

2019

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 .

Answer Question Nos. 1 to 4 by selecting the most appropriate answer from the following alternatives given as A, B, C, and D for each question and rewrite it.

1. When strike of an inclined bed is $N10^{\circ}E - S 10^{\circ}W$, the possible dip direction will be 1
 - A. $S 80^{\circ}E$
 - B. $S 40^{\circ}W$
 - C. $N 10^{\circ}W$
 - D. $N 80^{\circ}E$

2. The longest time duration in the following Era is 1
 - A. Mesozoic
 - B. Cenozoic
 - C. Palaeozoic
 - D. Pre-cambrian

3. The volcanic equivalent of gabbro is 1
- A. Andesite
 - B. Rhyolite
 - C. Basalt
 - D. Trachyte

4. A good example of aquiclude is 1
- A. Sandstone
 - B. Siltstone
 - C. Limestone
 - D. Shale

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

5. Mention the name of the fold which shows angular or sharp troughs and crests. 1
6. Identify the structure which dips inward towards the centre. 1
7. Indicate the positions of coarse and fine grains in a graded bedding. 1
8. Mention the name of the low angle thrust fault in which displacement is large. 1
9. Give the names of any two states in NE India where Archaean rocks are found. 1
10. Give one basis of classifying Gondwana into two divisions - Lower and Upper Gondwana. 1
11. Mention the name of the parent rock of slate before it becomes a metamorphic rock. 1

12. Identify the name of the coarse grains which form the big grains in a porphyritic texture. 1
13. Name one characteristic property of rock which helps in the selection of a good building stone. 1
14. Identify the type of rock which is commonly associated in landslides in Manipur state. 1

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

15. Write short answer on 'overturned fold'. 2
16. Draw a neat and labelled diagram of a 'reverse fault'. 2
17. Distinguish between a stage and a zone in stratigraphy. 2
18. Identify one striking characteristics each of Barail and Tipam series. 2
19. Point out any two important conditions under which an organism can be preserved as fossil. 2
20. Select the two essential minerals which are present both in basalt and gabbro. 2
21. Give one point of similarity and dissimilarity between limestone and shale. 2
22. Draw a neat labelled diagram of ripple marks. 2
23. Give one reason why a dam constructed on rocks dipping downstream is not safe. 2
24. Identify the type of rock and role play by it in causing soil erosion in the hills of Manipur. 2

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

25. Write short answer on anticlinorium and add one diagram to illustrate it. 3

26. Explain briefly slicken sides as an evidence of fault plane. 3
27. Describe briefly on the lithology and structure of Vindhyan super group. 3
28. Why is lithological correlation of strata not reliable ? 3
29. Write short answer on metamorphic zones. 3
30. Differentiate between vesicular structure and amygdaloidal structure . 3
31. Explain the consequences of constructing dam on soluble rocks like limestone, etc. 3

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

32. Write the different physiographic divisions of India and describe briefly on any one of them which you know best. 5
33. Give the simple classification of igneous rock in tabular form. 5

Or

Give the simple classification of sedimentary rocks on the basis of their composition.

34. Define landslide and describe any two preventive measures of it. 5