

Sl. No. :

GEPG/19

Register
Number

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2019
GEOLOGY
(PG Degree Std.)

Time Allowed : 3 Hours]

[Maximum Marks : 300

Read the following instructions carefully before you begin to answer the questions.

IMPORTANT INSTRUCTIONS

1. The applicant will be supplied with Question Booklet 15 minutes before commencement of the examination.
2. This Question Booklet contains 200 questions. Prior to attempting to answer, the candidates are requested to check whether all the questions are there in series and ensure there are no blank pages in the question booklet. **In case any defect in the Question Paper is noticed, it shall be reported to the Invigilator within first 10 minutes and get it replaced with a complete Question Booklet. If any defect is noticed in the Question Booklet after the commencement of examination, it will not be replaced.**
3. Answer all questions. All questions carry equal marks.
4. You must write your Register Number in the space provided on the top right side of this page. Do not write anything else on the Question Booklet.
5. An answer sheet will be supplied to you, separately by the Room Invigilator to mark the answers.
6. You will also encode your Question Booklet Number with Blue or Black ink Ball point pen in the space provided on the side 2 of the Answer Sheet. If you do not encode properly or fail to encode the above information, action will be taken as per Commission's notification.
7. Each question comprises *four* responses (A), (B), (C) and (D). You are to select **ONLY ONE** correct response and mark in your Answer Sheet. In case you feel that there are more than one correct response, mark the response which you consider the best. In any case, choose **ONLY ONE** response for each question. Your total marks will depend on the number of correct responses marked by you in the Answer Sheet.
8. In the Answer Sheet there are **four** circles (A), (B), (C) and (D) against each question. To answer the questions you are to mark with Blue or Black ink Ball point pen **ONLY ONE** circle of your choice for each question. Select one response for each question in the Question Booklet and mark in the Answer Sheet. If you mark more than one answer for one question, the answer will be treated as wrong. e.g. If for any item, (B) is the correct answer, you have to mark as follows :

(A) ● (C) (D)
9. You should not remove or tear off any sheet from this Question Booklet. You are not allowed to take this Question Booklet and the Answer Sheet out of the Examination Hall during the time of examination. After the examination is concluded, you must hand over your Answer Sheet to the Invigilator. You are allowed to take the Question Booklet with you only after the Examination is over.
10. **Do not make any marking in the question booklet except in the sheet before the last page of the question booklet, which can be used for rough work. This should be strictly adhered.**
11. Applicants have to write and shade the total number of answer fields left blank on the boxes provided at side 2 of OMR Answer Sheet. An extra time of 5 minutes will be given to specify the number of answer fields left blank.
12. Failure to comply with any of the above instructions will render you liable to such action or penalty as the Commission may decide at their discretion.



SPACE FOR ROUGH WORK

11 12



1. The silent volcanic eruption of lava without any explosive activity is
 (A) Hawaiian type (B) Pelean type
(C) Vesuvian type (D) Strambilian type
2. A volcano which has not erupted for a long time is called as
(A) Active volcano (B) Dormant volcano
(C) Extinct volcano (D) Dead volcano
3. Where two continental plates collide with each other, associated with
 (A) Mountain building
(B) Island ridges
(C) Mid oceanic ridges
(D) Oceanic trenches
4. Trenches are the site of
(A) Converging currents
 (B) Diverging currents
(C) No currents are present at trenches
(D) Massive folding
5. The fastest spreading of the sea floor is exhibited by
(A) South Atlantic Ridge
(B) North Atlantic Ridge
(C) Central Indian Ridge
 (D) East Pacific Rise
6. Drifting of continents started during
 (A) Carboniferous (B) Devonian
(C) Cambrian (D) Permian



7. To determine the age of the earth, the fine sedimentary deposits of glacial origin are used in
- (A) Varve-Clock method
 - (B) Sedimentation-Clock method
 - (C) Salinity-Clock method
 - (D) Rate of cooling of the earth
8. The lower and upper gondwana are characterized respectively by
- (A) Glossopteris and Gangamopteris
 - (B) Glossopteris and Ptilophyllum
 - (C) Ptilophyllum and Glossopteris
 - (D) Ptilophyllum and Nilgonia
9. Tirohan limestone and Tirohan breccia are equivalent to
- (A) Upper Vindhyan
 - (B) Lower Vindhyan
 - (C) Upper Cuddapah
 - (D) Lower Cuddapah
10. The pyrite deposits are found in
- (A) Jhiri shales
 - (B) Panna shales
 - (C) Bijaigarh shales
 - (D) Ganugarh shales
11. The thickness of Vindhyan system of rocks are
- (A) 4000 m
 - (B) 4270 m
 - (C) 4500 m
 - (D) 4750 m

12. Ariyalur stage is mainly composed of
- (A) Arenaceous and Calcareous rocks
 - (B) Argillaceous and Calcareous rocks
 - (C) Arenaceous and Argillaceous rocks
 - (D) Calcareous rocks only
13. The Infra-trappean beds are having marine fossils like nautilus, several lamellibranchs and gastropods which seems to be identical with
- (A) Fossils of the Uttatur Stage of Trichy Cretaceous
 - (B) Fossils of the Trichinopoly stage of Trichy Cretaceous
 - (C) Fossils of the Ariyalur stage of Trichy Cretaceous
 - (D) Fossils of the Dalmiapuram formation
14. Columnar jointing in the Deccan traps are seen in
- (A) Gujarat
 - (B) Girnar hills
 - (C) Bihar
 - (D) Bombay
15. The Deccan traps are spread over the vast areas of
- (A) Western India
 - (B) Central India
 - (C) Southern India
 - (D) Western, Central and Southern India
16. Muth Quartzites are seen in which of the following systems of palaeozoic group?
- (A) Ordovician
 - (B) Silurian
 - (C) Devonian
 - (D) Permian
17. Syringothyris limestone beds are characteristic of which of the following?
- (A) Lower Ordovician
 - (B) Upper Ordovician
 - (C) Lower Carboniferous
 - (D) Upper Carboniferous
18. Chinji formation belongs to which of the following sub-groups?
- (A) Lower Siwaliks
 - (B) Middle Siwaliks
 - (C) Upper Siwaliks
 - (D) Lower Gondwana

19. Which of the following is the uppermost series of Cuddapah system?
- (A) Papaghani
 - (B) Kristna
 - (C) Cheyair
 - (D) Nallamalai
20. Irlakonda comprises which of the following rock types?
- (A) Marbles
 - (B) Limestones
 - (C) Shales
 - (D) Quartzites
21. The Cuddapah system is a group of rocks deposited after which of the following?
- (A) Eparchean unconformity
 - (B) Vindhyan system
 - (C) Gondwana formations
 - (D) Deccan traps
22. Dharwar Batholith of Eastern Dharwar Craton is assumed to have an age of
- (A) 2500 – 2700 Ma
 - (B) > 3000 Ma
 - (C) > 2800 Ma
 - (D) 2800 – 3000 Ma
23. Oil exploration stratigraphic correlation from area to area and well to well can be done on the basis of
- (A) Stratigraphic horizons
 - (B) Micropalaeontological marker horizons
 - (C) Sedimentary interpretations
 - (D) Depth of the stratigraphic column

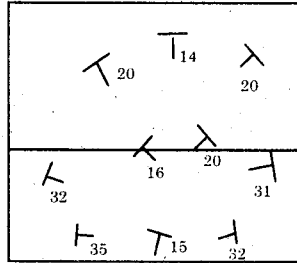
24. Which of the following is correct?
- (A) Didymograptus – Lower and Middle ordovician
 - (B) Goniograptus – Middle silurian
 - (C) Loganograptus – Lower silurian
 - (D) Staurograptus – Silurian
25. In Graptolites, largest of thecae is called
- (A) Autotheca
 - (B) Stolotheca
 - (C) Bitheca
 - (D) Protheca
26. The tube of colony in graptolites is known as
- (A) theca
 - (B) suture
 - (C) stipe
 - (D) nema
27. The fossils resemblance of pencil marks are called
- (A) Graptolites
 - (B) Trilobites
 - (C) Echinoderma
 - (D) Porifera
28. Which of the following is not matched correctly?
- (A) Olenellus – Lower Cambrian
 - (B) Paradoxides – Middle Cambrian
 - (C) Calymene – Upper Cambrian
 - (D) Trinucleus – Ordovician
29. The most ancient kind of eyes in Trilobites are known as
- (A) Holochroal eyes
 - (B) Schizochroal eyes
 - (C) Stalked eyes
 - (D) Abathochroal eyes

30. Which of the following group shows evolution in nature of suture line in Ammonoidea?
- (A) Goniatic, Ceratitic, Ammonitic
 - (B) Ceratitic, Goniatic, Ammonitic
 - (C) Ammonitic, Goniatic, Ceratitic
 - (D) Goniatic, Ammonitic, Ceratitic
31. _____ structures may form potential oil traps (or) aquifers.
- (A) Inlier
 - (B) Off lap
 - (C) Outlier
 - (D) Over lap
32. The Jurassic formation of India was typically deposited at
- (A) Maharashtra
 - (B) Gujarat
 - (C) Madhya Pradesh
 - (D) Andhra Pradesh
33. _____ are parallel to axial plane and perpendicular to extension joints.
- (A) Release Joint
 - (B) Conjugate Joint
 - (C) Extension Joint
 - (D) Master Joint
34. Presence of a large block horse of dislocated wall rock in the fault fissure indicates
- (A) Fault crevice
 - (B) Reverse fault
 - (C) Normal fault
 - (D) Strike slip fault



35. The intermediate stress axis is vertical, the intersection of the two sets of shear fracture is also vertical is
- (A) Longitudinal Fault (B) Reverse Fault
 (C) Strike slip Fault (D) Parallel Fault

36. Dip and strike symbols shows



- (A) Asymmetrical anticline (B) Asymmetrical syncline
 (C) Symmetrical anticline (D) Symmetrical syncline
37. Match the terminology for pattern of minor folds in plan and cross section, showing shear sense :

- (a) 1. Right hander
- (b) 2. Left hander
- (c) 3. Neutral
- (d) 4. Non committal

	(a)	(b)	(c)	(d)
(A)	1	2	3	4
<input checked="" type="checkbox"/> (B)	2	1	3	4
(C)	2	1	4	3
(D)	1	2	4	3

38. Folds that develop in an incompetent bed lying between two competent beds that shear past one another
- (A) Cylindrical fold (B) Drag fold
 (C) Curvilinear fold (D) Supratenuous fold
39. In which of the following fold. Limbs dips in the same direction but unequally. Strike parallel to fold axis and crest/trough smoothly curved
- (A) Dome fold (B) Basin fold (C) Geosyncline (D) Over fold
40. Considerable plastic movement of material away from the limbs and towards the hinges produces
- (A) Concentric folding (B) Tight fold
 (C) Parallel folding (D) Similar folding

41. Which of the given crystal classes are represented by "Only centre of symmetry"
- (A) Normal class of Triclinic system
 - (B) Normal class of Monoclinic system
 - (C) Normal class of Isometric system
 - (D) Normal class of Tetragonal system
42. The axial ratio of $a : b : c = 0.6585 : 1 : 0.5554$ is applicable to which of the given mineral species
- (A) Orthoclase
 - (B) Barite
 - (C) Chalcopyrite
 - (D) Galena
43. Phenacite is the type mineral for which of the following crystal classes?
- (A) Tri-rhombohedral class of Hexagonal system
 - (B) Rhombohedral class of Hexagonal system
 - (C) Rhombohedral Hemimorphic class of Hexagonal system
 - (D) Trigonal class of Hexagonal system
44. Nephelite is the type mineral for which of the following crystal classes?
- (A) Hemimorphic class of hexagonal system
 - (B) Trapezohedral class of hexagonal system
 - (C) Tripyramidal class of hexagonal system
 - (D) Pyramidal-Hemimorphic class of Hexagonal system
45. Wulfenite is the type mineral for which of the following crystal classes?
- (A) Tripyramidal class of tetragonal system
 - (B) Trapezohedral class of tetragonal system
 - (C) Pyramidal-Hemimorphic class of tetragonal system
 - (D) Hemimorphic class of tetragonal system
46. Tetrahedrite is the type mineral for which of the following crystal classes?
- (A) Normal class of isometric system
 - (B) Normal class of Tetragonal system
 - (C) Tetrahedral class of isometric system
 - (D) Tetartohedral class of isometric system



47. Schiller structure is more common among which of the following pyroxenes?
(A) Enstatite ~~(B) Hypersthene~~
(C) Diopside (D) Angite
48. Spodumene is a lithium bearing pyroxene group mineral that crystallizes in
(A) Orthorhombic system ~~(B) Monoclinic system~~
(C) Triclinic system (D) Tetragonal system
49. Diopside is a pyroxene group mineral that crystallizes in
(A) Orthorhombic system ~~(B) Monoclinic system~~
(C) Triclinic system (D) Tetragonal system
50. Which of the following Feldspathoidal mineral shows an octahedral crystal form among the given?
(A) Nepheline (B) Melilite
~~(C) Hauyne~~ (D) Cancrinite
51. Which of the following minerals show Isotropism under crossed polars irrespective of the orientation of the thin section?
(A) Melilite ~~(B) Sodalite~~
(C) Cancrinite (D) Nepheline
52. Leucite crystallizes in which of the following crystal systems?
(A) Tetragonal
(B) Hexagonal
(C) Isometric
~~(D) Pseudoisometric~~
53. The Ternary diagram of the Feldspars is with which all end members
(A) Anorthite – Albite - Oligoclase
(B) Oligoclase – Orthoclase - Albite
~~(C) Orthoclase – Albite - Anorthite~~
(D) Albite – Orthoclase – Bytownite

54. C.I.P.W. classification is based on
- (A) Minerals group
 - (B) Chemical composition
 - (C) Physical properties
 - (D) Color index
55. Among the following group which one is common wall rock alteration product.
- (A) Syenite
 - (B) Nepheline
 - (C) Carbonatite
 - (D) Anorthosite
56. The Anorthosites are emplaced during the period of
- (A) Silurian
 - (B) Pre-Cambrian
 - (C) Cambrian
 - (D) Ordovician
57. The Olivine-free basalt are called as
- (A) Minette
 - (B) Dunite
 - (C) Tourmaline
 - (D) Tholeiitic
58. Peridotites have _____ percentage of silica and the color index is _____.
- (A) <45% silica and <30 color index
 - (B) <45% silica and above 70 color index
 - (C) >66% of silica and 70 color index
 - (D) 52-66% of silica and <30 color index
59. Where is the great basalt plateau occur?
- (A) Madagascar
 - (B) Western Isles
 - (C) Greenland
 - (D) Scotland



60. The graphic texture is a
- (A) Intergrowth of two minerals frequently
 - (B) Eutectic point
 - (C) Crystallisation occur in slowly
 - (D) Rapid cooling
61. Obsidian is a
- (A) Rhyolitic composition
 - (B) Olivine and pyroxene composition
 - (C) Fire matrix with angular fragments
 - (D) Sedimentary material with volcanic ash
62. The distinction between basalt and andesite is mainly based on
- (A) SiO_2 content
 - (B) Mafic minerals
 - (C) Felds pathoid
 - (D) Peridotite
63. The alteration takes place around the margins of crystals with the presence and retention of abundant water in soda rich basic magma this process called as
- (A) Albitisation
 - (B) Migmatite Process
 - (C) Analcitisation
 - (D) Lit - Par - Lit gneiss process
64. The process by which superheated steam aided by a little fluorine and boron process is called _____
- (A) Charnockitisation
 - (B) Scapolitisation
 - (C) Kaolinisation
 - (D) Greisening

65. Which one is Non clastic chemically formed calcareous rock.
- (A) Sand stone
 - (B) Siliceous sinter
 - (C) Flint
 - (D) Kankar
66. Which one is typical example of continental facies.
- (A) Lime stone
 - (B) Rock salt
 - (C) Gypsum
 - (D) Conglomerates
67. Grain size between 2 & 1/16mm clastic sediment is
- (A) Gravels
 - (B) Silts
 - (C) Sand
 - (D) Clay
68. Gravitational settling of mixed sediments is
- (A) Graded bedding
 - (B) Lamination
 - (C) Cross bedding
 - (D) Current bedding
69. Changes occur at the water – sediment interface are called as
- (A) Compaction
 - (B) Lithification
 - (C) Diagenetic Processes
 - (D) Halmyrolysis
70. The minerals that form natural solid solutions in each other and at determined the lower temperature unmix to yield intergrowth is called
- (A) Dissociation
 - (B) Recrystallization
 - (C) Exsolution
 - (D) Liquid inclusion

71. Graphite generally occurs in
- (A) Igneous rocks – Granite and pegmatites
 - (B) Metamorphic rocks – Gneisses and Schists
 - (C) Volcanic rocks – Syanites and Andesites
 - (D) Sedimentary rocks – Sandstone and lime stone
72. Good homes of bauxite deposits are called
- (A) The low altitude of 100 to 200 mts regarded
 - (B) The high plateau of our peninsula. The plateau at an altitude of 900 to 1000 mts are regarded
 - (C) Lenses under some soil cover
 - (D) Lets unconsolidated low level surface layers
73. Copper ores are divided into four large groups find out the correct sequence
- (A) Sulphide – Carbonate – Oxides – Nitrate
 - (B) Oxidised – Nitrate – Sulphide – Sulphate
 - (C) Native – Sulphide – Oxidised – Complex
 - (D) Complex – Sulphide – Sulphate – Oxidised
74. Lower limit of a good commercial bauxite is
- (A) Presence of about 30% of Al_2O_3
 - (B) Presence of about 35% of Fe_2O_3
 - (C) Presence of about 50% of Al_2O_3
 - (D) Presence of about 40% of FeO
75. The Indian graphites show variable fixed carbon content that may range from
- (A) 20 – 40%
 - (B) 10 – 30%
 - (C) 40 – 80%
 - (D) 40 – 50%
76. Which of the following is correctly paired?
- (A) Singhbhum copper belt - Karnataka
 - (B) Khetri copper belt - Rajasthan
 - (C) Zawar copper belt - Rajasthan
 - (D) None of the above



77. Exsolution are called as
- (A) this change is somewhat similar to inversion
 - (B) liquid inclusions in cavities of crystals
 - (C) they are little affected by pressure change
 - (D) minerals that form natural solid solution in each other mineral intergrowth - indicating a temperature of formation
78. The age of Panjal trap is
- (A) Permo carboniferous
 - (B) Permian
 - (C) Silurian
 - (D) Cambrian
79. Arrange the following items according to the chronological order
1. Stock works
 2. Ladder veins
 3. Fissure veins
 4. Gash veins
- (A) 2, 1, 4, 3 (B) 4, 2, 3, 1 (C) 1, 3, 4, 2 (D) 3, 2, 4, 1
80. Find the incorrect statement with respect to metasomatic replacement deposits which are characterised by
- I. Absence of crustification
 - II. Presence of remnants of the country rock
 - III. Presence of pseudomorphs of replacing minerals
 - IV. Remobilisation by meteoric circulating water
- (A) I and II (B) III and IV (C) I, II and III (D) IV only
81. Infiltration gallery is called
- (A) laterals spaced uniformly at 60°
 - (B) a horizontal perforated or porous pipe which open joints
 - (C) a trench across the aquifer well flow
 - (D) properly developer usually by compressed air
82. A highly potential aquifer occurs in
- (A) Nagapattinam low land
 - (B) Neyveli upland
 - (C) Ramnad high
 - (D) Madurai block

83. Resistivity for gravelly sands with fresh water in rock formations of Karnataka is
- (A) $10 \Omega \text{ m}$
 - (B) $1000 \Omega \text{ m}$
 - (C) $100 \Omega \text{ m}$
 - (D) $10^4 \Omega \text{ m}$
84. Ill effect of _____ arise if fluoride concentration of 1–1.7 mg/l. in drinking water.
- (A) Fluorosis (skeletal)
 - (B) Cardio vascular disease
 - (C) Methemoglobinemia
 - (D) Hepatitis
85. As the pressure along equipotential line are constant as the flow lines are sloping upward, the depth to interface by Ghyben–Herzber relation is _____ the actual depth.
- (A) =
 - (C) <
 - (B) >
 - (D) \geq
86. Diamond drilling
- (A) With compressed air instead of mud
 - (B) Method for drilling large dia hole
 - (C) Drilling method to investigate sub surface conditions
 - (D) Method for drilling unconsolidated strata
87. Hydraulic conductivity is expressed in
- (A) Metre
 - (B) Metre / sec.
 - (C) $\text{Metre}^2 / \text{sec.}$
 - (D) Volume % of pore space

88. In the zone of aeration the pores are filled up with
- (A) Water only
 - (B) Air only
 - (C) Both water and air
 - (D) Neither water nor air
89. Consider the statements :
- I. Focus is the point at which an earthquake is originated.
 - II. Isoseismal lines are connectivity the points of equal magnitudes of earth quakes.
- (A) Both I and II are correct
 - (B) I is correct II is incorrect
 - (C) I is incorrect II is correct
 - (D) Both I and II are Incorrect
90. The top soil of any land moves downward even on gentlest slope is known as
- (A) Mud flow
 - (B) Rock slide
 - (C) Soil creep
 - (D) Soil fall
91. Crude petroleum is dark and sticky substance which was known as _____ in olden days.
- (A) Oil
 - (B) Liquid Gold
 - (C) Pitch
 - (D) Black Gold
92. Which of the following country is largest producer of hard coal?
- (A) Australia
 - (B) China
 - (C) India
 - (D) USA
93. _____ operations produces large scale dust and noise.
- (A) Vehicle traffic
 - (B) Machinery
 - (C) Blasting
 - (D) Excavation

94. Consider the following statement regarding site investigation for dam.
- I. Beds traversed by fault zones and fault planes are more liable to shocks during earthquake.
- II. Small scale fault zones and shear zones can be treated effectively by Grouting.
- (A) Both I and II are correct
- (B) I is correct and II is incorrect
- (C) I is incorrect and II is correct
- (D) Both I and II are incorrect
95. Which of the following Testing machine is used to determine abrasion resistance of a stone?
- (A) Dorry (B) Deere
- (C) Miller (D) Modulus
96. Engineering properties of soils are studied by
- (A) Soil mechanics
- (B) Rock mechanics
- (C) Hydro mechanics
- (D) Stress mechanics
97. Which of the following statement is correct regarding geochemical process?
- I. Dispersion is influenced by either mechanical or chemical process.
- II. Dispersion is influenced by both mechanical as well as chemical processes.
- III. Dispersion can happen under the primary as well as secondary Petrogenic conditions.
- (A) All are correct
- (B) I and III are correct II is incorrect
- (C) II and III are correct I is incorrect
- (D) I is correct II and III are incorrect
98. The geochemical classification of the elements was done by
- (A) Clarke (B) Barth
- (C) Goldschmidt (D) Eskola

99. The concept of cycle of erosion was formulated by
- (A) James Hutton
 - (B) William Morri's Davis
 - (C) Sharpe
 - (D) Reiche
100. Isolated bill of bedrock standing or persists on the peneplains are known as
- (A) Natural levee
 - (B) Monadnock
 - (C) Cuesta
 - (D) Strath
101. Richter scale of earth quake is having
- (A) 9 divisions
 - (B) 10 divisions
 - (C) 11 divisions
 - (D) 12 divisions
102. The maximum depth of origin of earthquake so far recorded in the range of
- (A) 300 – 400 kms
 - (B) 700 – 800 kms
 - (C) 500 – 600 kms
 - (D) 600 – 700 kms
103. Which is called "Valley of Ten thousand Smoke"?
- (A) Pacific
 - (B) Atlantic
 - (C) Katmai (Alaska)
 - (D) Mid-Oceanic
104. Which of the following feature does not belong to positive relief features?
- (A) Lava cone
 - (B) Hornitos
 - (C) Lava-tunnel
 - (D) Self volcano
105. The eruption nature of the volcano depends up on
- (A) temperature
 - (B) viscosity of the magna
 - (C) amount of dissolved gases
 - (D) all the above

106. Line on a map of globe connecting former positions of the pole of rotation of an individual fragment of continental lithosphere is
- (A) Pole of rotation
 - (B) Polar wandering path
 - (C) Paleo rotation curve
 - (D) Pole of equator
107. The term "Isostasy" is not related with
- (A) Gravity
 - (B) Equipoise
 - (C) Balance
 - (D) Drifting
108. The zone below the isopiestic level is called
- (A) Lithosphere
 - (B) Asthenosphere
 - (C) Hydrosphere
 - (D) Troposphere
109. The temperature in the core of the earth is
- (A) 6000°C
 - (B) 7000°C
 - (C) 1400°C
 - (D) 9000°C
110. Which part of the earth forms about 83% of the earth by volume?
- (A) Crust
 - (B) Mantle
 - (C) Core
 - (D) Lithosphere
111. Joly calculated the age of the earth by salinity-clock method as
- (A) 10 million years
 - (B) 50 million years
 - (C) 100 million years
 - (D) 1000 million years



112. The Quartzites of Cuddapah system has been extensively used as
- (A) building stones
 - (B) road stones
 - (C) both building and road stones
 - (D) none of these
113. The Cuddapah system shows the alternate sequence of
- (A) Sandstone and Shale
 - (B) Shale and Limestone
 - (C) Quartzite and Slate
 - (D) Quartzite and Limestone
114. The source of mica is a _____ rock.
- (A) Granite
 - (B) Pegmatite
 - (C) Syenite
 - (D) Granodiorite
115. The rocks of the Dharwar super group falls within the range of
- (A) 2900 – 2200 m.y
 - (B) 2500 – 2000 m.y
 - (C) 2900 – 2600 m.y
 - (D) 3200 – 2600 m.y
116. The Dharwar system comprises the oldest rocks exposed in the
- (A) Andhra Pradesh State
 - (B) Karnataka State
 - (C) Maharashtra State
 - (D) Madhyapradesh State
117. The main fossils found in Uttatur formations are
- (A) Acanthoceras
 - (B) Turrilites
 - (C) Belemnites
 - (D) Mammites, Acanthoceras, Turrilites and Belemnites

118. Thickness of the Kamli formation in the type area is about
- (A) 400 – 600 m
 - (B) 600 – 1000 m
 - (C) 800 – 1200 m
 - (D) 400 – 1800 m
119. The type area for Lower Gondwana is which of the following sequence?
- (A) The sequence of Damodar valley
 - (B) The sequence of saline series of spiti
 - (C) The sequence of Mio-Pliocene of Neyveli
 - (D) The sequence of Kashmir valley
120. Gondwana sediments are of which nature of origin?
- (A) Fluvio-marine
 - (B) Glacio-fluvial and luccustrine
 - (C) Marine
 - (D) Marine transgressive
121. The Ganurgarh chocolate shale with stromatolitic limestone and sandstone interbeds are indicative of which type of depositional environment?
- (A) Evaporitic environment
 - (B) Nearshore muddy tidal flat environment
 - (C) Shoreline - lagoon - tidal flat complex
 - (D) Fluvial to deltaic environment
122. Thickness of sediments in Bhandar group is
- (A) 400 m
 - (B) 1300-1500 m
 - (C) 100-300 m
 - (D) 3000-4000 m

123. Dinoflagellates range from
 (A) Silurian to present (B) Permian to present
(C) Carboniferous to permian (D) Lower carboniferous to permian
124. Peropteris genus is ranges from
 (A) Permian to recent
(B) Upper Carboniferous to Lower Triassic
(C) Permian - Triassic
(D) Lower carboniferous to Permian
125. Lepidodendron is the name of
 (A) Genus (B) Order
(C) Class (D) Phylum
126. Genus euryphyllum beat may reach a length and breath
 (A) Length 17 cm breath 5 cm
(B) Length 10 cm breath 5 cm
(C) Length 20 cm breath 10 cm
(D) Length 30 cm breath 10 cm
127. Gangamopteris is distinguished from Glossopteris by
(A) Presence of mid-rib (B) Absence of mid-rib
(C) Presence of spines (D) Presence of venation
128. Which were the predominant flora in the Gondwana time?
(A) Gymnosperms
(B) Pteridophytes
 (C) Both Gymnosperms and Pteridophytes
(D) Angiosperms and Spermatophyte
129. The study of the plant life of the geological past is
 (A) Palaeobotany (B) Palaeozoology
(C) Micropalaeontology (D) Palaeobiology

130. Posterior most glabellar segment in front of thorax is called
- (A) Thoracic segment
 - (B) Occipital segment
 - (C) Pygidial segment
 - (D) Ocular platform
131. In trilobites, small plate behind mouth is called
- (A) Metastome
 - (B) Meraspis
 - (C) Marginal spine
 - (D) Marginal furrow
132. In division of the body into transverse segments in anterior is
- (A) Axis
 - (B) Pleural lobes
 - (C) Cephalon
 - (D) Thorax
133. Which one of the following is correct?
- (A) Turrilites – Middle cretaceous
 - (B) Baculites – Lower cretaceous
 - (C) Scaphites – Middle cretaceous
 - (D) Neolobites – Lower cretaceous
134. Which among the following upper Triassic Ammonoids?
- (A) Columbites
 - (C) Tropites
 - (B) Ceratites
 - (D) Vermiceras

135. Piedment scarps are also called as

- (A) scarplets
- (B) fault scarps
- (C) fault line scarps
- (D) composite fault scarps

136. Example of world's most spectacular composite system of graben and step fault is

- (A) Afar Triangle, Ethiopia
- (B) Southern side of Himalaya
- (C) Rift Valley of Africa
- (D) Seaward face of Western Ghats

137. Fault strikes perpendicularly (or) diagonally to the strike of the regional structure

- (A) Strike fault
- (B) Transverse fault
- (C) Longitudinal fault
- (D) Diagonal fault

138. Left block appears to have moved towards the observer is called

- (A) Diagonal slip fault
- (B) Dextral fault
- (C) Hinge fault
- (D) Sinistral fault

139. Extra force necessary to break the bonds along the fault is

- (A) Coefficient of friction
- (B) Crushing strength
- (C) Cohesive strength
- (D) Postulated condition



140. Causes of folding by Non - tectonic processes
1. Contemporaneous deformation
 2. Collapse structure
 3. Horizontal compression
 4. Differential compaction of sediments
- (A) 3 and 4 only
 (B) 1, 3 and 4 only
 (C) 1, 2 and 3 only
 (D) 1 and 2 only
141. Process of folding in which the competent rocks are thrown into fold due to their sliding against each other under the influence of lateral compression are called
- (A) Flow folds (B) Shear folds
 (C) Flexural folding (D) Drag folding
142. _____ is change in form caused by stress.
- (A) Stress difference (B) Static pressure
 (C) Distortion (D) Dilation
143. Poisson's ratio of _____ is a good average of rocks.
- (A) 0.15 (B) 0.25
 (C) 0.35 (D) 0.45
144. The displacement of particles along the line of force is the resultant of
- (A) Normal strain (B) Axes of stress
 (C) Shear strain (D) Compression
145. The monomineralic rock of olivine is termed as
- (A) Basalt (B) Anorthosite
 (C) Dunite (D) Granite
146. Forsterite crystallizes in which of the given crystal systems
- (A) Monoclinic (B) Orthorhombic
 (C) Tetragonal (D) Triclinic

147. The soda-amphibole intermediate between glaucophane and Riebeckite is
 (A) Crossite (B) Crocidolite
(C) Nephrite (D) Gedrite
148. The fibrous, asbestiform variety of reibeckite which is indigo blue in colour is
(A) Eckermannite (B) Crocidolite
(C) Richterite (D) Arfvedsonite
149. A hexagon can be a put as a sign to exhibit which of the following symmetry element?
(A) 3-fold symmetry
 (B) 6-fold symmetry
(C) 2-fold symmetry
(D) 4-fold symmetry
150. Tremolite crystallizes in which of the following crystal system?
(A) Orthorhombic
(B) Triclinic
 (C) Monoclinic
(D) Tetragonal
151. The most common alteration product of Augite formed at a late magmatic stage is
 (A) Hornblende
(B) Riebeckite
(C) Glaucophane
(D) Anthophyllite
152. "Herringbone structure" is very much particular in which of the following pyroxene mineral?
(A) Hypersthesic
(B) Enstatite
 (C) Angite
(D) Wollastonite



153. The alteration product of k-feldspars are

- (A) Aventurine
- (B) Clay minerals
- (C) Perthite
- (D) Antiperthite

154. Latest theory for the origin of earth is called as

- (A) Nebular Hypothesis
- (B) Proto-planet hypothesis
- (C) Magnetic theory
- (D) Big-Bang theory

155. Which of the following feldspars are predominant constituents of granites?

- (A) Alkali feldspars with K and Na
- (B) Plagioclase feldspar as a whole
- (C) Calcic plagioclases
- (D) Bytownite and Anorthite

156. Labradorite is the principal constituent in which of the following rocks.

- (A) Granites
- (B) Anorthosites
- (C) Basalts
- (D) Dunites

157. Which one pair is orthoclase diminish?

- (A) Granite to Diorite
- (B) Quartz diorite to Diorite
- (C) Granite and Granodiorite
- (D) Quartz diorite to granodiorite



158. The Nepheline bearing plutonic rock, which is the predominant feldspar.
- (A) Microcline
 - (B) Labradorite
 - (C) Orthoclase
 - (D) Albite
159. Give the origin for granite which occurring as fills.
- (A) Plutonic origin
 - (B) Volcanic origin
 - (C) Origin not confirmed
 - (D) Hypabyssal
160. The Bowen's reaction series, muscovite indicate
- (A) Continuous series
 - (B) Discontinuous series
 - (C) Particular temperature
 - (D) It do not react with remaining melt
161. Identify the mineralogical contrast of Alkali kindreds.
- (A) Alkali feldspar
 - (B) Sodalime feldspar
 - (C) Augite, Hornblende, Rhombic Pyroxene
 - (D) Mica and garnet
162. Andesite is predominant of
- (A) Plagioclase feldspar
 - (B) Alkali feldspar
 - (C) Nepheline bearing minerals
 - (D) Soda rich feldspar
163. Orthoclase break up at 1170° to form
- (A) Clinoenstatite
 - (B) Reaction pair
 - (C) Olivine and liquid
 - (D) Leucite plus liquid



164. Metamorphic changes taking place during a rise in pressure and temperature are called as
- (A) Retrograde metamorphism
 - (B) Prograde metamorphism
 - (C) Isograde metamorphism
 - (D) Metasomatism metamorphism
165. The Mineral assemblage of sanidine facies is
- (A) Clinophyroxene + Laboradorite + Quartz
 - (B) Smectite + Zeolite
 - (C) Pyropegarnet + Omphacite
 - (D) Hornblende+ andesine + Quartz
166. The index mineral of medium grade metamorphism is
- (A) Lawsonite
 - (B) Hypersthene
 - (C) Staurolite
 - (D) Muscovite
167. Load metamorphism is caused by
- (A) Vertically acting stress of superincumbent rocks
 - (B) Crustal movements involved being of orogenic type
 - (C) More or less complete recrystallisation
 - (D) Combination of direct pressure and Heat.
168. Which clay rock consist of pure hydrated silicate of alumina.
- (A) Tillite
 - (B) Kaolin
 - (C) Fireclay
 - (D) Marl
169. When the Limestone is made up entirely of fossils its termed as
- (A) Coquina
 - (B) Biohermal
 - (C) Pelagic
 - (D) Biostromal

170. The calcite dissociates under the atmospheric pressure at _____ temperature.
- (A) 500°C
 - (B) 400°C
 - (C) 900°C
 - (D) 700°C
171. Which is consider as Upper part of ore deposits.
- (A) Primary Zone
 - (B) Zone of oxidation
 - (C) Zone of supergene Enrichment
 - (D) Zone of Secondary deposition
172. Petroleum and natural gas have been formed by the process of
- (A) Evaporation
 - (B) Supersaturation
 - (C) Sublimation
 - (D) Distillation
173. Which is consider as oxide group of mineral?
- (A) Barite
 - (B) Gypsum
 - (C) Limonite
 - (D) Pyrite
174. Pure quartz is called
- (A) Colourless translucent mineral
 - (B) Colourless transparent mineral
 - (C) Colourless opaque mineral
 - (D) Colourless regularly border mineral

175. Nebular hypothesis was proposed by

- (A) Kant and Laplace
- (B) Chamberlin and Moulton
- (C) Von Weizsacker
- (D) Jeans and Jeffry

176. The mineral asbestos is used extensively in the manufacture of

- (A) Portland cements
- (C) Special types of cements
- (B) Ordinary cements
- (D) None of the above

177. Mineral used for paper making is

- (A) Ball clays
- (B) High grade clays
- (C) Low grade clays
- (D) Medium grade clays

178. Match the following :

- | | |
|-----------------|------------------------|
| (a) Pure Gypsum | 1. Fibrous variety |
| (b) Alabaster | 2. Massive variety |
| (c) Rock gypsum | 3. Compact and massive |
| (d) Satin spar | 4. Crystalline variety |

- | | (a) | (b) | (c) | (d) |
|---|-----|-----|-----|-----|
| (A) | 2 | 1 | 3 | 4 |
| (B) | 1 | 2 | 3 | 4 |
| (C) | 2 | 3 | 1 | 4 |
| <input checked="" type="checkbox"/> (D) | 4 | 2 | 3 | 1 |

179. Find the correct sequence of pairs

- I. Residual liquid segregation – Residual liquid injection
- II. Immiscible liquid segregation – Immiscible liquid – Injection
- III. Bowen reaction series
- IV. Metasomatic replacement

- (A) I and II
- (B) III and IV
- (C) III and I
- (D) II and III

180. Match the following :

- | | |
|--------------------------|---|
| (a) Direct | 1. These waves suffer reflection and bounced back on to the surface |
| (b) Refracted | 2. These areal extend of various formation |
| (c) Reflected | 3. These waves getting refracted |
| (d) Electrical profiling | 4. Without penetrating much below in to the ground |
-
- | | | | | |
|---|-----|-----|-----|-----|
| | (a) | (b) | (c) | (d) |
| (A) | 3 | 4 | 2 | 1 |
| (B) | 2 | 1 | 4 | 3 |
| (C) | 1 | 2 | 3 | 4 |
| <input checked="" type="checkbox"/> (D) | 4 | 3 | 1 | 2 |

181. Hydraulic conductivity and transmissivity are

- (A) Flow in aquifer
- (B) Adhesion to grains
- (C) Unconnected pores
- (D) Permeability

182. Ground water flow from higher _____ to lower energy.

- (A) Pressure
- (B) Energy
- (C) Force
- (D) Temperature

183. Shale and Clay resistivity in Karnataka is

- (A) 0.3 Ω m
- (B) 1 Ω m
- (C) 10 Ω m
- (D) 80 - 170 Ω m

184. Boring of small dia wells upto 15 m in clay, silt and sand may be done with

- (A) Driving
- (B) Auger
- (C) Cavity
- (D) Jetting



185. Darcy's law states that 'velocity of flow in a porous media is
- (A) Inversely proportional to head loss
 - (B) Proportional to the hydraulic gradient
 - (C) Is directly proportional to the length of flow
 - (D) Inversely proportional to length of the path.
186. Permeability (K) has the dimension of velocity
- (A) $L \times T$
 - (B) L/T
 - (C) T/L
 - (D) L^2/T
187. For an aquifer, having water table in it the term can be
- (A) Unconfined aquifer
 - (B) Water table aquifer
 - (C) Confined aquifer
 - (D) Both unconfined and Water table aquifer
188. Permeability is measured
- (A) Perpendicular to the bedding planes
 - (B) Parallel to the bedding planes
 - (C) Vertically when beds are horizontal
 - (D) Diagonal to the bedding planes
189. Specific yield of a material is always
- (A) = to porosity
 - (B) > porosity
 - (C) < porosity
 - (D) \geq porosity
190. 'Artificial rainfall' is made by
- (A) Dry Ice and HCl
 - (B) Silver iodide and H_2SO_4
 - (C) Silver iodide and Dry Ice
 - (D) Calcium powder and Ammonia gas

191. Find the correct sequence of abundances of elements in the solar atmosphere.
- (A) O, He, H, N, C (B) He, H, O, N, C
 (C) O, H, He, C, N ~~(D) H, He, C, N, O~~
192. Which of the following instruments used in radioactivity prospecting?
- I. Gamma ray spectrometers.
 II. Scintillation counters.
 III. Gamma-Newton spectrometers.
 IV. Curie counters.
- (A) All (B) I and III
 (C) II and III ~~(D) I and II~~
193. Which of the following is not a technique to produce seismic waves?
- I. Poulter method
 II. Dinoseis
 III. Vibroseis
 IV. Seismoseis
- (A) I and III (B) I
 (C) II and III ~~(D) IV~~
194. Consider the following statements :
- I. Basic and ultrabasic igneous rocks show stronger magnetism than acid rocks.
 II. Metamorphic rocks show very variable magnetization
- ~~(A) Both I and II are true~~ (B) Both I and II are false
 (C) I is true II is false (D) I is false II is true
195. Consider the following statements regarding Earth's gravitational field
- I. Earth's mass can be estimated from the 'G' value of the earth surface
 II. Average value of 'G' at earth's surface is 9.80 ms^{-2}
- (A) Both I and II are true, II is not correct value of G
~~(B) Both I and II are true, II is correct value of G~~
 (C) I is false, II is true
 (D) Both I and II are false



196. Shafts which do not reach the surface of the mines are called
- (A) Inclines Shaft
 - (B) Cross cut Shaft
 - (C) Blind Shaft
 - (D) Unlined Shaft
197. The estimation of ore reserves based on general and broad observations of a qualitative nature is said to be
- (A) Inferred Ore
 - (B) Indicated Ore
 - (C) Measured Ore
 - (D) Computed Ore
198. _____ is the common techniques adopted in sampling.
- (A) Bulk
 - (B) Coning
 - (C) Channel
 - (D) Drilling
199. Consider the following statement regarding sampling.
- I. Depth and width of the channel should be uniform for all deposits.
 - II. Depth and width of the channel should be uniform in case of a banded or bedded deposits.
- (A) Both I and II are correct
 - (B) I is correct II is incorrect
 - (C) I is incorrect II is correct
 - (D) Both I and II are incorrect
200. Which of the following is not a design for the tunnel?
- (A) Circular
 - (B) Rectangular
 - (C) U-shaped
 - (D) D-shaped

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