. Please encircle the most appropriate answer.
5. Read the entire question carefully before answering.
6. Please handover the completed practical test sheet to member of the organizing committee at the location.

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PROBLEM SETS

Location 1 (4 minutes):

8 points

1. Using the hand lens provided to you observe the igneous rock within the marked area and identify two main minerals in the rock.
 - a. Plagioclase and pyroxene
 - b. Plagioclase and biotite
 - c. Quartz and pyroxene
 - d. Quartz and hornblende
 - e. Hornblende and pyroxene

2. Observe the petrological characteristics and identify the igneous rock
 - a. Andesite
 - b. Rhyolite
 - c. Granite
 - d. Diorite
 - e. Gabbro

3. By observing the whole part of the outcrop in this area identify the igneous rock body
 - a. A fragment in conglomerate
 - b. An exotic block in meta-breccia
 - c. A part of groundmass of the igneous rock
 - d. An inclusion in the volcanic rock
 - e. A fragment in volcanic breccia

Location 2 (5 minutes):

10 points

4. Please observe the rock components at this Location. Identify at least two types of included rock fragments:
 - a. Basalt and dolomite
 - b. Andesite and tuff
 - c. Andesite and limestone
 - d. Basalt and quartzite
 - e. Basalt and shale

5. Please carefully observe by naked-eye and/or using the hand lens identify the rock fragment (*shown by arrow*).
 - a. Quartzite
 - b. Tuff
 - c. Coral
 - d. White marl
 - e. Phyllite

6. By observing the entire outcrop identify the rock type
 - a. Volcanic breccia
 - b. Brecciated andesite
 - c. Conglomerate
 - d. Fault breccia
 - e. Fanglomerate

Location 3 (6 minutes):

12 points

7. Identify the geological structure at this Location by careful observation.
 - a. Normal fault
 - b. Dextral strike-slip fault
 - c. Sheared joint
 - d. Thrust fault
 - e. Oblique fault

8. By using your compass, please measure the direction of dip of the plane of the geological structure identified in Question 7.
 - a. Northeast
 - b. Southwest
 - c. Southeast
 - d. Northwest
 - e. West

9. The strike/dip angle of the bedding plane is about (*Note: acceptable error is $\pm 5^\circ$*)
 - a. N 15° E/ 45°
 - b. N 50° W/ 45°
 - c. N 75° E/ 15°
 - d. N 60° W/ 45°
 - e. N 45° E/ 15°

Location 4 (3 minutes):

6 points

10. Sedimentary structures identified in the rock marked by *arrows* 'A', 'B', and 'C'.

- | | | |
|--------------------------|------------------------|------------------------|
| a. A = Scouring | B = ripple mark | C = lenticular bedding |
| b. A = Cast | B = lamination | C = Cross bedding |
| c. A = Convolute bedding | B = lamination | C = flame structure |
| d. A = Flame structure | B = lenticular bedding | C = burrow |
| e. A = Ripple mark | B = lenticular bedding | C = convolute bedding |

Location 5 (3 minutes):

6 points

11. Please observe the sedimentary structure present in the marked area and its vicinity, and identify it.
- a. Ripple mark
 - b. Cross bedding
 - c. Flame structure
 - d. Convolute bedding
 - e. Slump structure

Location 6 (4 minutes):

8 points

12. The rock at this Location is predominantly composed of the following rock fragments
- a. Andesite and dacite
 - b. Dacite and granite
 - c. Basalt and syenite
 - d. Diorite and gabbro
 - e. Rhyolite and basalt
13. Please identify the rock type at this Location.
- a. Intrusive breccia
 - b. Fault breccia
 - c. Volcanic breccia
 - d. Agglomerate
 - e. Brecciated igneous rock

Location 7 (3 minutes):

6 points

14. Three types of rock fragment identified in the rock at this location are
- a. Marl, tuff and lignite
 - b. Tuff, claystone and charcoal
 - c. Limestone, tuff and coal
 - d. Tuff, lapilli and lignite
 - e. Tuff, chalk and charcoal

Location 8 (6 minutes):

12 points

15. Two main rock fragment types observed in the rock at this Location include
 - a. Tuff and lignite
 - b. Tuff and charcoal
 - c. Chalk and coal
 - d. Tuff and peat
 - e. Limestone and charcoal

16. Please observe the marked area on the outcrop and identify the rock type.
 - a. Agglomerate
 - b. Volcanic siltstone
 - c. Tuff-enriched siltstone
 - d. Coarse-grained sandstone
 - e. Pumice breccia

17. On the basis of the orientation measurement of rock fragments, the paleocurrent direction in the formation of this sedimentary rock was
 - a. Westward
 - b. Northward
 - c. Southeastward
 - d. Southwestward
 - e. Northeastward