2021

GEOLOGY

(Theory)

Full Marks : 70

Pass Marks : 21

Time : Three hours

All the questions are compulsory.

The figures in the right margin indicate full marks for the questions.

Answer Question Nos. 1 to 4 by choosing the correct one from the four alternatives given as A, B, C and D.

1. Match the items in column A with appropriate items in column B. 1

	Column A		Column B
A.	Mechanical Weathering	(a)	Leaching
B.	Weathering	(b)	Frost action
C.	Biological Weathering	(c)	Soil formation
D.	Chemical Weathering	(d)	Humus

Choose the most appropriate answer of the following :

2. Galena crystallises in the crystal system – 1

A. Cubic

B. Hexagonal

C. Tetragonal

D. None of the above

3. Pelecypod belongs to the phyllum – 1

A. Mollusca

B. Brachiopoda

C. Arthropoda

D. Echinoidea

4. The least tenor is found in – 1

A. Tin

B. Gold

C. Iron

D. Chromite

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

5. State the average density of the earth. 1

6. Predict the type of weathering that causes cracks in brick walls, buildings, etc. 1

7. Name a mineral having three sets of perfect cleavage. 1

8. Identify a mineral showing conchoidal fracture. 1

9. Indicate the general symbol representing the octahedron form in cubic system. 1

10. Complete the following sentence. 1

It is an open form of _____ faces, each face is parallel to the vertical axis and intersect all the two horizontal axes so that this form is called _____ .

11. Identify a mineral which shows well developed bladed habit form. 1

12. Which of the following is a brachiopod ? 1

A. Calymene

B. Cardita

C. Productus

D. Pecten

13. Rewrite correctly the following :

Brachiopods have two equal but equilateral valves known as right and left valves. 1

14. Identify one common gangue mineral associated with sulphide minerals. 1

Answer Question Nos. ***15*** *to* ***24*** *in about* ***30 – 40*** *words each.*

15. Define 'earthquake'. 2

16. Write short notes on 'Spheroidal Weathering'. 2

17. State in brief the different gaseous products of volcano. 2

18. Define the term 'crystal'. 2

19. Write short notes on the specific gravity of a substance. 2

20. Derive Miller Indices from the following Weiss symbols. 2

(i) a, α, 2c

(ii) a, 2b, 3e

21. Define 'Index fossil'. 2

22. Write short notes on 'petrification' process of fossilisation. 2

23. Draw and label the external morphology of brachiopod shell. 2

24. Define 'ore'. 2

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

25. Explain the 'curst' of the earth as revealed by earthquake waves. 3

OR

Explain the 'core' of the earth as revealed by earthquake waves. 3

26. Show how magnitude scale of earthquake in Richter Scale is measure. 3

OR

Show how the intensity of eartyhquake in Intensity scale is measured. 3

27. Write the 'interfacial angle'. 3

28. Define trace fossil, and mention any two essential conditions for preservation of organisms as fossils. 3

29. Assess the difference between 'mould' and 'cast' as found in fossils. 3

OR

Assess the difference between the shells of brachiopod and lamellibranchia shells in three points. 3

30. Write the processes in early magmatic mineral deposits. 3

OR

Write the processes in late magmatic mineral deposits. 3

31. Give a classification of mineral deposits. 3

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

32. Elucidate the symmetry elements of the Normal Class of Tetragonal System and explain any 3 forms developed in it. 5

33. Illustrate the morphological characters of Brachiopod shell. 5

34. Write the origin, mode of occurrence, geographical distribution and uses of gold. 5

OR

Write the origin, mode of occurrence, geographical distribution and uses of coal. 5
