

2022

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. In a fault the horizontal displacement is known as – 1
 - (A) Hade
 - (B) Throw
 - (C) Heave
 - (D) Rake

2. The 'Group' in lithostratigraphic unit which has corresponding chronostratigraphic unit – 1
 - (A) System
 - (B) Series
 - (C) Period
 - (D) Formation

P.T.O.

3. Gravel is sedimentary particle ranging grain size – 1
- (A) 0.0625mm – 2 mm
 - (B) 2mm – 4 mm
 - (C) 4 mm – 64 mm
 - (D) more than 64 mm
4. A very good aquifer is – 1
- (A) Sandstone
 - (B) Limestone
 - (C) Basalt
 - (D) Slate

Answers Question Nos. 5 –14 in one word or one sentence each :

5. Fill in the blank :
- The imaginary plane or surface which divides a fold into two equal halves is called _____ . 1
6. Name the type of force responsible for the formation of folds. 1
7. Write the type of rocks which constitute the Archean Formations. 1
8. Arrange the Epochs in the Tertiary period. 1
9. Mention the name of parent rock and type of metamorphism of marble. 1
10. Arrange the following in order of decreasing P.C. of SiO₂ – 1
Dunite, granite, diorite, basalt.
11. Name one good building material found in Manipur. 1

12. Suggest one factor of causing soil erosion in the hills of Manipur. 1
13. Give one reason why earth dams are constructed at broad river valleys. 1
14. Name one method of prospecting for chromite ore. 1

Answers Question Nos. 15 to 24 in about 30 words each :

15. Define 'dip' and 'strike' of a bed. 2
16. Distinguish between a normal fault and a reverse fault in at least two (2) points. 2
17. Draw a neat labelled diagram to show a columnar joint and explain how it is formed. 2
18. Define "Law of Superposition". 2
19. Give one reason why lithological correlation of beds are not reliable. 2
20. Plot the distribution of Archeans and Tertiary formation in an outlined map of India. 2
21. Write short notes on vesicular structure. 2
22. Write any two (2) distinguishing properties each of igneous rocks and sedimentary rocks. 2
23. What are the highest and lowest grades of metamorphic rocks when shale is subjected to regional metamorphoism ? 2
24. Select any two (2) important properties of granite which render it a good building stone. 2

Answers Question Nos. 25 to 31 in about 50 words each :

25. Distinguish between a 'dome' and a 'basin'. 3

26. Explain in brief how drag folds are developed within the body of incompetent beds due to folding. 3
27. Explain the importance of index fossils. 3
28. Analyse the distinctive lithological and structural characteristics of Dharwar system. 3
29. Write short notes on graded bedding. 3
30. Explain the formation of porphyritic texture in granite. 3
31. Explain how landslide takes place in the hill areas of Manipur. 3

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

32. Describe the distribution, lithology and classification of Gondwana system. 5

OR

Describe the distribution, lithology and classification of Vindhyan system of Sone valley. 5

33. Explain the mineralogy, texture, structure and mode of occurrence of gabbro. 5

OR

Explain the mineralogy, texture, structure and mode of occurrence of Sandstone. 5

34. Name the geophysical methods of prospecting and write for one which is considered widely used. 5