

2024

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. Younger rock bed will always be found in the direction of – 1
(A) strike
(B) dip
(C) either dip or strike
(D) apparent dip
2. Number of beds having more or less similar characteristics is known as – 1
(A) Super group
(B) Group
(C) Period
(D) Formation

P.T.O.

3. Which is the youngest Era in the Geological time scale ? 1
(A) Mesozoic
(B) Cenozoic
(C) Pre – Cambrian
(D) Palaeozoic
4. Marble is the recrystallization product of – 1
(A) shale
(B) sandstone
(C) basalt
(D) limestone
5. The main difference between dolerite and basalt is in respect of – 1
(A) colour
(B) mineralogical composition
(C) grain size
(D) both mineralogical composition and grain size
6. Which of the following rocks is commonly used as building stone in Manipur ? 1
(A) Granite
(B) Limestone
(C) Basalt
(D) Sandstone
7. Gravity dam is most suitable when the foundation is – 1
(A) weak
(B) strong
(C) with heavy overburden
(D) rocky but cracked

Answer question nos. 8 to 17 in one word or one sentence each.

8. Which surface feature / hill slope is indicated by very close spaced contour lines? 1
9. Identify the structure which is present when there is no deposition for a geological time interval within the rock sequences / formations. 1
10. Name the oldest and youngest periods of the Palaeozoic Era. 1
11. What feature suggest that the basal bed of Lower Gondwana formation is glacial origin? 1
12. Which series overlain the Dibang Series? 1
13. What are the essential minerals of diorite? 1
14. Classify the rocks on the basis of their modes of formation and occurrence. 1
15. Give the similarities between Granite and Pegmatite. 1
16. Which sedimentary structure is formed when some rock beds are slightly oblique to the major bedding plane? 1
17. How does pellicular water differ from vadose water? 1

Answer question nos. 18 to 27 in about 30 words each.

18. Define dip and strike of an inclined bed. 2
19. How is "Joint" formed in the crustal rocks? 2
20. State the "Law of order of superposition" in stratigraphy. 2
21. If geologist did not frame the "Geological Time Scale" what problems may be faced by geologists? 2

22. Write a short on "Ripple - marks". 2
23. Differentiate between clastic and non-clastic texture of sedimentary rocks. 2
24. Analyse how the sedimentary structure "tracks and trails" is formed. 2
25. Define gangue minerals with examples. 2
26. Differentiate between an aquifer and an aquifuge. 2
27. Why is narrow channel more suitable than broad river channel while constructing a dam? Give reasons. 2

Answer question nos. 28 to 33 in about 50 words each.

28. - Distinguish between Lower Gondwana and Upper Gondwana subdivisions of Gondwana Group. 3

OR

Describe the extension of tripartite physiographic division of India. 3

29. Why is Peninsular India regarded as a very stable landmass? 3

OR

Explain why faunal correlation is more reliable than lithological correlations. 3

30. Identify the agents which are responsible for bringing about metamorphism of rocks. Explain any one of them. 3

OR

Explain how amygdaloidal structure is formed? 3

31. Differentiate between Early and Late Magmatic mineral deposits. 3

OR

Describe briefly the factors that cause landslide in hill areas of Manipur. 3

32. Suggest measures that can be taken up for conservation of soil erosion. 3

OR

Illustrate three points each of causing soil erosion in the hills of Manipur. 3

33. Draw and label a neat and clean diagram of an overturned Recumbent fold. 3

OR

Draw and label a neat and clean diagram of Normal Reverse faults. 3

Answer question nos. 34 to 36 in about 150 – 200 words each.

34. Classify 'faults' on the basis of genetic classification and explain any two of them. 5

OR

Classify 'joint' on the basis of mode of origin and explain any two of them. 5

35. Describe the geological succession of Dhawar system of Mysore. 5

OR

Describe the geological succession of Vindhyan system of Sone valley. 5

36. Describe the mineralogy, texture, structure and mode of occurrence of Gabbro or Marble. 5