

COMMON P. G. ENTRANCE TEST – 2023 (CPET-2023)

Test Booklet No. :

729

Subject Code : **16**

Hall Ticket No. :

Subject : **GEOLOGY**

TEST BOOKLET

Time Allowed : **60 Minutes**

Full Marks : **80**

: INSTRUCTIONS TO CANDIDATES :

1. The Test Booklet contains **16** pages including the cover page and **80** (Question No. 1 to 80) multiple choice questions.
2. DO NOT break 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, ear buds, 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

PN – 16/18

(Turn over)

SEAL

1. A crystal face has intercepts of $0.5a$, $0.5b$, $0.5c$. The Miller indices of face is :

(A) 112	(B) 211
(C) 222	(D) 111

2. Which of the following is the general form of tetragonal system ?

(A) Ditetragonal biprism	(B) Ditetragonal bipyramid
(C) Hexoctahedron	(D) Basal pinacoid

3. Gypsum type crystals may be designated as having :

(A) 1 plane, 1 axis and no centre	(B) 1 plane, 1 axis and a centre
(C) 3 planes, 5 axes and centre	(D) 5 planes, 5 axes and centre

4. Genuiculate twinning is found in :

(A) Rutile	(B) Gypsum
(C) Pyrite	(D) Staurolite

5. Which of the following minerals has bladed structure ?

(A) Kyanite	(B) Slate
(C) Gypsum	(D) Calcite

6. The chemical composition of pyrope is :

(A) $\text{Ca}_3\text{Al}_2\text{Si}_3\text{O}_{12}$	(B) $\text{Mg}_3\text{Al}_2\text{Si}_3\text{O}_{12}$
(C) $\text{Ca}_3\text{Fe}_2\text{Si}_3\text{O}_{12}$	(D) $\text{Fe}_3\text{Al}_2\text{Si}_3\text{O}_{12}$

7. Sapphire is gem variety of :

(A) Spinel	(B) Garnet
(C) Olivine	(D) Corundum

8. The property of development of electric charges on crystallized minerals by pressure is called :
- (A) Pyro electricity (B) Piezo electricity
(C) Photo electricity (D) None of these
9. Which of the following is a dioctahedral mica ?
- (A) Muscovite (B) Biotite
(C) Chlorite (D) None of these
10. Which of the following mineral groups constitutes an isomorphous series ?
- (A) Mica (B) Olivines
(C) Silica (D) None of these
11. If a uniaxial mineral has Refractive index (RI) values of 1.72 along ordinary ray vibration direction and 1.66 along extraordinary ray vibration direction, the optic sign of the minerals is :
- (A) Positive (B) Negative
(C) Both Positive and Negative (D) Cannot be determined
12. Schillerization is shown by which mineral ?
- (A) Calcite (B) Augite
(C) Hypersthene (D) Labradorite
13. If a bed strikes along N30W, the true dip direction of the bed could be :
- (A) N60 E (B) N60 W
(C) S30 W (D) S30 E

14. A fold which is concave upward and is having older rocks in core may be termed as :
- (A) Anticline (B) Syncline
(C) Synformal Anticline (D) Antiformal Syncline
15. In strike-slip faults :
- (A) σ_3 is vertical (B) σ_2 is horizontal
(C) σ_2 is vertical (D) σ_1 is vertical
16. A small area of outcrop in which older rocks are surrounded by younger rocks is known as :
- (A) Overlap (B) Offlap
(C) Outlier (D) Inlier
17. A structure in which the beds dip away from a central point in all directions is called :
- (A) Basin (B) Dome
(C) Anticline (D) Syncline
18. Exploration for chromite is done by :
- (A) Seismic reflection (B) Seismic refraction
(C) Gravity methods (D) Electrical methods
19. A vertical entry into underground mine is called :
- (A) Bench (B) Shaft
(C) Adit (D) Pit
20. If the void ratio of a rock is 0.25, its porosity is :
- (A) 40% (B) 50%
(C) 30% (D) 20%

21. The unit of Hydraulic conductivity is :

- (A) m^3/day
- (B) m/day
- (C) m^2/day
- (D) None of these

22. The maximum value of pH of water is :

- (A) 7
- (B) 14
- (C) 10
- (D) 16

23. Brazilian test is used to determine :

- (A) Tensile strength
- (B) Compressive strength
- (C) Shear strength
- (D) Modulus of elasticity

24. Which of the following types of dam is suitable for narrow valley with strong and uniformly sloping walls ?

- (A) Buttress dam
- (B) Gravity dam
- (C) Cofferdam
- (D) Arch dam

25. Young's modulus is the ratio of :

- (A) Longitudinal stress to longitudinal strain
- (B) Lateral strain to longitudinal strain
- (C) Lateral stress to longitudinal strain
- (D) Longitudinal stress to lateral stress

26. The igneous body of Saucer structure intruded into the rocks is known as :

- (A) Lopolith
- (B) Laccolith
- (C) Phacolith
- (D) Batholith

27. The volcanic equivalent of the plutonic rock Diorite is :
- (A) Trachyte (B) Dacite
(C) Rhyolite (D) Andesite
28. What is the texture called when large-sized crystals are embedded in fine grained matrix ?
- (A) Granitic texture (B) Poikilitic texture
(C) Porphyritic texture (D) Directive texture
29. The particular temperature at which the two components having different freezing points crystallize together is known as :
- (A) Crystallization point (B) Solidus point
(C) Eutectic point (D) Liquidus point
30. The mineral most abundantly present in the igneous rocks is :
- (A) Mica (B) Titanium
(C) Iron (D) Feldspars
31. The common metamorphic rock formed at the contact aureoles of igneous intrusions :
- (A) Quartzite (B) Hornfels
(C) Mylonite (D) Phyllite
32. A metamorphic rock that has undergone partial melting to produce a mixed igneous-metamorphic rock is called as :
- (A) Gneiss (B) Hornfels
(C) Schist (D) Migmatite

33. Find the correct sequence of rocks that are formed when shale undergoes progressive metamorphism :

- (A) Slate, gneiss, schist, phyllite (B) Phyllite, slate, schist, gneiss
(C) Slate, phyllite, schist, gneiss (D) Schist, phyllite, slate, gneiss

34. Mylonites are produced due to which metamorphism ?

- (A) Regressive (B) Cataclastic
(C) Regional (D) Dynamo-thermal

35. The term Lepidoblastic is applied to fabric dominated by :

- (A) Tabular minerals (B) Flaky minerals
(C) Prismatic minerals (D) None of these

36. Which of the following sedimentary structures is used to determine top and bottom of deformed beds ?

- (A) Graded bedding (B) Oscillation ripples
(C) Current bedding (D) Lenticular bedding

37. Silt grain size is measured between :

- (A) 1 mm and $\frac{1}{2}$ mm (B) $\frac{1}{4}$ mm and $\frac{1}{16}$ mm
(C) $\frac{1}{2}$ mm and $\frac{1}{4}$ mm (D) $\frac{1}{16}$ mm and $\frac{1}{256}$ mm

38. Biogenic oozes, red clays are the typical sediments found in :

- (A) Littoral zone (B) Abyssal zone
(C) Neritic zone (D) Bathyal zone

39. Which of the following is the composition of Marl ?
- (A) CaCO_3 only (B) MgCO_3 only
- (C) $\text{CaCO}_3 + \text{MgCO}_3$ (D) $\text{CaCO}_3 + \text{MgCO}_3 + \text{FeCO}_3$
40. Which of the following is a measure of the symmetry of the distribution of grains ?
- (A) Sphericity (B) Kurtosis
- (C) Skewness (D) Roundness
41. A level where the pressure due to the elevated masses and depressed areas of Earth's crust are equal is called :
- (A) Isostatic level (B) Isopiestic level
- (C) Isobaric level (D) None of these
42. Acceleration due to gravity is maximum at :
- (A) Equator (B) Pole
- (C) Tropic of Capricorn (D) Tropic of Cancer
43. Constructive plate boundary is also known as :
- (A) Diverging plate boundary (B) Conservative plate boundary
- (C) Converging plate boundary (D) Transform plate boundary
44. A flat topped seamount is known as :
- (A) Gyre (B) Lahar
- (C) Guyot (D) Kane

45. S-wave terminates at :
- (A) Crust-Mantle boundary
 - (B) Lithosphere-Asthenosphere boundary
 - (C) Mantle-Core boundary
 - (D) Inner and Outer core boundary
46. Which among the following is a characteristic feature of Gastropods ?
- (A) Telson
 - (B) Aristotle's Lantern
 - (C) Pallial sinus
 - (D) Operculum
47. The body of strata in which the maximum abundance of a particular species is found is known as :
- (A) Assemblage zone
 - (B) Range zone
 - (C) Concurrent zone
 - (D) Acme zone
48. A sedimentary rock included fossils of two species that are known to have lived between 420-370 and 390-200 million years ago. What could be the possible age of the rock ?
- (A) 410 million years
 - (B) 375 million years
 - (C) 395 million years
 - (D) 360 million years
49. A single type specimen upon which the formal description and name of a species is based is known as :
- (A) Metatype
 - (B) Holotype
 - (C) Lectotype
 - (D) Neotype
50. Which of the following plant fossils belongs to Upper Gondwana ?
- (A) Gangamopteris
 - (B) Noeggerathiopsis
 - (C) Williamsonia
 - (D) Euryphyllum

51. Which of the following stratigraphic units contains dinosaur fossils ?
- (A) Lameta Bed (B) Muth Quartzite
(C) Siwalik Group (D) Subathu Formation
52. Which one of the following successions does represent the correct stratigraphic sequence from bottom to top ?
- (A) Uttatur Formation – Trichinopoly Formation – Ariyalur Formation – Niniyur Formation
(B) Trichinopoly Formation – Uttatur Formation – Ariyalur Formation – Niniyur Formation
(C) Uttatur Formation – Trichinopoly Formation – Niniyur Formation – Ariyalur Formation
(D) Niniyur Formation – Trichinopoly Formation – Uttatur Formation – Ariyalur Formation
53. Eparchean unconformity separates geological units of :
- (A) Proterozoic from Phanerozoic (B) Palaeozoic from Mesozoic
(C) Archean from Proterozoic (D) Proterozoic from Palaeozoic
54. Lameta Formation is an example of :
- (A) Infratrappean bed (B) Intertrappean bed
(C) Supratrappean bed (D) Intratrappean bed
55. Which among the following is not a chronostratigraphic unit ?
- (A) System (B) Series
(C) Stage (D) Period

56. The Vempalle shales and limestones formation belongs to :
- (A) Papaghani Group (B) Cheyair Group
(C) Kistna Group (D) Nallamalai Group
57. Which is the fundamental unit of the lithostratigraphical classification ?
- (A) Bed (B) Formation
(C) Member (D) Zone
58. Miocene limestone is the source for which of the following Petroliferous basins ?
- (A) Bombay offshore Basin (B) Assam-Arakan Basin
(C) Krishna Basin (D) Mahanadi Basin
59. The ability of a sensor to define fine wavelength intervals is called :
- (A) Apatial resolution (B) Temporal resolution
(C) Spectral resolution (D) Radiometric resolution
60. Spatial resolution of CARTOSAT-1 is :
- (A) 0.8 m (B) 0.6 m
(C) 2 m (D) 2.5 m
61. An orbit in which the satellite passes a location at the same time each day is called :
- (A) Sun-synchronous (B) Polar
(C) Geo-synchronous (D) Near Polar Orbit
62. Froth flotation is used for concentration of :
- (A) Oxide ores (B) Sulphide ores
(C) Silicate ores (D) Phosphate ores
63. Wolframite is an ore of :
- (A) Nickel (B) Chromite
(C) Tungsten (D) Copper

64. Supergene sulphide enrichment zone is found :
(A) Above the water table (B) Below the water table
(C) In the oxidising zone (D) Near the ground surface
65. Minerals in which a country has total inadequacy and depend upon foreign sources for its needs are described as :
(A) Strategic minerals (B) Critical minerals
(C) Essential minerals (D) Expensive minerals
66. Diamond drilling can be used to make bore holes in :
(A) Horizontal direction only (B) Vertical direction only
(C) Both horizontal and vertical directions (D) None of these
67. Path finder element for complex Pb-Zn-Ag is :
(A) As (B) Hg
(C) Se (D) Cu
68. A linear excavation which is made to expose ore bodies concealed under soil cover is known as :
(A) Blasting (B) Stoping
(C) Augering (D) Trenching
69. Geiger Muller counter is used for :
(A) Gravity prospecting (B) Magnetic prospecting
(C) Seismic prospecting (D) Radioactive prospecting
70. In underground mining, a tunnel excavated downwards from a level in the lode to meet the lower level is known as :
(A) Adit (B) Winze
(C) Raise (D) Stope

71. Which of the following is used to make drill bits ?
- (A) Calcium carbide (B) Tungsten carbide
(C) Nickel carbide (D) Potassium carbide
72. The sum of specific yield and Specific retention is :
- (A) Porosity (B) Effective porosity
(C) Permeability (D) Transmissivity
73. The mid-point between Nadir and Principal point of an aerial photograph is called :
- (A) Iso-centre (B) Centre Point
(C) Iso-point (D) None of these
74. In which type of aerial photos, horizon can be seen ?
- (A) Low-oblique (B) Vertical
(C) High-oblique (D) All of these
75. Which type of scattering creates Haze in photos ?
- (A) Mie (B) Non-selective
(C) Rayleigh (D) None of these
76. In a False Colour Composite, the colour of vegetation is represented as :
- (A) Green (B) Blue
(C) Black (D) Red
77. Which of the following represents correct chronostratigraphic sequence ?
- (A) Zone – Stage – Series – System – Erathem
(B) Series – Zone – Stage – System – Erathem
(C) Zone – Stage – System – Series – Erathem
(D) Series – System – Zone – Stage – Erathem

78. Which of the following combinations of rock and place of occurrence is correct ?
- (A) Komatiite – Ladakh (B) Eclogite – Nuggihalli
(C) Nepheline syenite – Kolar (D) Phosphorite – Jhamarkotra
79. Which of the following is the correct order of stratigraphic succession of Jurassic of Kutch ?
- (A) Patcham, Umia, Chari, Katrol (B) Bhuj, Umia, Chari, Katrol
(C) Patcham, Chari, Katrol, Umia (D) Patcham, Chari, Umia, Katrol
80. Polianite is an ore of :
- (A) Iron (B) Chromite
(C) Copper (D) Manganese
- ◆ —

SPACE FOR ROUGH WORK

SEAL

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