

2025

## 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 for Question Nos. 1 to 7 from the given alternatives A, B, C & D and rewrite it.**

1 The imaginary line joining equal altitude or height of any place is known as \_\_\_\_\_ 1

(A) bedding line

(B) isoseismal line

(C) contour line

(D) strike line

2 The sedimentary formations of Indian Extra-Peninsula range in age from Cambrian to \_\_\_\_\_ Epoch. 1

(A) Palaeocene

(B) Eocene

(C) Miocene

(D) Pleistocene

3. The Jurassic Period is younger than \_\_\_\_\_ period. 1

(A) Palaeogene

(B) Neogene

(C) Triassic

(D) Cretaceous

P.T.O.

4. A rock is an aggregate of one or more \_\_\_\_\_. 1  
 (A) soil (B) mineral  
 (C) stone (D) all of the above
5. \_\_\_\_\_ is an example of basic intrusive igneous rock. 1  
 (A) Gabbro (B) Basalt  
 (C) Granite (D) Diorite
6. \_\_\_\_\_ should be constructed if the foundation materials are very strong. 1  
 (A) Arch dam (B) Buttress dam  
 (C) Gravity dam (D) Earth dam
7. Chromite deposits of Manipur is an example of \_\_\_\_\_ deposit. 1  
 (A) Magmatic concentration (B) Cavity filling  
 (C) Sedimentary mineral (D) Contact metasomatic

***Answer Question Nos. 8 to 17 in one word or one sentence.***

8. Define joint. 1
9. What is the relationship of strike and direction of dip in an inclined bed? 1
10. Name the unconformity which lie below the pre-Cambrian rocks. 1
11. Name the parent rocks of the marble and quartzite. 1
12. Give the similarities between dolerite and basalt. 1
13. Name a rock which is easily found and commonly used as building stone in Manipur. 1
14. Why narrow river channel is more suitable than broad river channel for selection of dam site? 1



15. What will happen when open cut mines are excavated within the unconsolidated rock? 1

16. Draw and label a neat and clean diagram of a delta structure. 1

17. Which prevention should be taken up to control moisture content in unconsolidated hill slopes? 1

**Answer Question Nos. 18 to 27 in about 30 words each.**

18. What are footwall and hanging wall in a fault? 2

19. What characteristics should a 'formation' possess? 2

20. Suggest the conditions which can show glacial origin in the bottommost horizon of gondwana sequence. 2

21. "Present is key to the past" 2

Interpret the above statement.

22. Distinguish between extrusive and intrusive igneous rocks. 2

23. Magma containing more than 66% of silica formed igneous rocks below the Earth's crust. What type of rocks will be formed and name textures produced in the rocks. 2

24. Write the essential steps/conditions which should be taken up while constructing a dam. 2

25. When Granite and limestone are exposed in a spot, which rock will be preferred as constructional material and why? 2

26. Suggest preventive measures that may be taken up to prevent soil erosion. 2

27. Draw a neat and clean diagram of fold and label the parts. 2

**Answer Question Nos. 28 to 33 in about 50 words each.**

28. Describe briefly the scope of structural geology. 3

*Or*

Explain briefly the significances of 'unconformities'.

29. Distinguish between Disang and Barail Groups of Manipur. 3

*Or*

Classify Gondwana system into 3 fold divisions and write the successions.

30. The rocks of Extra-Peninsula India have very complicated structure. Why? Give reasons. 3

*Or*

Peninsular India is regarded as a very stable landmass. Why? Give reasons.

31. Describe briefly how Retrograde Metamorphism is involved in rocks. 3

*Or*

Explain how clastic textures are formed in sedimentary rocks.

32. Classify sedimentary rocks on the basis of grain size of sediments and explain them briefly. 3

*Or*

Differentiate between sandstone and limestone.

33. Justify the fact that "Gossan" is the indicator of mineral deposits. 3

*Or*



The high grade bauxite deposits in the high Himalayan region is not considered as 'ore' mineral at present. Why? Give reasons.

***Answer Question Nos. 34 to 36 in about 150 words each.***

34. Classify 'fold' on the basis of symmetry of fold and explain any four of them. 5

***Or***

Classify 'unconformities' and explain any two of them.

35. Explain the stratigraphic succession of Tertiary system of Assam. 5

***Or***

Explain the stratigraphic succession of Cuddapah of Andhra Pradesh.

36. Describe mineralogical composition, texture, structure and mode of occurrence of granite. 5

***Or***

Describe mineralogical composition, texture, structure and mode of occurrence of diorite.

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