

CET(PG)-2015

Sr. No. :

178011

Question Booklet Series : A

Important: Please consult your Admit Card / Roll No. Slip before filling your Roll Number on the Test Booklet and Answer Sheet.

Roll No.

In Figures

In Words

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O.M.R. Answer Sheet Serial No.

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Signature of the Candidate :

Subject : M.Sc. (Hons. School/2 Year Course)–Geology

Time : 90 minutes

Number of Questions : 75

Maximum Marks : 75

DO NOT OPEN THE SEAL ON THE BOOKLET UNTIL ASKED TO DO SO

INSTRUCTIONS

1. Write your Roll No. on the Question Booklet and also on the OMR Answer Sheet in the space provided and nowhere else.
2. Enter the Subject and Series Code of Question Booklet on the OMR Answer Sheet. Darken the corresponding bubbles with **Black Ball Point / Black Gel pen**.
3. Do not make any identification mark on the Answer Sheet or Question Booklet.
4. To open the Question Booklet remove the paper seal gently when asked to do so.
5. Please check that this Question Booklet contains 75 questions. In case of any discrepancy, inform Assistant Superintendent within 10 minutes of the start of test.
6. Each question has four alternative answers (A, B, C, D) of which only one is correct. For each question darken only one bubble (A or B or C or D), whichever you think is the correct answer, on the Answer Sheet with **Black Ball Point / Black Gel pen**.
7. If you do not want to answer a question, leave all the bubbles corresponding to that question blank in the Answer Sheet. No marks will be deducted in such cases.
8. Darken the bubbles in the OMR Answer Sheet according to the Serial No. of the questions given in the Question Booklet.
9. Negative marking will be adopted for evaluation i.e., 1/4th of the marks of the question will be deducted for each wrong answer. A wrong answer means incorrect answer or wrong filling of bubble.
10. For calculations, use of simple log tables is permitted. Borrowing of log tables and any other material is not allowed.
11. For rough work only the sheets marked "Rough Work" at the end of the Question Booklet be used.
12. The Answer Sheet is designed for **computer evaluation**. Therefore, if you do not follow the instructions given on the Answer Sheet, it may make evaluation by the computer difficult. **Any resultant loss to the candidate on the above account, i.e., not following the instructions completely, shall be of the candidate only.**
13. After the test, hand over the Question Booklet and the Answer Sheet to the Assistant Superintendent on duty.
14. In no case the Answer Sheet, the Question Booklet, or its part or any material copied/noted from this Booklet is to be taken out of the examination hall. Any candidate found doing so, would be expelled from the examination.
15. A candidate who creates disturbance of any kind or changes his/her seat or is found in possession of any paper possibly of any assistance or found giving or receiving assistance or found using any other unfair means during the examination will be expelled from the examination by the Centre Superintendent/Observer whose decision shall be final.
16. **Telecommunication equipment such as pager, cellular phone, wireless, scanner, etc., is not permitted inside the examination hall. Use of calculator is not allowed.**

SEAL

1. **The Gutenberg discontinuity is located at a depth of around :**
(A) 35 km (B) 150 km
(C) 2900 km (D) 5000 km
2. **What is the age of "Brail Series" ?**
(A) Jurassic (B) Paleocene
(C) Oligocene (D) Miocene
3. **Thermohaline circulation in the oceans is driven by :**
(A) Only salinity gradients (B) Both temperature and salinity gradients
(C) Only temperature gradients (D) Only density difference
4. **Which one of the following lakes is interpreted to be of meteoritic impact origin ?**
(A) Lunar lake (B) Chilka lake
(C) Kolleru lake (D) Pulicat lake
5. **Which of the following geomorphic features is not related to desert environment ?**
(A) Yardang (B) Bajada
(C) Hamada (D) Esker
6. **Which of the following is located closest to the Ninety-East-Ridge ?**
(A) Bombay High (B) Lakshwadweep islands
(C) Andaman and Nicobar islands (D) Maldives
7. **Who proposed the principle "the present is the key to the past" ?**
(A) James Hutton (B) Carl von Linnaeus
(C) William Smith (D) Orbigny
8. **The logging tool for direct determination of permeability is :**
(A) Induction (B) Litho-density
(C) Sonic (D) NMR
9. **Crude oil density, In degree API (American Petroleum Institute), is a measure of viscosity. The value of 10 API is of :**
(A) Water (B) Heavy oil
(C) Average oil (D) Light oil
10. **Which one of the following is a typical Lower Gondwana plant assemblage ?**
(A) Glossopteris, Ptilophyllus, Nilsonia, Bucklandia
(B) Glossopteris, Gangamopteris, Schizoneura, Sphenophyllum
(C) Gangamopteris, Lycopodites, Brachyphyllum, Nilsonia
(D) Vertebraria, Alethopteris, Otozamites, Glossopteris

11. Which type of clay is used as a drilling mud ?
 (A) China clay (B) Fullers earth
 (C) Bentonite clay (D) Fire clay
12. High magnitude of anomalous elements in a particular area is called :
 (A) Anomaly (B) Background value
 (C) Threshold value (D) Excessive value
13. Abnormal number of chromosomes in nuclei of plant cells, unusual shape of fruit, Startlea petalous and stalked leaf rosette, indicate :
 (A) Al deposits (B) Cu deposits
 (C) U deposits (D) Fe deposits
14. The 'Sulekere series' of Shimoga Belt is equivalent to :
 (A) Upper Dharwar (B) Middle Dharwar
 (C) Lower Dharwar (D) None of these
15. The 'Billi Rhyolite' belongs to :
 (A) Kairagarh group (B) Nandgaon group
 (C) Sakoli group (D) Sensor group
16. Match the correct one :
- | I | II |
|--------------------------|--------------------|
| 1. Alwar series | (i) Raialo series |
| 2. Bhagwanpura limestone | (ii) Aravallis |
| 3. Binotashales | (iii) Delhi system |
| 4. Semri series | (iv) Vindhyaans |
- (A) 1-ii, 2-iv, 3-i, 4-iii
 (B) 1-i, 2-iv, 3-iii, 4-ii
 (C) 1-iii, 2-i, 3-ii, 4-iv
 (D) None of them
17. What is the correct sequence of the evolution of Elephant ?
 (A) Moeritherium, Tetralophodon, Trilophodon, Philomel, Alphas and Luxodont
 (B) Moeritherium, Philomel, Trilophodon, Tetralophodon, Luxodont and Alphas
 (C) Philomel, Moeritherium, Luxodont, Tetralophodon, Trilophodon and Alphas
 (D) Alphas, Philomel, Moeritherium, Tetralophodon and Luxodont
18. Graptolites are very useful index fossils of :
 (A) Cretaceous age (B) Permian and Triassic ages
 (C) Carboniferous age (D) Ordovician and Silurian

19. The common forms of foraminifer's tests range in size from :
- (A) 0.01 to 0.1 mm (B) 0.1 to 0.3 mm
(C) 0.1 to 2 mm (D) 0.1 to 5 mm
20. Artificial porosity and permeability can be achieved by :
- (A) Bore Blast Technique (B) Hydraulic Fracturing
(C) Piston Fracturing (D) All the above
21. When groundwater body is separated from the main ground water by a relative impermeable stratum of small extent it is called :
- (A) Unconfined ground water (B) Confined ground water
(C) Perched ground water (D) Pressure ground water
22. Bauxite is an aggregate of :
- (A) Gibbsite and Diaspora (B) Gibbsite and Bonhomie
(C) Diaspora and Bonhomie (D) Gibbsite, Diaspora and Boehme
23. Chrysolite asbestos of Cuddapah district (A.P.) is found in :
- (A) Srisailam quartzites
(B) Kolamnala shells
(C) Contact of a bed of Cuddapah limestones with a dolerite sill
(D) Tadpatri shales
24. Match the following :
- | I | II |
|--|----------------------|
| 1. Bauxite deposits of Central and Western India | (i) Khondalites |
| 2. Bauxite deposits of Andhra Pradesh & Orissa | (ii) Detrital origin |
| 3. Bauxite deposits of Tamil Nadu | (iii) Deccan traps |
| 4. Bauxite deposits of Kati (M.P.) | (iv) Chamockites |
- (A) 1-iii, 2-i, 3-ii, 4-iv
(B) 1-iii, 2-iv, 3-ii, 4-i
(C) 1-iii, 2-i, 3-iv, 4-ii
(D) 1-ii, 2-iv, 3-iii, 4-i
25. Chromites belong to which mineral group ?
- (A) Olivine (B) Spinal
(C) Pyroxene (D) Garnet
26. Mark the correct statement about Mosabani copper deposits :
- (A) The sulphide assemblage of Mosabani situated within Singhbhum shear zone
(B) Quartz-Chlorite-Biotite Schist is the major host rock
(C) Chalcopyrite, pyrite and pyrrhotite constitute the main ore mineral
(D) All are correct

27. The bridge across the Hooghly river Calcutta is a :
- (A) Suspension bridge (B) Cable – stayed bridge
(C) Balanced cantilever bridge (D) Level bridge
28. Mark the correct statement/s about the incised stream :
- (A) The incised stream forms its channel by the process of degradation
(B) The transported material by incised stream comes from erosion of the catchment
(C) The bed and banks of an incised stream are quite resistant to erosion
(D) All the above are correct
29. “Sinuosity” of a stream is defined as :
- (A) Ratio of Talweg length to the valley width (B) Ratio of Talweg length to the valley length
(C) Ratio of meander length to the valley length (D) None of these
30. Landslides are :
- (A) Downward movement of slope materials
(B) Outward movement of slope materials
(C) Downward and outward movement of slope materials
(D) Downward and inward movement of slope materials
31. A piece of metal of specific gravity 7 floats in mercury of specific gravity 13.6. What fraction of its volume is under mercury ?
- (A) 0.5 (B) 0.4
(C) 0.515 (D) 0.5
32. Siderolites are :
- (A) Iron meteorites (B) Stony iron meteorites
(C) Stony meteorites (D) Silicate meteorites
33. Eclogites is a :
- (A) Olivine rock (B) Olivine and pyroxene rock
(C) Garnet and pyroxene rock (D) Garnet and olivine rock
34. Sensitive High Resolution ion probe (SHRIP) is a/an :
- (A) Age dating method by Zircon crystal
(B) Type of remote sensing survey
(C) Type of film used for remote sensing survey
(D) Type of mineral exploration method
35. Long-term changes in the geochemical cycle are known as :
- (A) Periodic changes (B) Permanent changes
(C) Secular changes (D) Perennial changes

36. Which method is used for dating relatively recent geological event ?
 (A) K - Ar method (B) U - pb method
 (C) Carbon - 14 methods (D) Rb - Sr method
37. Elements which readily form ions with an outermost 8-electron shell are :
 (A) Siderophile (B) Chalcophile
 (C) Lithophile (D) Atmosphere
38. The mineral formed from the products of chemical decomposition are generally :
 (A) Oxide compounds (B) Silicates
 (C) Carbonates (D) Hydrates compounds
39. The stability series of minerals of igneous rocks towards weathering is given by :
 (A) Bowmen (1919) (B) Goldich (1938)
 (C) Imbrie (1959) (D) Goldschmidt (1940)
40. The angle between the bonds joining the hydrogen nuclei to the centre of the oxygen atom in a water molecule is :
 (A) 90° (B) 96°
 (C) 105° (D) 115°
41. Hydrolysis or a solution is a/an :
 (A) Substitute reaction between water ions and salt ions
 (B) Substitute reaction between precipitate and solvents
 (C) Exchange reaction between precipitates and water ions
 (D) Exchange reaction between water ions and salt ions
42. The term pH stands for :
 (A) Pure Hydrogen (B) Puissance de Hydrogen
 (C) Potential Hydrogen (D) Per Hydrogen ion
43. Geochemical data on the Dhanjori volcanic of the Singhbhum craton indicate :
 (A) Basaltic in nature (B) Rhyolite in nature
 (C) Ranging from basalt to Andesite (D) Ranging from Rhyolite to rachitic
44. The oceans cover about area of the earth's surface.
 (A) 69 % (B) 21 %
 (C) 70.8 % (D) 80.2 %
45. 'Witwatersrand' (South Africa) is famous for :
 (A) Coal deposits (B) Copper deposits
 (C) Sedimentary uranium deposits (D) Sedimentary Mn and Fe deposits
46. Most of the bauxite deposits of central and western India have been formed from :
 (A) Granite (B) Syenite
 (C) Nepheline syenite (D) Basalt
47. Supergene sulphide enrichment zone is found :
 (A) Above the water table (B) Below the water table
 (C) Near the ground surface (D) In oxidizing zone

48. **Prospecting by geophysical methods is based on the typical properties exhibited by rock formations like :**
- (A) Electrical/magnetic, gravitational and resistivity (B) Electrical and magnetic
(C) Magnetic and gravitational (D) None of these
49. **Boggier correction in Gravity prospecting accounts for :**
- (A) Geocidal shape of the earth
(B) Attraction of material between the station and the datum plane
(C) Changes in elevation between stations
(D) Surface irregularities in vicinity of the station
50. **From the following, which mineral has a high dielectric capacity :**
- (A) Quartz (B) Mica
(C) Feldspar (D) Calcite
51. **The process of conversion of glassy material to crystallised material is :**
- (A) Crystallisation (B) Devitrification
(C) Eutectic process (D) Assimilation
52. **A rock made up of euhedral crystals, the texture is described as :**
- (A) Allotriomorphic (B) Hypidiomorphic
(C) Panidomorphic (D) None of these
53. **Ophitic texture is commonly shown by :**
- (A) Trachyte (B) Lamprophyres
(C) Andesite (D) Dolerite
54. **A common decomposition in basaltic rocks involve :**
- (A) Oxidation of Mg (B) Oxidation of Fe
(C) Hydration of Fe (D) Hydration of K
55. **Match the following :**
- | I | II |
|---|---------------|
| 1. A coarse-grained, light-colored rock | (i) Rhyolite |
| 2. A coarse-grained, dark-colored rock | (ii) Gabbro |
| 3. A fine-grained, light-colored rock | (iii) Granite |
| 4. A fine-grained, dark-colored rock | (iv) Basalt |
- (A) 1-iv, 2-ii, 3-iii, 4-i
(B) 1-iii, 2-ii, 3-i, 4-iv
(C) 1-ii, 2-i, 3-iv, 4-iii
(D) 1-iii, 2-ii, 3-iv, 4-i

56. The first minerals to crystallize from a completely or almost anhydrous melt at high temperature are called :

- (A) Hydrotogenic minerals
(B) Pyrogenetic minerals
(C) Pegmatitic minerals
(D) Orthomagmatic minerals

57. Match the following :

I

1. Leucocratic
2. Mesocratic
3. Melanocratic
4. Hypermelanocratic

II

- (i) Dark colored rock
- (ii) Light colored rock
- (iii) Extremely dark colored rock
- (iv) Intermediate in colour

- (A) 1-ii, 2-iv, 3-i, 4-iii
(B) 1-iii, 2-ii, 3-iv, 4-i
(C) 1-i, 2-ii, 3-iii, 4-iv
(D) 1-iv, 2-iii, 3-ii, 4-i

58. The temperature range, for which the Bowen's Reaction series has been worked out is :

- (A) 1200°C to 635°C
(B) 1100°C to 450°C
(C) 1100°C to 573°C
(D) 900°C to 573°C

59. Match the following :

I

1. Laccolith
2. Lopolith
3. Bysmalith
4. Phacolith

II

- (i) Saucer shaped intrusive body
- (ii) Cressentric shaped igneous body
- (iii) Convex top and flat bottom
- (iv) Broken intrusive body

- (A) 1-iii, 2-i, 3-iv, 4-ii
(B) 1-ii, 2-i, 3-iv, 4-iii
(C) 1-i, 2-ii, 3-iii, 4-iv
(D) 1-iv, 2-iii, 3-ii, 4-i

60. Current beddings are formed due to :

- (A) Frequent changes in velocity of the flow of the stream
(B) Frequent changes in direction of the flow of the stream
(C) Frequent changes in velocity and direction of the flow of the stream
(D) None of these

61. Variation of palaeocurrent direction is minimum in the deposits formed by :

- (A) Glacial processes
(B) Fluvial processes
(C) Aeolian processes
(D) Beach processes

62. A thickness map which shows drilled intervals, irrespective of the amount of dip, is called :
- (A) Isopach map (B) Isochore map
(C) Isobar map (D) Isolith map
63. Quarts sandstone is said "mature" when it is having :
- (A) Well-rounded, poor-sorted quartz grains
(B) Poor-rounded, poor-sorted quartz grains
(C) Well-rounded, well-sorted quartz grains
(D) Poor-rounded, well-sorted quartz grains
64. If a body of seawater is totally evaporated, what sequence of rock types result ?
- (A) Calcite, Gypsum, Anhydrite and Halite
(B) Gypsum, Calcite, Halite and Anhydrite
(C) Halite, Gypsum, Anhydrite and Calcite
(D) Gypsum, Anhydrite, Halite and Calcite
65. Greywacke is dark in colour and rich in clay rock fragments and contains less of Quartz sand grains, which are :
- (A) Rounded, fine and well sorted
(B) Angular, fine and well sorted
(C) Rounded, coarse and unsorted
(D) Angular, coarse and unsorted
66. Nappe structures can be formed by :
- (A) Over thrusting (B) Recumbent folding
(C) Normal faulting (D) Both (A) and (B)
67. Which term will be more appropriate for the slate rock ?
- (A) Slaty cleavage (B) Schistosity
(C) Continuous cleavage (D) None of these
68. If the folds plunge, the strike on the cleavage is :
- (A) Parallel to the strike of the bedding
(B) Diagonal to the strike of the bedding
(C) Perpendicular to the strike of the bedding
(D) Relationship is uncertain
69. Slickenside are defined as :
- (A) Foliation (B) Bedding
(C) Lincation (D) Fault plane

70. A fault in which the displacement of limbs take place at a right angle to the surface of discontinuity (like dyke) are known as :

- (A) Trench fault (B) Lag fault
(C) Gaping fault (D) Drag fault

71. Choose the correct statement regarding current ripple marks :

- (A) The rounded trough is convex toward the older beds
(B) The rounded trough is convex toward the younger beds
(C) The upper portion of the ripple mark indicate younger beds
(D) The current marks cannot be used to determine top from bottom

72. Which type of cross-bedding cannot be used to tell top and bottom ?

- (A) Tabular cross-bedding (B) Planar cross-bedding
(C) Lenticular cross-bedding (D) Wedge-shaped cross-bedding

73. Match the following :

I

1. Disconformities
2. Non-conformity
3. Local-unconformity
4. Blended unconformity

II

- (i) Non-depositional unconformity
- (ii) Between residual soil and under lying rocks
- (iii) Parallel unconformity
- (iv) Heterolithic unconformity

- (A) 1-iii, 2-iv, 3-i, 4-ii
(B) 1-i, 2-ii, 3-iii, 4-iv
(C) 1-ii, 2-iii, 3-iv, 4-i
(D) 1-iv, 2-i, 3-ii, 4-iii

74. Hyperion was the :

- (A) Upper Pliocene horse (B) Lower Pliocene horse
(C) Lower Cambrian horse (D) Upper Permian horse

75. The Early, Middle and Late Proterozoic - with time boundaries at :

- (A) 2500 - 1500 and 900 m.y. respectively
(B) 3000 - 1500 and 1000 m.y. respectively
(C) 3000 - 2000 and 1000 m.y. respectively
(D) 2800 - 2200 and 1000 m.y. respectively