

2018

GEOLOGY

(Theory)

Full Marks : 70

Pass Marks : 21

Time : Three hours

The figures in the right margin indicate full marks for the questions.

All the questions are compulsory

Select the most appropriate answer of the following alternatives given as A, B, C, or D and rewrite it.

1. The direction of dip and strike of an inclined bed are always at an angle of – 1
 - A. 90°
 - B. 60°
 - C. 45°
 - D. 30°

2. Which one of the following is the oldest in age ? 1
 - A. Triassic
 - B. Devonian
 - C. Carboniferous
 - D. Palaeocene

P.T.O.

3. The two essential minerals commonly present in granite are – 1
- A. Orthoclase and Quartz
 - B. Quartz and Plagioclase
 - C. Quartz and Biotite
 - D. Orthoclase and Plagioclase

4. The best building stone among the following is – 1
- A. Sandstone
 - B. Shale
 - C. Basalt
 - D. Conglomerate

Answer Question Nos. from 5 – 14 in one word or a sentence each.

5. Name the instrument which is commonly used to measure the dip and strike in the field. 1
6. Identify the rock which is formed along the fault plane with angular and sub angular fragments and crushed matrix. 1
7. What causes the formation of normal fault in rocks? 1
8. Identify the youngest and of oldest Tertiary rock formations in the state of Manipur. 1
9. Why is correlation of strata by fossil more important than that of lithology. 1
10. Name the volcanic rock which is equivalent to plutonic gabbro. 1
11. What will be the effect on sandstone when it is thermally metamorphosed? 1
12. Give the name of common texture found in schists. 1

13. Indicate one mineral formed by sublimation mineral deposit. 1
14. Select one rock which has good porosity and permeability from the following : 1
sandstone, quartz, basalt and limestone

Answer Question Nos. 15 to 24 in about 30 words each.

15. Write short answer on 'Contour' in map. 2
16. Draw a neat and labelled diagram to show columnar joints in rocks. 2
17. Write short answer on 'Index fossil'. 2
18. Give *any two* distinguishing characteristics of igneous rocks. 2
19. Compare between dolerite and dunite. 2
20. Mention *one* point each of similarity and dissimilarity between gneiss and granite. 2
21. Draw a labelled diagram of graded bedding. 2
22. State *any two* common causing factors of landslides in Manipur. 2
23. Both sandstone and quartzite are used as good building stones but sandstone is preferred. Give *one* reason for this. 2
24. Give *two* points which will help in preventing soil erosion in the hills of Manipur. 2

Answer Question Nos. 25 to 31 in about 50 words each.

25. Differentiate between tension joints and shear joints by giving *two* points. 3
26. Give a short answer on *any two* principles of stratigraphy. 3
27. Explain briefly the lithology and structure of Dharwar systems in Mysore. 3

28. Analyse between the two-fold and three fold classifications of Gondwana super group. 3
29. Explain how intrusive and extrusive rocks are formed from magma. 3
30. Which topographic features may be recognised as ideal site for constructing dam? 3
31. Distinguish between an aquifer and an aquiclude with examples. 3

Answer Question Nos. 32 to 34 in 150 - 200 words each.

32. Identify 'Unconformity' and explain *any one* type of unconformity with diagram. 5
33. Explain the stratigraphic sequence of Tertiary system in Assam. 5

Or

Explain the stratigraphic sequence of Gondwana system.

34. Describe mineralogy, texture, structure and mode of occurrence of granite. 5