

# COMMON P. G. ENTRANCE TEST – 2024 (CPET-2024)

Test Booklet No. : 00738

Subject Code : 14

Hall Ticket No. :

Subject : GEOLOGY

## TEST BOOKLET

Time Allowed : 60 Minutes

Full Marks : 80

### : INSTRUCTIONS TO CANDIDATES :

1. The Test Booklet contains 15 pages including the cover page and 80 (Question Nos. 1 to 80) multiple choice questions.
2. DO NOT break open the seal of the Test Booklet until the invigilator instructs to do so.
3. The candidates must check discrepancy, if any (like up-printed or torn or missing pages or missing questions) in the Test Booklet immediately after breaking the seal of the Test Booklet. If detected, the invigilator may be requested to replace the same.
4. Candidates are required to fill up and darken the **Hall Ticket No., Test Booklet Serial No.** and OMR Answer Sheet Serial No. in attendance sheet carefully. Wrongly filled in OMR Answer Sheet is liable for rejection.
5. Each question has four choices / answers marked (A), (B), (C), (D). Candidate has to select the most appropriate choice / answer to each question and darken the oval completely against the question number provided in the OMR Answer Sheet.
6. Indicate only one choice / answer from the options provided by darkening the appropriate oval in the OMR Answer Sheet. More than one response to a question shall be treated as a wrong answer.
7. Use only **Black Ball Point Pen** for darkening the oval for answering.
8. All the questions are compulsory and they carry equal marks. The total marks scored by a candidate depends on the number of correct choices / answers darkened in the OMR Answer Sheet. There will be no negative marking for wrong answers.
9. No candidate shall be allowed to leave the Examination Hall / Room till all OMR Answer Sheets have been collected by the invigilator.
10. On completion of the entrance test, the original OMR Answer Sheet be handed over to the invigilator. Candidates are allowed to take the second copy of the OMR Answer Sheet along with the used Test Booklet for reference.
11. Candidates are not allowed to carry any personal belongings including electronic devices such as scientific calculator, cell phones, headphones, earbuds, or any other type of devices that allow communication of any kind inside the Examination Room / Hall.
12. The candidates are advised not to scribble or make any mark on the OMR Answer Sheet except marking the answers at the appropriate places and filling up the details required. Rough work, if any, may be done in the blank sheet(s) provided at the end of the Test Booklet.
13. Any malpractice / use of unfair means will lead to your disqualification from the entrance test / admission process and may also lead to appropriate legal action as deemed fit.

**DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE ASKED TO DO SO**

GO – 25/13

( Turn over )

SEAL



1. The boundary between the outer crust and inner crust is called :  
(A) Conrad discontinuity (B) Mohorovicic discontinuity  
(C) Gutenberg-Weichert discontinuity (D) Bullen discontinuity
2. The process of movement of sedimentary particles by alternate jumping and falling on the bottom surface is known as :  
(A) Traction (B) Suspension  
(C) Saltation (D) Deflation
3. Very large rock fragments transported and deposited by glaciers having composition quite different from that of the underlying bed rocks is known as :  
(A) Erratics (B) Moraine  
(C) Kames (D) Kettles
4. The most quiet form of lava eruption is called :  
(A) Vesuvian type (B) Pelean type  
(C) Strombolean type (D) Hawaiian type
5. The fine silt sized particles carried by wind are accumulated to form :  
(A) Dune (B) Loess  
(C) Ventifacts (D) Zeugen
6. In which of the following stages of a river Oxbow lakes are not formed ?  
(A) Mature stage (B) Youthful stage  
(C) Old stage (D) Lower valley course stage
7. The region of the sea floor extending from low tide mark upto a depth of about 200m, with a very low slope is called :  
(A) Continental shelf (B) Continental slope  
(C) Abyssal plain (D) Continental rise

8. Which one of the following minerals exhibits "pearly" lustre ?
- (A) Diamond (B) Biotite  
(C) Quartz (D) Apatite
9. The zones of large negative gravity anomaly with seismic and volcanic activity is found in the region of :
- (A) Mid-oceanic ridge (B) Craton  
(C) Island arc (D) Geosyncline
10. In a stereographic projection, the face with symbol (001) is plotted :
- (A) In the circumference  
(B) In the quadrants  
(C) At the centre  
(D) At the intersection of the axis with the circumference
11. Which one of the following is the streak of chalcopyrite ?
- (A) Golden yellow (B) Greenish black  
(C) White (D) Yellow
12. Which out of the following is the silicate structure of micas ?
- (A) Tectosilicate (B) Nesosilicate  
(C) Inosilicate (D) Phyllosilicate
13. Out of the following, which is the cleavage angle of pyroxenes ?
- (A)  $87^\circ$  and  $93^\circ$  (B)  $56^\circ$  and  $124^\circ$   
(C)  $60^\circ$  and  $120^\circ$  (D)  $75^\circ$  and  $105^\circ$
14. Which mineral out of the following does not have cleavages ?
- (A) Augite (B) Garnets  
(C) Hornblende (D) Biotite

15.  $(\text{Mg, Fe}) \text{SiO}_3$  is the chemical composition of :
- (A) Enstatite (B) Augite  
(C) Hypersthene (D) Diopside
16. Which mineral out of the following is crystallized in Orthorhombic system ?
- (A) Hornblende (B) Tremolite  
(C) Cummingtonite (D) Anthophyllite
17. Which mineral out of the following is polymorphous with Quartz ?
- (A) Orthoclase (B) Microcline  
(C) Tridymite (D) Garnet
18. The chemical composition of aragonite is :
- (A)  $\text{CaCO}_3$  (B)  $\text{MgCO}_3$   
(C)  $\text{BaCO}_3$  (D)  $\text{CaCO}_3 \cdot \text{MgCO}_3$
19. Which element out of the following is Lithophile ?
- (A) Silicon (B) Lead  
(C) Nitrogen (D) Iron
20. Which meteorites out of the following contain 50% metal and 50% silicate ?
- (A) Siderites (B) Siderolites  
(C) Aerolites (D) Tektites
21. An inverted bowl shaped form of igneous rock with a flat lower surface and a domal upper surface is known as :
- (A) Lopolith (B) Laccolith  
(C) Phacolith (D) Dyke

22. The igneous texture where large pyroxene grains completely enclose small sized plagioclase laths is called :
- (A) Porphyritic (B) Ophitic  
(C) Panidiomorphic (D) Allotriomorphic
23. Which mineral out of the following crystallized first in the discontinuous reaction series of basaltic magma ?
- (A) Calcic plagioclase (B) Olivine  
(C) Calcic pyroxene (D) Calc-alkali plagioclase
24. The monomineralic igneous rock containing only calcite as essential mineral is called :
- (A) Marble (B) Anorthosite  
(C) Peridotite (D) Carbonatite
25. Which rock out of the following has Labradorite and Augite as the essential minerals ?
- (A) Gabbro (B) Norite  
(C) Diorite (D) Syenite
26. Which one of the following is the size grade of a "pebble" ?
- (A)  $\frac{1}{16}$  to 2 mm (B) 4 to 64 mm  
(C) 2 to 4 mm (D) 64 to 256 mm
27. The sandstone containing more than 95% of quartz is known as :
- (A) Arkose (B) Graywacke  
(C) Quartz-arenite (D) Subarkose
28. Which out of the following is the specific gravity of heavy minerals ?
- (A) > 2.87 (B) < 2.42  
(C) 2.53 to 2.73 (D) < 2.53

29. The medium grade metamorphism takes place at temperature varying from :
- (A) 600 to 800°C (B) 400 to 600°C  
(C) 800 to 1000°C (D) 600 to 800°C
30. The equigranular texture of metamorphic rocks where the minerals are subhedral is known as :
- (A) Hypidioblastic (B) Idioblastic  
(C) Xenoblastic (D) Porphyroblastic
31. Which metamorphic rock out of the following contain omphacite and garnet ?
- (A) Charnockite (B) Khondalite  
(C) Ectogite (D) Calc-granulite
32. To which of the fossil groups, "Productus" belongs ?
- (A) Pelecypod (B) Gastropod  
(C) Cephalopod (D) Brachiopod
33. The dentition in pelecypods with two or three strong and equal sized teeth in each valve is known as :
- (A) Isodont (B) Dysodont  
(C) Taxodont (D) Desmodont
34. The earliest ancestors of the horse which is approximately 12" high is named as :
- (A) Eohippus (B) Pliohippus  
(C) Merichippus (D) Hipparian
35. Which one of the following suture lines in cephalopods, has sharply fluted saddles and lobes ?
- (A) Goniatic type (B) Ceratitic type  
(C) Ammonoid type (D) Nautiloid type

36. If the coiling in the gastropod shell are planispiral with all the whorls lying in one plane, the coiling is known as :
- (A) Turbinate (B) Conical  
(C) Turreted (D) Discoidal
37. Which one of the following is the largest Time-unit ?
- (A) Epoch (B) Age  
(C) Era (D) Period
38. Which of the following is the youngest formation of the Semri Group ?
- (A) Kajarahat Formation (B) Rohtas Formation  
(C) Porcellanite Formation (D) Khenjua Formation
39. Which Supergroup/Group lies above the "Peninsular Gneiss" ?
- (A) Aravalli Group (B) Amgaon Group  
(C) Dharwar Supergroup (D) Sargur Group
40. To which of the following Formations of Jurassic of Kuchchh "Macrocephalus Beds" belong ?
- (A) Chari Formation (B) Patcham Formation  
(C) Umsa Formation (D) Ketrol Formation
41. The true dip direction of a bed is  $N 60^{\circ} W$ . What will be the strike direction out of the following ?
- (A)  $N 60^{\circ} E - S 60^{\circ} W$  (B)  $N 30^{\circ} E - S 30^{\circ} W$   
(C)  $N 60^{\circ} W - S 60^{\circ} E$  (D)  $N - S$
42. A fold which is convex upwards with older beds lying in the core is known as :
- (A) Anticline (B) Syncline  
(C) Chevron fold (D) Box fold

43. Which out of the following is a fold with two limbs mutually parallel to each other and generally exhibits same amount and same direction of dip ?
- (A) Symmetrical fold (B) Isoclinal fold  
(C) Disharmonic fold (D) Box fold
44. The structure which is produced by uplift of a block bounded on both sides by two gravity faults dipping away from each other is known as :
- (A) Graben (B) Rift valley  
(C) Horst (D) Overthrust
45. When mineral deposits are concentrated as layers or bands within the parent magmatic body, it is known as :
- (A) Segregation (B) Dissemination  
(C) Fissure vein (D) Saddle reef
46.  $\text{PbSO}_4$  is the chemical composition of :
- (A) Galena (B) Cerussite  
(C) Anglesite (D) Smithsonite
47. Which place out of the following is famous for Kyanite deposits in India ?
- (A) Pullivendla (B) Kodarma  
(C) Salem (D) Lapsaburu
48. The Gonditic type of manganese deposits of Odisha are associated with rocks of :
- (A) Gangpur Group (B) Eastern Ghats Supergroup  
(C) Iron ore Group (D) Gondwana Supergroup
49. The permissible limit of pH for water for drinking purpose as per BIS (2012) is :
- (A) 7.0 to 9.0 (B) 6.5 to 9.5  
(C) 6.5 to 8.5 (D) 6.0 to 8.5

50. Which out of the following is the most adverse condition at a dam site ?
- (A) Beds dipping upstream at angles between  $10^\circ$  to  $30^\circ$
  - (B) Horizontal beds with compact rock at the top
  - (C) Beds dipping downstream at low angles between  $10^\circ$  to  $30^\circ$
  - (D) Beds dipping upstream at angles between  $30^\circ$  to  $60^\circ$
51. At what depth from the surface, the Gutenberg-Wiechert discontinuity occurs ?
- (A) 33 km
  - (B) 400 km
  - (C) 1000 km
  - (D) 2900 km
52. The S-seismic waves are not transmitted through the outer core. This means that the matter in the core behaves like a :
- (A) Hard Solid
  - (B) Rock
  - (C) Liquid
  - (D) Very hard solid
53. Which one of the following is not produced due to wind erosion ?
- (A) Pedestal rock
  - (B) Zengen
  - (C) Barchans
  - (D) Yardangs
54. Which out of the following is the general symbol of "Hexoctahedron" ?
- (A) (okl)
  - (B) (hkl)
  - (C) (hhl)
  - (D) (hll)
55. Which mineral out of the following has chemical composition of  $\text{Al}_2\text{SiO}_5$  ?
- (A) Hornblende
  - (B) Fluorite
  - (C) Kyanite
  - (D) Olivine
56. Which out of the following corresponds to the hardness of muscovite ?
- (A) 5 – 6
  - (B) 2 – 3
  - (C) 4 – 5
  - (D) 6 – 7

57. Chemical composition of corundum is :
- (A)  $\text{Al}_2\text{O}_3$  (B)  $\text{Fe}_2\text{O}_3$   
(C)  $\text{TiO}_2$  (D)  $\text{Mg}_2\text{SiO}_3$
58. Which system of crystallization out of the following have minerals exhibiting isotropism in general ?
- (A) Tetragonal (B) Orthorhombic  
(C) Isometric (D) Triclinic
59. In allotriomorphic texture of igneous rocks, the shape of the grains are usually :
- (A) Subhedral (B) Anhedral  
(C) Euhedral (D) Acicular
60. Which out of the following is a hypabyssal igneous rock with plagioclase and pyroxene as essential minerals ?
- (A) Dolerite (B) Gabbro  
(C) Syenite (D) Anorthosite
61. The essential mineral composition of charnockite is :
- (A) Quartz + Feldspars  
(B) Quartz + Feldspars + Micas  
(C) Quartz + Feldspars + Hypersthene  
(D) Quartz + Feldspars + Hornblende
62. Which fossil groups out of the following belong to Phylum "Arthropoda" ?
- (A) Brachiopods (B) Trilobites  
(C) Gastropods (D) Pelecypods
63. Which out of the following is the thickness of laminations of sedimentary rock ?
- (A) < 1 cm (B) < 1 m  
(C) < 1mm (D) > 1 cm

64. Which out of the following sedimentary rocks has very coarse grained (4 – 64 mm. diameter) angular clasts ?
- (A) Conglomerate (B) Sandstone  
(C) Breccia (D) Shale
65. To which of the following groups is the type area of the Cuddapahs, the Cumbum Formation belongs ?
- (A) Nallamallai Group (B) Papaghni Group  
(C) Kistna Group (D) Chitravati Group
66. The lower most formation of the Damuda Group of the Gondwanas is :
- (A) Barren Measwes Formation (B) Barakar Formation  
(C) Raniganj Formation (D) Karharbari Formation
67. In which of the following faults the hanging wall has gone down relative to the foot wall ?
- (A) Reverse fault (B) Normal fault  
(C) Strike-slip fault (D) Thrust fault
68. In which of the following unconformities, the older rocks below the unconformity surface are usually of plutonic igneous origin ?
- (A) Non-confirmity (B) Angular unconformity  
(C) Disconformity (D) Local unconformity
69. Darcy's law is utilized to find out :
- (A) Porosity (B) Specific yield  
(C) Coefficient of permeability (D) Specific retention
70. Which one of the following zones in the zone of aeration lies just above the zone of Saturation ?
- (A) Zone of gravity water (B) Zone of capillary water  
(C) Zone of soil water (D) Zone of internal water

71. Which rock out of the following has the maximum porosity value ?  
(A) Clay (B) Sand  
(C) Sandstone (D) Limestone
72. In which out of the following localities in India, important lignite deposits are found ?  
(A) Ib Valley (B) Raniganj  
(C) Jharia (D) Neyveli
73. In which out of the following conditions, horizontal tunnelling is safer ?  
(A) Tunnelling across a fault zone  
(B) Tunnelling below the water table  
(C) Tunnel running parallel to the bedding plane  
(D) Tunnel running perpendicular to strike of the beds
74. Which one of the following processes is responsible for formation of placer deposits ?  
(A) Mechanical concentration (B) Residual concentration  
(C) Magmatic concentration (D) Hydrothermal replacement
75. Which mineral out of the following is not an ore mineral of copper ?  
(A) Chalcopryrite (B) Malachite  
(C) Cerussite (D) Bornite
76. Which rock out the following is the host rock for bauxite deposits in "East Coast Bauxite" deposits ?  
(A) Granite (B) Khondalite  
(C) Quartzite (D) Shale
77. In which of the following areas, muscovite deposits are located ?  
(A) Kodarma (B) Pullivendla  
(C) Salem (D) Khetri

78. In the East Coast bauxite deposits, bauxite occurs as :

- (A) Ladder vein type
- (B) Blanket type
- (C) Banded
- (D) Disseminated

79. In which of the following states, tertiary coal deposits are located ?

- (A) Meghalaya
- (B) Odisha
- (C) Jharkhand
- (D) West Bengal

80. Which of the following minerals has chemical composition  $\text{MnO}_2$  ?

- (A) Braunite
- (B) Psilomelane
- (C) Pyrolusite
- (D) Rhodochrosite



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**SPACE FOR ROUGH WORK**

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Geology

(13)

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