

Code No.

**N – 3578**

## Entrance Examination for Admission to the P.G. Courses in the Teaching Departments, 2022

### CSS GEOLOGY

#### General Instructions

1. The Question Paper is having two Parts — Part 'A' Objective type (60%) & Part 'B' Descriptive type (40%).
2. Objective type questions which carry 1 mark each are to be (✓) 'tick marked' in the response sheets against the appropriate answers provided.
3. 8 questions are to be answered out of 12 questions carrying 5 marks each in Part 'B'.
4. **Negative marking** : 0.25 marks will be deducted for each wrong answer in Part 'A'.

**Time : 2 Hours****Max. Marks : 100**

To be filled in by the Candidate									
Register Number	in Figures								
	in words								

### PART – A (Objective Type)

Choose appropriate answer from the options in the questions. **One mark each.**

**(60 × 1 = 60 marks)**

1. A coarse grained rock mainly composed of orthopyroxene and plagioclase is called as
 

a) Norite

c) Lherzolite

b) Gabbro

d) Harzburgite

DO NOT WRITE HERE

- 
2. Which of the following is a concordant intrusive body?
- |               |              |
|---------------|--------------|
| a) Cone sheet | b) Ring dike |
| c) Stock      | d) Lopolith  |
3. When a single pyroxene envelops several well-developed plagioclase laths, the texture is called as
- |                    |                 |
|--------------------|-----------------|
| a) Ophitic texture | b) Poikiloblast |
| c) Porphyroblast   | d) Granoblast   |

4. Pyroclastic deposits are usually found associated with
- a) Explosive volcano
  - b) Shield volcano
  - c) Pahoehoe flow
  - d) Ropy lava
5. Grains that crystallize to a significantly larger size than those of the matrix, in an igneous rocks are called
- a) Phenocryst
  - b) Porphyroblast
  - c) Xenocryst
  - d) Relic inclusion
6. Slices of oceanic crust that have been emplaced (obducted) onto continental crust
- a) Mylonite
  - b) Migmatite
  - c) Ophiolite
  - d) Granulite
7. Outer core is liquid while the inner core is solid because
- a) Outer core is heated more than the inner core
  - b) Melting point of material in outer core is less than the ambient temperature while it is more for the material in inner core due to higher pressure
  - c) Outer core is in contact with liquid mantle
  - d) Inner core enriched in iron and nickel compared to outer core
8. Earth's crust consists of continental and oceanic parts. Which of the following statement is not true
- a) Oceanic crust has global layering while continental crust doesn't
  - b) Oceanic crust is thinner compared to continental crust
  - c) Oceanic crust is younger than continental crust
  - d) Oceanic crust is more metamorphosed compared to continental crust
9. Which of the following regions would have thicker crust
- a) Orogenic belt
  - b) Mid Oceanic ridge
  - c) Precambrian Shield
  - d) Island arc

10. Continental crust is higher in elevation than oceanic crust because
- a) It is more buoyant than oceanic crust
  - b) It is older than oceanic crust
  - c) It is younger than oceanic crust
  - d) It is denser than oceanic crust
11. The average thickness of a lithospheric plate is approximately
- a) 35 km
  - b) 8 km
  - c) 5 km
  - d) 100 km
12. A crystal appears unchanged when rotated  $180^\circ$ . Such an axis of rotation is axis of
- a) 1-fold symmetry
  - b) 2-fold symmetry
  - c) 3-fold symmetry
  - d) 4-fold symmetry
13. In a crystal 4 non-parallel faces intersect in a point. Form of these faces is
- a) Prism
  - b) Pinacoid
  - c) Pyramid
  - d) Dome
14. Structurally quartz is a
- a) Framework silicate
  - b) Ring silicate
  - c) Chain silicate
  - d) Isolated silicate
15. A mineral is scratchable by quartz but not by apatite. Hardness of this mineral on Mohs scale is
- a) Less than apatite
  - b) less than 7
  - c) more than 7
  - d) less than 5
16. Which of the following mineral is a chain silicate
- a) Augite
  - b) Biotite
  - c) Anorthite
  - d) Olivine

17. Which of the following is a K-feldspar
- a) Oligoclase
  - b) Orthoclase
  - c) Andesine
  - d) Anorthite
18. Which one of the following minerals crystallize in the Orthorhombic system?
- a) Calcite
  - b) Barite
  - c) Siderite
  - d) Dolomite
19. Which one of the following minerals crystallize in cubic system?
- a) Spinel
  - b) Siderite
  - c) Hematite
  - d) Corundum
20. Which one of the following mineral belongs to spinel group?
- a) Zircon
  - b) Ilmenite
  - c) Hematite
  - d) Magnetite
21. Which one of the following is an open form?
- a) Prism
  - b) Octahedron
  - c) Tetrahedron
  - d) Pyramid
22. Which one of the following is permitted in the Miller's indices?
- a) Zero
  - b) Infinity
  - c) Real numbers
  - d) Fractions
23. A Pyroxine mineral having equal amount of CaO and FeO molecules is known as
- a) Hedenbergite
  - b) Pigeonite
  - c) Bronzite
  - d) Diopside
24. Plagioclase having 30 to 50% anorthite content is known as
- a) Anorthoclase
  - b) Andesine
  - c) Oligoclase
  - d) Labradorite

25. Which one of the following statements about Andalusite, Kyanite and Sillimanite is WRONG?
- a) They have same chemical formula
  - b) Commonly one of them is present in metamorphosed pelitic rocks
  - c) If all the three are present the pressure and temperature conditions can be determined.
  - d) They have same crystal structure
26. The major minerals present in granite are
- a) Orthoclase, oligoclase, quartz
  - b) Orthoclase, quartz, hornblende
  - c) Orthoclase, quartz, muscovite
  - d) Orthoclase, quartz, biotite
27. Volcanic equivalent of the plutonic rock granodiorite is
- a) Rhyolite
  - b) Trachyte
  - c) Dacite
  - d) Andesite
28. Komatites are typically found in
- a) Archean greenstone belts
  - b) Proterozoic mobile belts
  - c) Proterozoic sedimentary basins
  - d) Tertiary volcanic provinces
29. Predominant magma that erupted during the Deccan Volcanism is
- a) Alkali basalt
  - b) Tholeiitic basalt
  - c) Andesite
  - d) Trachyte
30. A fold which is concave upward is called as
- a) Synform
  - b) Antiform
  - c) Syncline
  - d) Anticline
31. A fold in which younging direction is away from the fold core is called
- a) Synform
  - b) Antiform
  - c) Syncline
  - d) Anticline

32. Fold with alternate sharp and broad hinges is called
- Chevron fold
  - Cuspate fold
  - Box fold
  - Concentric fold
33. Metamorphic grade refers to
- Particular rock type
  - Intensity of metamorphism
  - Texture and structure of the rock types
  - Critical mineral assemblages
34. Which of the following metamorphic facies is characterized by maximum temperature and minimum pressure?
- Blueschist
  - Greenschist
  - Hornblende-hornfels facies
  - Sanidinite facies
35. The mineral omphacite is characteristic of
- Greenschist facies
  - Granulite facies
  - Blueschist facies
  - Eclogite facies
36. In case of Barrovian metamorphism, the lowest grade of metamorphism is marked by the mineral
- Biotite
  - Garnet
  - Chlorite
  - Kyanite
37. Anhydrous rocks are characteristically present in rocks belonging to
- Eclogite facies
  - Greenschist facies
  - Amphibolite facies
  - Granulite facies
38. In the triangular ACF diagrams used to designate the mineralogical and chemical composition of metamorphic facies, the 'A' apex represent
- $\text{Al}_2\text{O}_3$
  - $\text{Al}_2\text{O}_3 + \text{Fe}_2\text{O}_3 - \text{Na}_2\text{O} - \text{K}_2\text{O}$
  - $\text{Al}_2\text{O}_3 + \text{Fe}_2\text{O}_3 - \text{K}_2\text{O}$
  - $\text{Al}_2\text{O}_3 + \text{Na}_2\text{O} + \text{K}_2\text{O}$

39. Which of the following sedimentary rocks is always formed in marine environment?
- a) Sandstone
  - b) Siltstone
  - c) Limestone
  - d) Shale
40. If an aggregate of sediment consists of particles that are all about the same size, it is said to be
- a) Well sorted
  - b) Sandstone
  - c) Poorly rounded
  - d) Lithified
41. Which of the following can be used to determine paleocurrent direction?
- a) Mud cracks
  - b) Turbidity currents
  - c) Graded bedding
  - d) Cross-bedding
42. Mud cracks are most likely to form by
- a) Rapidly changing patterns of erosion and deposition
  - b) Gently oscillating waves
  - c) Periodic exposure to the air and drying out
  - d) Fast-moving water that gradually slowed down
43. Which of the following environments can produce cross beds?
- a) Sand dunes
  - b) River Deltas
  - c) Alluvial fans
  - d) All the above
44. The dry lake beds in deserts are called
- a) Playas
  - b) Pediments
  - c) Bajadas
  - d) Inselbergs
45. What is the age of Muth quartzite?
- a) Ordovician
  - b) Silurian
  - c) Devonian
  - d) Carboniferous

46. Dinosaurs are reported from the rocks of
- a) Paleozoic
  - b) Mesozoic
  - c) Tertiary
  - d) Quaternary
47. One of the following is the rarest metal in the earth crust.
- a) Gold
  - b) Platinum
  - c) Rhenium
  - d) Niobium
48. Wall rock alteration is a characteristic feature of
- a) Magmatic deposits
  - b) Hydrothermal deposits
  - c) Metamorphic deposits
  - d) Volcano-sedimentary deposits
49. One of the following is an ore mineral of copper.
- a) Bornite
  - b) Braunite
  - c) Bixbyite
  - d) Boehmite
50. Talc deposit can be formed by metasomatism of one of the following rocks.
- a) Limestone
  - b) Shale
  - c) Peridotite
  - d) Granite
51. Ruby is a gem variety of
- a) Corundum
  - b) Adularia
  - c) Garnet
  - d) Topaz
52. One of the following sulphide minerals can be translucent or transparent.
- a) Pyrite
  - b) Chalcopyrite
  - c) Sphalerite
  - d) Galena
53. One of the following oxide minerals can be translucent or transparent.
- a) Chromite
  - b) Pyrolusite
  - c) Wolframite
  - d) Cassiterite

54. Emerald is a gem variety of
- a) Topaz
  - b) Beryl
  - c) Tourmaline
  - d) Zircon
55. Which one of the following pairs of minerals is NOT dimorphic?
- a) Graphite-diamond
  - b) Calcite-aragonite
  - c) Magnetite-hematite
  - d) Kyanite-sillimanite
56. Contact metasomatic deposits are more common in
- a) Shale
  - b) Greywacke
  - c) Sandstone
  - d) Limestone
57. The largest zinc deposit in India is located at
- a) Zawar, Rajasthan
  - b) Agucha, Rajasthan
  - c) Agnigundla, Andhra Pradesh
  - d) Sargipalle, Orissa
58. The largest bauxite mines in India is located at
- a) Panchpatmali, Orissa
  - b) Korba, Madhya Pradesh
  - c) Yercaud, Tamil Nadu
  - d) Kolli Hills, Tamil Nadu
59. One of the following mineral deposits is NOT known from Kerala.
- a) Gold
  - b) Banded iron formation
  - c) Diamond
  - d) Graphite
60. One of the following economic minerals is NOT produced from beach placer at Chavara
- a) Ilmenite
  - b) Monazite
  - c) Hematite
  - d) Zircon

# ANSWER SHEET — PART – A

1	A	B	C	D	E
2	A	B	C	D	E
3	A	B	C	D	E
4	A	B	C	D	E
5	A	B	C	D	E
6	A	B	C	D	E
7	A	B	C	D	E
8	A	B	C	D	E
9	A	B	C	D	E
10	A	B	C	D	E
11	A	B	C	D	E
12	A	B	C	D	E
13	A	B	C	D	E
14	A	B	C	D	E
15	A	B	C	D	E
16	A	B	C	D	E
17	A	B	C	D	E
18	A	B	C	D	E
19	A	B	C	D	E
20	A	B	C	D	E

21	A	B	C	D	E
22	A	B	C	D	E
23	A	B	C	D	E
24	A	B	C	D	E
25	A	B	C	D	E
26	A	B	C	D	E
27	A	B	C	D	E
28	A	B	C	D	E
29	A	B	C	D	E
30	A	B	C	D	E
31	A	B	C	D	E
32	A	B	C	D	E
33	A	B	C	D	E
34	A	B	C	D	E
35	A	B	C	D	E
36	A	B	C	D	E
37	A	B	C	D	E
38	A	B	C	D	E
39	A	B	C	D	E
40	A	B	C	D	E

41	A	B	C	D	E
42	A	B	C	D	E
43	A	B	C	D	E
44	A	B	C	D	E
45	A	B	C	D	E
46	A	B	C	D	E
47	A	B	C	D	E
48	A	B	C	D	E
49	A	B	C	D	E
50	A	B	C	D	E
51	A	B	C	D	E
52	A	B	C	D	E
53	A	B	C	D	E
54	A	B	C	D	E
55	A	B	C	D	E
56	A	B	C	D	E
57	A	B	C	D	E
58	A	B	C	D	E
59	A	B	C	D	E
60	A	B	C	D	E



## **GEOLOGY**

### **PART – B**

(Descriptive Type)

Answer **any eight** questions. Each carries **Five** marks.

**(8 × 5 = 40 Marks)**

1. Understanding the interior of the Earth from meteorites.
2. Sea floor spreading.
3. Optic sign of uniaxial minerals.
4. Garnet group of minerals.
5. Deformation structures in rocks.
6. Unconformity.
7. Index fossils.
8. Stratigraphic nomenclature.
9. Kimberlite.
10. Carbonate rocks.
11. Kerala khondalite belt.
12. Lateritic bauxite deposit.





















