Sl. No. :

CUGE/19

Register Number

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 Ⓐ, Ⓑ, Ⓒ and Ⓓ 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, Ⓑ is the correct answer, you have to mark as follows :

   Ⓐ ● Ⓒ Ⓓ

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.

SEAL

☼

SPACE FOR ROUGH WORK

1. The welded tuffs are known as

(A) Agglomerates
(B) Ignimbrite
(C) Nunatak
(D) Inselberg

2. Volcanic domes are also known as

(A) Hornotos
(B) Cinder cones
(C) Lava cones/domes
(D) Trenches

3. A volcano which has stopped eruption over a long period is known as

(A) Active volcano
(B) Dormant volcano
(C) Extinct volcano
(D) Dead volcano

4. The lithospheric plates slide past one another and that the plates neither gain nor lose surface areas are called

(A) Constructive plate margin
(B) Destructive plate margin
(C) Conservative plate margin
(D) All the correct

5. The Slab Pull theory is related to:

(A) Isostasy
(B) Continental drift
(C) Plate Zectonics
(D) Expanding the earth

6. Rocks formed at the ridge crests which are younger than 0.69 million years are:

(A) Normally magnetized
(B) Reversely magnetized
(C) Either normal or reversily magnetized
(D) The information is insufficient to predict the nature of magnetization involved.

7. The average radius of the Earth is:

(A) 5,871 km
(B) 6,713 km
(C) 7,613 km
(D) 6,371 km

8. The Age of the Earth is

(A) 4.2×10^9 years
(B) 4.6×10^9 years
(C) 4.8×10^9 years
(D) 4.7×10^9 years

9. Lower Gondwana rocks were deposited under

(A) Warm and humid climate
(B) Arid climate only
(C) Warm climate only
(D) Humid climate only

10. The limestones of Vindhyan system are the most important raw material for cement industries situated in the states of the most important raw material for cement industry is the limestones of Vindhyan system found in which of the following Indian States

(A) Bihar
(B) Uttarpradesh
(C) Madhyapradesh (MP) & Guntur (AP)
(D) All of the above

11. Which of the following statements are correct regarding the lithology of porcellanite stage of Lower Vindhyan?

I. Sandstone
II. Shales
III. Tuffs

Which of the following lithology of porcellanite stage of Lower Vindhyan is commonly occuring?

(A) Sandstone
(B) Shales
(C) Tuffs
(D) Sandstone, Shales and Tuffs

12. The Trichinopoly stage is subdivided into _____ sub stages.

(A) 3
(B) 2
(C) no
(D) 4

13. Uncoiled ammonites are characteristic of

(A) Uttatur stage
(B) Ariyalur stage
(C) Niniyur stage
(D) Trichinopoly stage

14. Which of the following statements are correct regarding the origin of Deccan traps?

I. They were erupted in a subaerial environment
II. Eruptions of the lava took place along linear fissures
III. A large number of dykes that have been found
IV. The lava when erupted was in a highly liquid form

(A) I is correct
(B) II is correct
(C) II, III and IV are correct
(D) I, II, III and IV are correct

15. A boring at Dhandhuka in Ahmedabad District in Gujarat Penetrated a thickness of _____ meter of Deccan trap.

(A) 311
(B) 464
(C) 215
(D) 1,070

16. The Deccan traps were issued through long narrow fissures in the Earth's crust are called

(A) Volcanic Eruption
(B) Volcanic craters
(C) Fissure type Eruption
(D) Central type Eruption

17. The concept of continental drift was very well evidenced in which of the following super groups?

(A) Dharwar super group
(B) Cuddapah super group
(C) Gondwana super group
(D) Vindhyan super group

18. ———— is the line connecting the points of zero inclination of the Earth's surface.

(A) Magnetic declination
(B) Magnetic meridian
(C) Magnetic equator
(D) Both (B) and (C)

19. The Glossopteris flora is predominant in which of the following sub-groups?

(A) Lower Gondwana
(B) Middle Gondwana
(C) Upper Gondwana
(D) Upper Vindhyan

20. Damuda series belong to which of the following sub-groups?

(A) Upper Gondwana
(B) Middle Gondwana
(C) Lower Gondwana
(D) Upper Cretaceous

21. Which among the following is a Normal contact/Facies change rather than an unconformity?

(A) Semri/Kaimur
(B) Kaimur/Rewa
(C) Rewa/Bhander
(D) Semri/Bijawar

22. Tadpatri formation comprises which of the following rock types?

(A) Limestones
(B) Shales
(C) Quartzites
(D) Marbles

23. The reproductive cones of Lepidodendron are called

(A) Sigillariastrobus
(B) Lepidostrobus
(C) Bothrodendrostrobus
(D) Lepidocarpastrobus

24. Glossopteris is the name of

(A) Phylum
(B) Class
(C) Order
(D) Genus

25. The floral species "Williamsonia" is a

(A) Cycads
(B) Conifer
(C) Ferm
(D) Bryophyte

26. The vascular plants possess a highly organised food and water conducting structure called

(A) spores
(B) stele
(C) leaf
(D) stem

27. Which among the following is non-vascular plants?

(A) Cyanophyta or Blue-green algae
(B) Psilopsida
(C) Lycopsida
(D) Pteropsida

28. The geological range of Ptilograptus is

(A) Carboniferous
(B) Devonian
(C) Silurian
(D) Ordorician

29. In graptolites smallest of thecae is called

(A) Autotheca
(B) Bitheca
(C) Stolon
(D) Stolotheca

30. The lateral and posterior borders of trilobites meet to from an angle known as

(A) Glabellar angle
(B) Genal angle
(C) Spire angle
(D) Angle of divergence

31. Trilobites, the segment on its left sides are termed as

(A) Axis
(B) Axis lobe
(C) Pleural lobes
(D) Caphalon

32. Phylloceral is

(A) Upper Triassic
(B) Lower Jurassic
(C) Middle Triassic
(D) Lower Triassic

33. Spiroceras is

(A) Devonian ammonoids
(B) Jurassic ammonoids
(C) Carborriferous ammonoids
(D) Upper Triassic ammonoids

34. Ammonoid suture line first appeared is

(A) Permian
(B) Triassic
(C) Jurassic
(D) Cretaceous

35. Parallel beds without folding , faulting and tilling of strata are called

(A) Non conformity
(B) Angular unconformity
(C) Dis conformity
(D) Break up unconformity

36. Match the following and choose the correct answer.

(a)	Gravity fault	1.	Caused by rotational stresses
(b)	Compressional fault	2.	Caused by the lateral thrust
(c)	Transurrent fault	3.	Caused by compressional forces
(d)	Pivotal fault	4.	Formed by tensional forces

	(a)	(b)	(c)	(d)
(A)	2	1	4	3
(B)	4	3	2	1
(C)	1	2	3	4
(D)	2	3	4	1

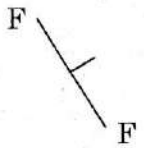
37. The total displacement measured along the fault plane is

(A) Heave
(B) Net slip
(C) Throw
(D) Hade

38. The out crops of inclined beds in the up throw side appear to have advanced in the direction of dip is called

(A) Dip fault
(B) Strike fault
(C) Folded bed
(D) Horizontal bed

39. The diagram given below represents



(A) Fault plane
(B) Fault plane with down throw
(C) Direction and amount of dip
(D) Vertical bed

40. Subsidiary folds attached to the recumbent folds are know as ————.

(A) Nappes
(B) Arch bends
(C) Shell
(D) Digitation

41. Gliding involves upper part of the basement as well as the overlying sediments are called

(A) Free gliding
(B) Hillside creep
(C) Bathydermal glide
(D) Dermal glide

42. The contraction theory expresses

1. Cooling of the earth
2. Extrusion of magma
3. Formation of denser mineral within the earth
4. Collapse structures

(A) 1 only
(B) 1 and 3 only
(C) 1, 2 and 3 only
(D) 3 and 4 only

43. ———— is the property of rocks to rupture and lead to crack propagation without any plastic deformation

(A) Rigidity
(B) Ductility
(C) Plasticity
(D) Brittleness

44. Failure of a rock body under repeated loading

(A) Fatigue
(B) Rigidity
(C) Ductility
(D) Brittleness

45. The axial ratio a : b : c = 0.49 : 1 : 0.48 is applicable to which of the given mineral species?

(A) Barite
(B) Gypsum
(C) Aximite
(D) Orthoclase

46. The axial ratio a : b: c = 0.815 : 1:1.314 is applicable to which of the given mineral species?

(A) Gypsum
(B) Barite
(C) Chalcopyrite
(D) Galena

47. Tourmaline is the type mineral for which of the following crystal classes?

(A) Rhombohedral–Hemimorphic class of Hexagonal system
(B) Tri–rhombohedral class of Hexagonal system
(C) Rhombohedral class of Hexagonal system
(D) Trigonal class of Hexagonal system

48. Apatite is the type mineral for which of the following crystal classes?

(A) Hemimorphic classes of Hexagonal system
(B) Tripyramidal class of Hexagonal system
(C) Tripyramidal class of Tetragonal system
(D) Trapezohedral class of Hexagonal system

49. Scheelite is the type mineral for which of the following crystal classes?

(A) Sphenoidal class of Tetragonal system
(B) Hemimorphic class of Tetragonal system
(C) Tripyramidal class of Tetragonal system
(D) Trapezohedral class of Tetragonal system

50. Which of the following mineral given is a soda pyroxene?

(A) Spodumeme
(B) Aegirine
(C) Enstatite
(D) Diopside

51. In electrical resistivity survey, the field generated data is known as

(A) Approximate resistivity
(B) Apparent resistivity
(C) Resistivity
(D) True resistivity

52. The chemical composition of Fe SiO_3 corresponds to which of the following pyroxene group mineral?

(A) Hypersthene
(B) Ferrosilite
(C) Enstatite
(D) Diopside

53. Jadeite is a pyroxene group mineral that crystallizes in which of the following crystal systems?

(A) Triclimic
(B) Tetragonal
(C) Orthorhombic
(D) Monoclimic

54. Hypersthene crystallizes in which of the following crystal system?

(A) Monoclimic
(B) Triclimic
(C) Orthorhombic
(D) Hexagonal

55. Which of the following feldspathoidal mineral shows a moderate Birefringence?

(A) Leucite
(B) Cancrinite
(C) Nepheline
(D) Sodalite

56. "Quadrille structure" is typical in which of the following feldspars

(A) Albite
(B) Labradorite
(C) Microcline
(D) Orthoclase

57. Which one is not a hypalsyssal group rocks?

(A) Dykes
(B) Sills
(C) Small lacolith
(D) Flow-structure

58. The chemical classification of igneous rocks are essential for discussion of

(A) Origin
(B) Color index
(C) Silica saturation index
(D) Crystallisation process

59. The carbonates are composed mainly of calcite, ————and or ankerite.

(A) Pyroxene
(B) Fluorite
(C) Monazite
(D) Dolomite

60. In the variation diagram, soda and potash curves, bend upward to the right of indicates,

(A) Increase the acid members
(B) Increase the base
(C) Indicate the saturation point
(D) Base line

61. Tepherite is a

(A) Olivine-rich basalt
(B) Olivine-free basalt
(C) Peridotite type
(D) Lamprophyres type

62. Peridotite generally forms as

(A) Sills and dykes
(B) Batholiths
(C) Chonolith
(D) Bysoalith

63. An altered porphyritic mica peridotite containing olivine and phlogopite is associated with which one of the following

(A) Breccia
(B) Kimberlite
(C) Spilite
(D) Serpentinite

64. Less than 35% of mafic minerals like hornblende or hypersthene (± augite) represents the rock

(A) Basalt
(B) Andesite
(C) Gabbro
(D) Diorite

65. Which metamorphic rock is hypersthene granite?

(A) Schist
(B) Gneiss
(C) Slate
(D) Charnockite

66. When the attacking fluids are in vaporous state the process is distinguished as

(A) Granulation
(B) Penumatolytic metasomatism
(C) Dolomitization
(D) Kaolinisation

67. The metamorphic rock have predominance of flaky, lamellar, tabular, rod - like and highly cleavable minerals that structure is called as

(A) Granulose structure
(B) Schistose structure
(C) Gneissose structure
(D) Maculose structure

68. Phyllite and fine – grained mica Schists have been formed from gneisses of deep seated zone this process is called

(A) Regressive metamorphism
(B) Relicts
(C) Saussuritisation
(D) Plutonic Metamorphism

69. Who is proposed by at present ten metamorphic facies?

(A) Myashiro
(B) Eskola
(C) Fermor
(D) Vanhise

70. The green – schist facies is

(A) Medium grade metamorphism
(B) High grade metamorphism
(C) Low grade metamorphism
(D) Medium to High grade metamorphism

71. The process by which heavy minerals are separated from light ones are called

(A) Residual concentration process (B) Sublimation process

(C) Mechanical concentration process (D) Replacement process

72. Which ore mineral deposit is formed by Breccia filling type?

(A) Baryte (B) Uranium

(C) Gold (D) Galana

73. Which is consider as a Gangue minerals?

(A) Liquid minerals

(B) Fe – rich minerals

(C) Associated non metalic materials of a deposit

(D) Metal content of the ore

74. Match the following :

(a)	Ruby	1.	Yellow variety of corundum
(b)	Sapphire	2.	Green variety of corundum
(c)	O.Emerald	3.	Blue variety of corundum
(d)	O.Topaz	4.	Red variety of corundum

	(a)	(b)	(c)	(d)
(A)	4	3	2	1
(B)	2	1	4	3
(C)	2	3	1	4
(D)	4	2	3	1

75. Quartz when heated, transforms into high temperature modification, choose the correct one according to increasing temperature

(A) Quartz $\underset{}{\overset{870°C}{\rightleftharpoons}}$ Cristobalite $\underset{}{\overset{1470°C}{\rightleftharpoons}}$ Tridymite $\underset{}{\overset{1713°C}{\rightleftharpoons}}$ melt

(B) Quartz $\underset{}{\overset{870°C}{\rightleftharpoons}}$ Tridymite $\underset{}{\overset{1470°C}{\rightleftharpoons}}$ Cristobalite $\underset{}{\overset{1713°C}{\rightleftharpoons}}$ melt

(C) Tridymite $\underset{}{\overset{870°C}{\rightleftharpoons}}$ Quartz $\underset{}{\overset{1470°C}{\rightleftharpoons}}$ Cristobalite $\underset{}{\overset{1713°C}{\rightleftharpoons}}$ melt

(D) Melt $\underset{}{\overset{870°C}{\rightleftharpoons}}$ Cristobalite $\underset{}{\overset{1470°C}{\rightleftharpoons}}$ Tridymite $\underset{}{\overset{1713°C}{\rightleftharpoons}}$ Quartz

76. The pure variety of corundum forms Gems called

(A) Ruby and Sapphire
(B) Diamond and tourmaline
(C) Topaz and Beryl
(D) Garnet and Zircon

77. Bleaching clay is called

(A) Ball Clay
(B) Fuller's Earth
(C) Bentonite
(D) Fire clay

78. Match the following Distribution of Gypsum deposits in India

	List I		List II
(a)	Jodhpur	1.	Himachal Pradesh
(b)	Tiruchirapally	2.	Jammu-kashmir
(c)	Doda	3.	Tamil Nadu
(d)	Chamba	4.	Rajasthan

	(a)	(b)	(c)	(d)
(A)	4	3	2	1
(B)	1	2	3	4
(C)	2	1	3	4
(D)	4	1	3	2

79. Which of the following correctly paired

(A) Gypsum – Cement
(B) Kyanite – Alloys
(C) Sillimanite – Paint
(D) Feldspar – Irmandstell

80. Which of the following is incorrectly paired.

(A) Hish – magnetite – pyrrhotite – Tourmaline
(B) Intermediate – Challopyrite – Galena – Sphalerite
(C) Low – Stibnite – Realgar – Cinnabar
(D) Quartz – Feldspar – Feldspethoid

81. Resistivity meter a,d,c type manufactured by

(A) Indian Institute of Technology, Mumbai

(B) National Geophysical Research Institute, Hyderabad

(C) Geological Survey of India, Kolkatta

(D) Indian Institute of Geomagnetism, Mumbai

82. Which of the following is incorrectly paired?

(A) Fresh water – Fresh water and mineralized water may be obtained from Artesian well

(B) Salt water – In thicker artesian aquifers, the lower zone may contain

(C) Artesian aquifer – Is not a good source of water supply

(D) Peizometric surface – Must lie well above the ground surface

83. Which of the following statements are incorrect?

I. Sedimentary rocks are relatively highly porous

II. Porosity is storage capacity of an aquifer

III. The crystalline rocks where all fractures are thoroughly interconnected

IV. Velocity factor is groundwater is almost negligible

(A) I and II (B) III

(C) II and III (D) I and IV

84. Average permeability of gravel is

(A) 41 m / day (B) 4100 m / day

(C) 410 m / day (D) 4.10 m / day

85. In electrical resistivity method, inner electrode comprises of porous pots filled with ———— solution.

(A) H_2SO_4 (B) $CuSO_4$

(C) HCl (D) Citric acid

86. Resistivity of Brackish water in Karnataka is

(A) $0.3\Omega m$ (B) $1\Omega m$

(C) $5\Omega m$ (D) $< 40\Omega m$

87. Velocity of ground water flow in a porous media is

(A) inversly proportional to hydraulic gradient

(B) proportional to hydraulic gradient

(C) not related to hydraulic gradient

(D) related to piezometric head

88. In Deccan traps the columnar joints and vesicules have

(A) Primary porosity (B) Secondary porosity

(C) Both primary and secondary porosites (D) They are impervious

89. Permeability of a material is a measure of

(A) Voids available in the material

(B) Voids and solid particle available

(C) Capacity to transmit water thro' interstics

(D) Capacity to retain water in the material

90. The ratio of volume of water retained in the rock to the total volume of the rock is called as

(A) Specific retention (B) Specific yield

(C) Porosity (D) Wilting point

91. Precipitation in the form of ice is called

(A) Drizzle (B) Sleet

(C) Snow (D) Hail

92. Which one is known as "fossil water"?

(A) Juvenile H_2O (B) Plutonic water

(C) Comate water (D) Meteoric water

93. Consider the following statement regarding landslide.

I. Slumping is the sudden movement of rock mass

II. Subsidence is the sudden movement of top soil.

(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

94. Consider the following regarding a proposed Tunnel project

I. Aerial Photography and Seismic Survey are commonly adopted

II. Hydrological conditions, particularly hydrostatic heads are observed

(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

95. Consider the Statement regarding site selection of dam

I. A dam is essentially a water impounding structure

II. Perfectly Impervious rocks throughout the site may not be available in all cases

(A) Both I and II are True
(B) I is True II is False
(C) I is False II is True
(D) Both I and II are False

96. Consider the following statements regarding Building stones

I. Gondwana formations of India have very good quality building stones

II. The fine grained Sand stones of cuttuk is known as Athgarh Sandstone

(A) Both I and II are True
(B) I is True II is False
(C) I is False II is True
(D) Both I and II are False

97. Which of the following is not a building stone?

(A) Granite
(B) Marble
(C) Moon Stone
(D) Slate

98. Consider the following statements regarding geochemical element dispersion.

I. Mobility is only relative

II. Among Pb, Au, Cu, Zr, and Ag, Pb is most mobile

III. Influence of environment is an Important factor

(A) All are correct
(B) II and III are correct I is Incorrect
(C) I and II are correct III is Incorrect
(D) I and III are correct II is Incorrect

99. The general term used for mass movement of rocks under the influence of gravity is known as

(A) Rock fall
(B) Slumping
(C) Mass wasting
(D) Lahar

100. Steep slope resulted from differential weathering of rocks are known as

(A) Escarpment
(B) Cuesta
(C) Strath
(D) Mesa

101. "Shadow Zone" of earth quakes is in between

(A) 105° – 145°
(B) 100° – 130°
(C) 90° – 145°
(D) 105° – 160°

102. Causes of tectonic earthquake is

(A) Faulting, breaking and folding of the layers of the earth
(B) Flow of hot magma in a erupting volcanoes
(C) Rising of underground wave
(D) All of the above

103. Hornitos are the lava flows of ———— size.

(A) small
(B) large
(C) medium
(D) very small

104. Barren Island volcano is characterised by

(A) Submarine volcanism
(B) Resurgent volcanism
(C) Continental volcanism
(D) All the above

105. According to Harry Hess, the Sea floor spreading is due to:

(A) Spreading of Sial layer

(B) Mantle-wide ascending currents

(C) Mantle-wide convection currents

(D) Spreading of mantle plumes

106. In the continental drift theory who gave the idea that the continent broke due to tidal force of moon:

(A) Wegener

(B) Henry Less

(C) Taylor

(D) Du Toil

107. Isostasy exists in the:

(A) Crust only

(B) Crust and upper mantle only

(C) Crust and transition zone only

(D) Crust and lower mantle only

108. "At certain level of the Earth's crust all columns of material having unit-cross sectional area must have the same mass" This statement refers to:

(A) Base level of Erosion

(B) Principles of Isostasy

(C) Law of Conservation of mass

(D) Dirac's principle

109. The composition of sial is:

(A) Basaltic

(B) Ultrabasic

(C) Granitic to granodioritic

(D) Magic

110. Gutenberg discontinuity lies at a depth of

(A) 2,700 kms

(B) 2,900 kms

(C) 2,100 kms

(D) 4,210 kms

111. The Vindhyan System of rocks rest unconformably over the

(A) Younger Cuddapah rocks

(B) Older Cuddapah rocks

(C) Both older and younger Cuddapah rocks

(D) Precambrian rocks

112. The equivalent of Cuddapah system Andhra Pradesh is

(A) Dogra slates of Kashmir

(B) Chail and Simla Slates of H.P.

(C) Both (A) and (B)

(D) None of these

113. The length of Cuddapah basin of Andhra is about

(A) 350 km

(B) 340 km

(C) 330 km

(D) 300 km

114. The type area for the Dharwarian system of rocks is

(A) Rajasthan

(B) Karnataka

(C) Madhya Pradesh

(D) Orissa

115. Who has classified the rocks of Dharwar system of South India into Chloritic division and Homblendic division?

(A) B. Rama Rao

(B) L.P. Mathur

(C) W.F. Smith

(D) W.D. West

116. According to B. Rama Rao. The Dharwarian rocks are classified into

(A) Lowe Dharwar, Upper Dharwar

(B) Lower, Middle and Upper Dharwars

(C) No classification of Dharwar System

(D) Quartzites, Calcareous and Ferruginous silts

117. Thickness of saline series is almost

(A) 500 m
(B) 150 m
(C) 100 m
(D) 300 m

118. Panjal Volcanics is of which of the stratigraphic age

(A) Lower Permian – Upper Permian
(B) Lowermost Permian – Carboniferous
(C) Devomain
(D) Cambrian – Middle Silurian

119. Consider the following statements :

I. Unit of gravitational acceleration 'Gal' is named after Italian Scientist Galileo
II. In magnetic prospecting, unit Milligal is employed
III. Gravitational force increases where mineral deposits have higher density
IV. The gravitational acceleration varies from 978 cm/sec^2 to 983 cm/sec^2

(A) I, II and IV are correct
(B) II, III and IV are correct
(C) All are incorrect
(D) All are correct

120. Kamlial formation belongs to which of the following sub-groups?

(A) Lower Gondwana
(B) Middle Siwaliks
(C) Upper Siwaliks
(D) Lower Siwaliks

121. The Siwalik formation has a rich assemblage of which of the following types of fauna?

(A) Vertebrate fauna
(B) Invertebrate fauna
(C) Stromatolites
(D) Trilobites

122. Cumbum formation comprises which of the following rock types?

(A) Limestones
(B) Shales
(C) Quartzites
(D) Granites

123. Cuddapah basin of Andhra Pradesh has a spread over

(A) 26,000 sq.km
(B) 30,000 sq.km
(C) 36,000 sq.km
(D) 20,000 sq.km

124. Kuduremukh area is known for exploration of which of the following mineral deposit?

(A) Zine deposits
(B) Mica
(C) Iron ore
(D) Gold

125. The three microfossil groups most commonly used are

(A) Conodonts, Acritarchs, Ebridians
(B) Ostracodes, Diatoms, Radiolaria
(C) Diatoms, Conodonts, Radiolaria
(D) Foraminifera, Nannofossils and Polynomorphs

126. Microscopic siliceous algae under Diatomacea are called

(A) Bacteria
(B) Diatoms
(C) Coccoliths
(D) Silicofiagellates

127. The roots of Bothrodendron are placed under the genus

(A) Stigmaria
(B) Calamites
(C) Annularia
(D) Phyllotheca

128. In Graptolites, the theca were attached to a rock by a rod like branch known as

(A) Sicula
(B) Stipe
(C) Stolotheca
(D) Theca

129. In trilobites the arched anterior extension of axial segments of thorax and front of pygidium which project beneath next forward segment is called

(A) articulating furrow
(B) axial node
(C) axial segment
(D) articulating half segment / ring

130. The correct order of the larval development of trilobites is

(A) Protaspid stage-Meras pid stage-Holaspid stage
(B) Meraspid stage-protaspid stage-Holaspid stage
(C) Protaspid stage-Holaspid stage-Meraspid stage
(D) Holaspid stage-Meraspid stage-Protaspid stage

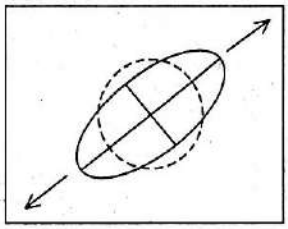
131. Which among the following belongs to the order of trilobites?

(A) Proparia
(B) Gymnoblastea
(C) Graptolithina
(D) Aleyonaria

132. Trilobites, transverse division of thorax consisting of an axial and two pleural portions is called

(A) Thorax
(B) Pygidial segments
(C) Occipital segments
(D) Thoracic segments

133. The deformation circle into ellipse given below represents



(A) Compression
(B) Couple
(C) Torsion
(D) Tension

134. Joints resulting from slight elongation parallel to the areas of folds are called

(A) Extension joints
(B) Release joints
(C) Horizontal joints
(D) Conjugate joints

135. More ductile substances, rupture may be preceded by

(A) Tension
(B) Compression
(C) Shear
(D) Necking

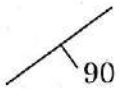
136. ———————— lie at or near the foot of mountain ranges and are confined to areas of active faulting.

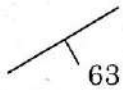
(A) Fault line scarps
(B) Piedmont scarps
(C) Offset ridge
(D) Fault scarps

137. ———————— owes its relief directly to the movement along fault.

(A) Composite fault
(B) Scarplets
(C) Fault line scarp
(D) Fault scarp

138. Strike slip fault, showing relative movement

(A) 

(B) 

(C) 

(D) 

139. Line xy is perpendicular to ab and cd and is 160 feet long; the bed drops 100 feet vertically in 160 feet horizontally, determine the dip

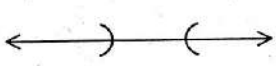
(A) $\delta = 30^\circ$

(B) $\delta = 32^\circ$

(C) $\delta = 34^\circ$

(D) $\delta = 36^\circ$

140. The symbol given below represents



(A) Doubly plunging Anticline

(B) Doubly plunging Syncline

(C) Non-plunging Anticline

(D) Non-plunging Syncline

141. According to Ramsay, the degree of curvature in the outer arc of the fold is less than that of the curvature of the inner arc is called

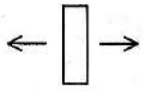
(A) Class 1 Folds

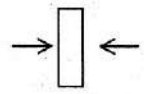
(B) Class 2 Folds

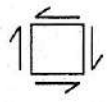
(C) Class 3 Folds

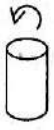
(D) Class 4 Folds

142. Match the differential forces which they belong :

(a)  1. Couple

(b)  2. Tension

(c)  3. Compression

(d)  4. Torsion

	(a)	(b)	(c)	(d)
(A)	1	2	3	4
(B)	2	1	4	3
(C)	2	3	1	4
(D)	1	4	2	3

143. Peridot is a gem variety of

(A) Olivine (B) Pyroxene

(C) Amphibole (D) Feldspar

144. Ca Mg SiO_4 is the chemical composition corresponding to which of the given minerals

(A) Hypersthene (B) Hornblende

(C) Monticellite (D) Wollastonite

145. Cuprite is the type mineral for which of the following crystal classes?

(A) Normal class of Isometric system

(B) Tetrahedral class of Isometric system

(C) Sphenoidal class of Tetragonal system

(D) Plagiohedral class of Isometric system

146. The Aluminous variety of Anthophyllite is known as

(A) Grunerite

(B) Gedrite

(C) Cummingtonite

(D) Lamprobolite

147. The form and habits exhibited by Anthophyllite is

(A) Long slender to Acicular

(B) Prismatic tabular

(C) Stout prismatic

(D) Globular

148. Glaucophane is an Amphibole group mineral that crystallizes in which of the following crystal systems?

(A) Monoclinic

(B) Triclinic

(C) Orthorhombic

(D) Tetragonal

149. Grunerite crystallizes in which of the following crystal systems?

(A) Triclinic

(B) Orthorhombic

(C) Tetragonal

(D) Monoclinic

150. "Cymatolite" is an alteration product of which of the following pyroxene group mineral?

(A) Wollastonite

(B) Spodumeme

(C) Aegirine

(D) Diopside

151. Which of the following statements falls true for the mineral nepheline?

(A) Nepheline occurs with original free quartz

(B) Nepheline donot occur with original free quartz

(C) Nepheline occurs along with saturated rocks

(D) Nepheline occurs along with over saturated rocks

152. Melilite crystallizes in which of the following crystal systems?

(A) Isometric

(B) Pseudoisometric

(C) Tetragonal

(D) Hexagonal

153. The feldspar group of minerals range in hardness from

(A) 3.0 – 3.5

(B) 6.0 – 6.5

(C) 4.0 – 4.5

(D) 7.5 – 8.5

154. The pearly to opalascent variety of Alkali feldspar is known as

(A) Aventurine

(B) Moonstone

(C) Sunstone

(D) Cleavelandite

155. The angle of inclination β in orthoclase feldspar is

(A) 90°

(B) 63° 57'

(C) 87°

(D) 83° 54'

156. Reverse zoning in plagioclase feldspars show

(A) Calcic core and a sodic rim

(B) Sodic core and calcic rim

(C) Intercalations of sodic and calcic layers

(D) Spherulitic growth of calcic and sodic feldspars

157. When augite is a predominant mafic minerals in basalt then the term is

(A) Ankaramite (B) Spilite

(C) Alkali basalt (D) Limburgite

158. The blue feldspar in a Alkali syenite is a

(A) Labradorite (B) Kyanite

(C) Anorthoclase (D) Sodalite

159. Find out the soda bearing feldspar which is present in granite

(A) Orthoclase (B) Apatite

(C) Albite (D) Quartz

160. In a continuous Bowen's series,plagioclase feldspar is gradually change from

(A) Calcic to Olivine (B) Calcic to Biotite

(C) Calcic to Sodium (D) Calcic to ca-pyroxene

161. The peninsular India represent which suite?

(A) Spilitic suite (B) Arctic suite

(C) Ijolite-melteigite (D) Trachydolerite

162. When an equal amount of alkali feldspar and sodatime feldspar are present in a rock is called as

(A) Trachyandesite (B) Hornblende trachyte

(C) Augite trachyte (D) Biotite trachyte

163. When clinoenstatite is heated it will breakup into

(A) Olivine and liquid (B) Leucite and liquid

(C) Pyroxene and amphibole (D) Pyroxene and liquid

164. The constant proportion of the two constituents simultaneously crystallise is called as

(A) Metastable (B) Eutectics

(C) Liquiders (D) Solidus

165. Which lime stone varities have been formed by biogenic precipitation from Sea water

(A) Allochthonous
(B) Autochthonous
(C) Argillaceous limestone
(D) Kankar

166. The accumulation of limy secretion of floating type of sea organisms presence in the

(A) Biohermal lime stone
(B) Pelagic lime stone
(C) Calc – Sinter lime stone
(D) Biostromal lime stone

167. Differing chemical and mineralogical nature to the enclosing rocks are

(A) Concretions
(B) Secretions
(C) Colloids
(D) Dendrites

168. Transformation of loose sediments deposited in the settlement basin to solid cohesive rock mass this is called as

(A) Precipitation
(B) Evaporation
(C) Continued evaporation
(D) Diagenesis

169. A sandstone which splits along the micaceous layers is called as

(A) Flag stone
(B) Free stone
(C) Silt stone
(D) Gray wake

170. Crater like depressions is formed by

(A) Ripple marks
(B) Rain prints
(C) Mud cracks
(D) Graded bedding

171. The very fine megascopic layer in a sedimentary beds are known as

(A) Stratum
(B) Bed
(C) Lamina
(D) Diagenesis

172. Consider the mineral which have the melting point of 1713°C

(A) Olivine
(B) Cristobalite
(C) Sillimanite
(D) Tridymite

173. Which of the following is correctly paired?

(A) Magnesite – Irregular veins and fracture zone
(B) Bort – Spheroid aggregates with radiated structure
(C) Ballas – Imperfectly crystallised diamond
(D) Diamond – Crystalline modification of mixed carbon

174. Most copper deposits have been formed.

(A) Hydrothermal solution with replacement
(B) Sedimentary deposits
(C) Metamorphic deposits
(D) Both Sedimentary and metamorphic deposits

175. The most-common ore of lead is called

(A) Psilomelane
(B) Chromite
(C) Phrite
(D) Galena

176. Match the List I and List II correctly and select your answer using the codes given below :

List I		List II
(a)	Pyrolusite	1. $Mn_2O_3, 2H_2O$
(b)	Hausmanite	2. Mn_2O_3
(c)	Braunite	3. Mn_3O_4
(d)	Psilomelane	4. MnO_2

	(a)	(b)	(c)	(d)
(A)	4	3	2	1
(B)	3	2	1	4
(C)	2	1	4	3
(D)	1	2	3	4

177. The important minerals of lead

(A) Quarta – Feldspar – Olivine
(B) Sphalerite – ZincBlende – Zincite
(C) Galena – Cerussite – Anglesite
(D) Hemimorphite – Calamine – Barate

178. Find the correct sequence of following Iron ores.

(A) Goethite – limolite – laterite – phrite
(B) Magnetite – Hematite – Limonite – Goethite
(C) Azurite – malachite – Cuprite – Corellite
(D) Malachite – Pyrite – Chakopyrite – Enargite

179. Match the following in correct match :

(a)	Monazite	1.	Kerala
(b)	Gold	2.	Tamilnadu
(c)	Lignite	3.	Karnataka
(d)	Diamond	4.	Madhyapradesh

	(a)	(b)	(c)	(d)
(A)	2	3	4	1
(B)	1	3	2	4
(C)	3	2	1	4
(D)	2	1	3	4

180. Point out the wrong statement in the following statements regarding Hydrothermal deposits :

(A) There are three essential conditions for the formation of hydrothermal deposits

(B) The main diamond ferrous pipe is of metamorphic origin

(C) At suitable physico-chemical environment deposition takes place

(D) Hydrothermal deposits occur in most common forms are veins and cavity filling

181. Epithermal deposits are formed at

(A) temperature range from 200°C to 300°C

(B) temperature range from 300°C to 400°C

(C) temperature range from 50°C to 200°C

(D) temperature range from 50°C to 100°C

182. The processes of formation of mineral deposits are grouped into

(A) magmatic, sedimentary, metamorphic

(B) residual liquid segregation

(C) residual liquid injection

(D) immiscible liquid segregation

183. Which of the following statements are incorrect?

I. Open wells storage capacity of water is available in the well itself

II. Does not require sophisticated equipment

III. Do not require much space

IV. Can be constructed quickly

(A) I and II (B) I and III

(C) III, IV (D) II

184. Apparent resistivity for measured resistance in schumberger array is determined by ———— formula

(A) $\rho a = \frac{4b}{\pi L^2 R}$

(B) $\rho a = \frac{\pi L^2}{4b} R$

(C) $\rho a = \frac{\pi L^2}{4b.R}$

(D) $\rho a = \frac{\pi L^2 4b}{R}$

185. SAR is defined as

(A) $\frac{Na}{Ca + Mg}$

(B) $\frac{Ca + Mg}{Na}$

(C) $\frac{Na^+}{\sqrt{\frac{Ca^{2+} + Mg^{2+}}{2}}}$

(D) $\sqrt{\frac{(Ca + Mg)/2}{Na}}$

186. In Ghyben – Herzberg principle, the interface occuring at a depth h_s BMSL given by

(A) $(hs - hf)rf = h_s r_s$

(B) $(h_s + h_f)rf = h_s r_s$

(C) $\frac{(h_s + h_f}{r_f} = \frac{h_s}{r_s}$

(D) $\frac{(h_s + h_f)}{h_s} = \frac{r_f}{r_s}$

187. Cable tool method

(A) for drilling unconsolidated strata

(B) reverse-circulation method

(C) drilling accomplished with compressed air

(D) drilling is accomplished by lifting and dropping

188. Permeameter is the instrument used to measure

(A) Porosity of rock

(B) Permeability of rock

(C) Infiltration rate of g. water

(D) Yield of g. water

189. The capital cost for Filter point tube wells in orissa alluviam is

(A) Rs.5,000 – 15,000

(B) Rs.10,000 –15,000

(C) Rs.5,000 – 10,000

(D) Rs.3,000 – 10,000

190. Match List I with List II and select correct answer :

	List I		List II
(a)	Chaliophile	1.	Silicate
(b)	Atmophile	2.	Sulfide
(c)	Lithophile	3.	Iron
(d)	Siderophile	4.	Atmosphere

	(a)	(b)	(c)	(d)
(A)	2	3	1	4
(B)	2	4	1	3
(C)	1	2	3	4
(D)	1	4	3	2

191. Widmanstatten figure generally found in

(A) Chondrites (B) Achondrites

(C) Siderites (D) Siderolites

192. Consider the following statements regarding Radioactivity

I. Radioactivity is measured in Curie

II. Geiger – Muller counter is used in radioactive prospecting

III. Scintillation counters are also used in prospecting

IV. Scintillation counter consists usually Argon gas

(A) All are correct

(B) I and II are correct III and IV are Incorrect

(C) I, II and III are correct IV is Incorrect

(D) I is correct, II, III and IV are Incorrect

193. Consider the following statements

I. Geophone is a detector

II. Geophone picks up vibrations in the ground and convert to electric pulses

III. Geophone is usually known as seismometer

IV. There are several types of geophones in use

(A) All are True (B) I, II and IV are True

(C) II, III and IV are True (D) I and II are True

194. Which of the following metallic element found in crude oil?

(A) Iron (B) Copper

(C) Nickel (D) Zinc

195. Lowest rank soft, earthy or crumbly lignite is called

(A) Bituminous coal (B) Bog coal

(C) Boghead coal (D) Torbanite

196. Which of the following is NOT an impact of mining?

(A) Weathering (B) Sedimentation

(C) Water logging (D) Sea water intrusion

197. Consider the following statement :

I. In mines, shafts can be away from the ore body

II. If it connected by tunnels known as Drive

(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

198. The ore estimated based partly on computations and partly on measurements is said to be

(A) Inferred ore (B) Indicated ore

(C) Measured ore (D) Computed ore

199. Which of the following sampling technique is best suited to beded and vein type mineral deposit?

(A) Grab (B) Channel

(C) Bulk (D) Drilling

200. Assertion (A) – Surface of the ore bed or veins should be cleaned

Reason (R) – To asses the Grade of the ore

(A) Both (A) and (R) are True ; (R) is correct explanation of (A)

(B) Both (A) and (R) are True ; (R) is not a correct explanation of (A)

(C) Both (A) and (R) are False

(D) (A) is True but (R) is False

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