

2023

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 total displacement measured along the fault plane is called – 1
(A) Heave
(B) Net slip
(C) Dip slip
(D) Strike slip

2. The oldest period in the following is – 1
(A) Cambrian
(B) Permian
(C) Silurian
(D) Carboniferous

P.T.O.

3. The one important essential mineral in granite is –

1

(A) Orthoclase

(B) Biotite

(C) Plagioclase

(D) Muscovite

4. The best construction material in the following is –

1

(A) Basalt

(B) Sandstone

(C) Conglomerate

(D) Quartzite

Answer Question Nos. 5 to 14 in one word or one sentence each.

5. An upfold where the beds dip radially outward in all directions from the centre is called _____ .

1

6. Name the fault which strike approximately parallel to the dip direction of beds.

1

7. Mention one evidence which is associated with fault plane.

1

8. Indicate the name of the joint which runs oblique to the dip and strike directions.

1

9. Write the geological time units from the smallest to the greatest.

1

10. Those fossils which have short time range of their existence and wide geological distribution is called _____ . 1
11. Mention any two oxides which are abundant in granite. 1
12. Draw a simple diagram to indicate a dyke. 1
13. Mention one ore formed by sublimation process. 1
14. Indicate any good aquifer found in Manipur. 1

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

15. Find the strike direction for true dip direction of $N 20^\circ E$. 2
16. Write short notes on 'period' in geological time scale. 2
17. Explain the lithology of the Vindhyan Group. 2
18. Draw a sketch map of India indicating the Physiographic Divisions of India. 2
19. Write short notes on 'gneiss'. 2
20. Explain briefly the formation of current bedding. 2
21. Distinguish between poikilitic and porphyritic textures. 2
22. Give short note on 'ore'. 2
23. Explain briefly any one factor which causes landslides in hill areas of the state. 2
24. Explain under what geological conditions an artesian well can be created for source of water. 2

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

25. Distinguish between a 'Normal fault' and a "Reverse fault" with the help of neat sketches. 3
26. Explain lithology and structure of Archean rocks. 3
27. Why strata dipping upstream are favourable for foundation of dam? 3
28. Write note on "ripple marks". 3
29. Explain the formation of amygdaloidal structure in the basaltic igneous rocks. 3
30. Explain the 'schistose structure'. 3
31. Explain the 'porphyritic texture'. 3

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

32. Define 'Unconformity' and explain any two types of unconformity. 5

OR

Define a 'fold' and explain any two types of it. 5

33. Describe the geological succession of the Tertiaries of North East India. 5
34. Write the mineralogy, texture, structure and mode of occurrence of limestone. 5

OR

Write the mineralogy, texture, structure and mode of occurrence of granite. 5