EARTH SCIENCES

Question Booklet Sl. No.

200062

Name & Signature of the Invigilator

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PAPER – II

CODE-20

OMR Answer Sheet No. :

Roll No. :

(in figures as in Hall Ticket)

Roll Number in words : .....

.....

Time : 2 Hours] **No. of Printed Pages : 16** **[Maximum Marks : 200**

Instructions for the Candidates

1. Write your Roll Number in the space provided on the top of this page.
2. This paper consists of **one hundred (100)** multiple choice type of questions. **All** questions are compulsory.
3. At the commencement of examination, the question booklet will be given to you. In the first 5 minutes, you are requested to open the booklet and compulsorily examine it as below :
   (i) To have access to the Question Booklet, tear off the paper seal on the edge of this cover page. Do not accept a booklet without sticker seal and do not accept an open booklet.
   (ii) Tally the number of pages and number of questions in the booklet with the information printed on the cover page. Faulty booklets due to pages/questions missing or duplicate or not in serial order or any other discrepancy should be got replaced immediately by a correct booklet from the invigilator within the period of 5 minutes. Afterwards, neither the Question Booklet will be replaced nor any extra time will be given.
   (iii) After this verification is over, the Test Booklet Number should be entered on the OMR Answer Sheet and the OMR Answer Sheet Number should be entered on this Test Booklet.
4. Each item has four alternative responses marked (A), (B), (C) and (D). You have to darken the oval as indicated below on the correct response against each item.
   Example: (A) ● (C) (D) where (B) is the correct response.
5. Your responses to the items are to be indicated on the OMR Answer Sheet under Paper – II only. If you mark your response at any place other than in the oval in the OMR Answer Sheet, it will not be evaluated.
6. Rough Work is to be done in the end of this booklet.
7. If you write your Name, Roll Number, Phone Number or put any mark on any part of the OMR Answer Sheet, except for the space allotted for the relevant entries, which may disclose your identity, or use abusive language or employ any other unfair means, such as change of response by scratching or using white fluid, you will render yourself liable to disqualification.
8. You have to return the original OMR Answer Sheet to the invigilator at the end of the examination compulsorily and must not carry it with you outside the Examination Hall. You are however, allowed to carry original question booklet and duplicate copy of OMR Answer Sheet on conclusion of examination.
9. Use only Blue/Black Ball point pen.
10. Use of any calculator or any electronic devices or log table etc., are prohibited.
11. There shall be no negative marking.

પરીક્ષાર્થીઓ માટે સૂચનાઓ

1. આ પાનાની ટોચ પર દર્શાવેલી જગ્યામાં તમારો રોલ નંબર લખો.
2. આ પ્રશ્નપત્રમાં બહુવૈકલ્પિક ઉત્તરો ધરાવતા સો (૧૦૦) પ્રશ્નો આપેલા છે. બધા જ પ્રશ્નો ફરજિયાત છે.
3. પરીક્ષાની શરૂઆતમાં આપને પ્રશ્નપુસ્તિકા આપવામાં આવશે. પ્રથમ પાંચ (૫) મિનિટ દરમ્યાન તમારે પ્રશ્નપુસ્તિકા ખોલી અને ફરજિયાતપણે નીચે મુજબ પરીક્ષણ કરવું :
   (i) પ્રશ્નપુસ્તિકાનો વપરાશ કરવા માટે આ કવર પૃષ્ઠની ધાર પર આપેલ સીલ સ્ટીકર ફાડી નાખો. કોઈપણ સંજોગોમાં સીલ સ્ટીકર વગરની કે ખુલ્લી પ્રશ્નપુસ્તિકા સ્વીકારશો નહીં.
   (ii) કવર પૃષ્ઠ પર છપાયેલ નિર્દેશાનુસાર પ્રશ્નપુસ્તિકાના પ્રશ્નો, પૃષ્ઠો અને સંખ્યાને બરાબર ચકાસી લો. ખામીયુક્ત પ્રશ્નપુસ્તિકા કે જેમાં પ્રશ્નો/ પૃષ્ઠો ઓછાં હોય, બે વાર છપાયા હોય, અનુક્રમમાં અથવા અન્ય કોઈ ફરક હોય અર્થાત કોઈપણ સંજોગોમાં ખામીયુક્ત પ્રશ્નપુસ્તિકા સ્વીકારશો નહીં. અને જો ખામીયુક્ત પ્રશ્નપુસ્તિકા મળી હોય તો નિરીક્ષક પાસેથી તુરંત જ બીજી સારી પ્રશ્નપુસ્તિકા મેળવી લેવી. આ માટે ઉમેદવારને પાંચ (૫) મિનિટનો સમયગાળો આપવામાં આવશે. પછીથી, પ્રશ્નપુસ્તિકા બદલવામાં આવશે નહીં કે કોઈ વધારાનો સમયગાળો આપવામાં આવશે નહીં.
   (iii) આ ચકાસણી સમાપ્ત થાય પછી, પ્રશ્નપુસ્તિકાનો નંબર OMR જવાબ પત્રક પર લખવો અને OMR જવાબ પત્રકનો નંબર પ્રશ્નપુસ્તિકા પર લખવો.
4. પ્રત્યેક પ્રશ્ન માટે ચાર જવાબ વિકલ્પ (A), (B), (C) અને (D) આપવામાં આવેલ છે. તમારે સાચા જવાબના ઓવલ (oval) ને નીચે આપેલ ઉદાહરણ મુજબ પેનથી ભરીને સંપૂર્ણ કાળું કરવાનું રહેશે.
   ઉદાહરણ : (A) ● (C) (D) કે જ્યાં (B) સાચો જવાબ છે.
5. આ પ્રશ્નપુસ્તિકાના પ્રશ્નોના જવાબ અલગથી આપવામાં આવેલ OMR જવાબ પત્રકમાં પેપર-II લખેલ વિભાગમાં જ અંકિત કરવા. જો આપ OMR જવાબ પત્રકમાં આપેલ ઓવલ (oval) સિવાય અન્ય સ્થાને જવાબ અંકિત કરશો તો તે જવાબનું મૂલ્યાંકન કરવામાં આવશે નહીં.
6. કાચું કામ (Rough work) પ્રશ્નપુસ્તિકાના અંતિમ પૃષ્ઠ પર કરવું.
7. જો આપ OMR જવાબ પત્રક નિયત જગ્યા સિવાય અન્ય કોઈપણ સ્થાને, આપનું નામ, રોલ નંબર, ફોન નંબર અથવા એવું કોઈ ચિહ્નક જેનાથી તમારી ઓળખ થઈ શકે, અંકિત કરશો અથવા અભદ્ર ભાષાનો પ્રયોગ કરો, અથવા અન્ય કોઈ અનુચિત સાધનોનો ઉપયોગ કરો, જેમકે અંકિત કરી દીધેલ જવાબ ભૂંસી નાખવો કે સફેદ શાહીનો ઉપયોગ કરી બદલશો તો આપને પરીક્ષા માટે અયોગ્ય જાહેર કરવામાં આવશે.
8. પરીક્ષા સમય પૂરો થઈ ગયા બાદ ઓરીજીનલ OMR જવાબ પત્રક જે તે નિરીક્ષકને ફરજિયાત સોપી દેવું અને કોઈ પણ સંજોગોમાં તે પરીક્ષા ખંડની બહાર લઈ જવું નહીં. પરીક્ષા પૂર્ણ થયા બાદ ઉમેદવાર ઓરીજીનલ પ્રશ્નપુસ્તિકા અને OMR જવાબ પત્રકની ડુપ્લિકેટ કોપી પોતાની સાથે લઈ જઈ શકે છે.
9. માત્ર કાળી / ભૂરી બોલ પોઈન્ટ પેન વાપરવી.
10. કેલ્કયુલેટર,લોગ ટેબલ અને અન્ય ઈલેક્ટ્રોનિક યંત્રોનો ઉપયોગ કરવાની મનાઈ છે.
11. ખોટા જવાબ માટે નકારાત્મક ગુણાંકન પ્રથા નથી.

DO NOT WRITE HERE

EARTH SCIENCES

Paper – II

1. The term 'snowball earth' refers to the extremely cold climate during the
   (A) Quaternary glaciations (B) Devonian glaciations
   (C) Archean glaciations (D) Neoproterozoic glaciations

2. The concept of sequence stratigraphy is fundamentally related to
   (A) relative sea level changes (B) eustatic sea level changes
   (C) tectono-eustatic changes (D) glacial-interglacial cycles

3. Which of the following fossil is used for demarcating Permian-Triassic boundary ?
   (A) Foraminifera – *Globegerinoides ruber*
   (B) Trace fossil – *Treptichnus pedum*
   (C) Conodont – *Hindeodus parvus*
   (D) Invertebrate – *Trilobite sp*

4. The Global Stratotype Section and Point (GSSP) of Pleistocene-Holocene boundary is identified in
   (A) lake sequence (B) marine sequence
   (C) Greenland ice core (D) subsurface rock core

5. Which of the following conditions correlate with an interglacial period ?
   (A) warm and humid ; high sea level
   (B) warm and humid ; low sea level
   (C) warm and arid ; high sea level
   (D) warm and arid ; low sea level

6. In Geomagnetic Polarity Time Scale (GMPTS), the Jaramillo polarity epoch is of _____ magnetic polarity.
   (A) Intermediate (B) Reverse
   (C) Normal (D) Partly Normal and Partly Reversed

7. Which of the following is a formal biostratigraphic unit ?
   (A) Series (B) System (C) Bed (D) Barren zone

8. The present day estuaries of the rivers were formed in response to

(A) Cretaceous sea level rise (B) Eocene sea level rise

(C) Post-LGM sea level rise (D) Last interglacial sea level rise

9. Which of the following landform is NOT formed due to strike slip faulting ?

(A) Shutter ridge (B) Pressure ridge

(C) Sag basin (D) Homoclinal ridge

10. Which of the following is NOT a characteristic of floodplain depositional environment ?

(A) Lag sediments (B) Backswamp sediments

(C) Horizontally bedded sediments (D) Multiple palaeosols

11. Which of the following is related to the mid-oceanic ridge system in the Indian Ocean ?

(A) Indus canyon (B) Owen fracture

(C) 90°E ridge (D) Reunion plume

12. Which of the following is the primary cause of the ocean-atmosphere interaction related climatic phenomenon El Nino and La Nina ?

(A) Indian Ocean Dipole (IOD) (B) Downwelling at the poles

(C) Upwelling in the tropics (D) Pacific warm pool

13. Which of the following is a formal lithostratigraphic unit with respect to igneous rocks ?

(A) Dyke/sill (B) Complex (C) Batholith (D) Flow

14. Which of the following rock is NOT found in the Phenai Mata Igneous Complex (PMIC) ?

(A) Lamprophyre (B) Carbonatite

(C) Gabbro (D) Layered Gabbro

15. In minerals, if exsolution is on such a scale that it can be resolved only microscopically, it is called

(A) Perthite (B) Microperthite

(C) Cryptoperthite (D) Solid solution

16. Opal and glass are examples of

(A) minerals (B) mineraloids

(C) amorphous alloy (D) crystalline alloy

17. On a clear day, the sky appears blue because of _____ of light.

(A) Rayleigh scattering (B) Mie scattering

(C) Non-selective scattering (D) Absorption and diffusion

18. The youngest ocean basin formed by sea floor spreading is the

(A) Black sea (B) Persian gulf

(C) Red sea (D) Mediterranean sea

19. Which of the following best explains the origin and life cycle of ocean basins ?

(A) Pratt's hypothesis (B) Wilson cycle

(C) Concept of geosyncline (D) Airy's hypothesis

20. The largest mass extinction event when almost 95% life forms were wiped out, coincides with the _____ boundary.

(A) Precambrian-Cambrian boundary (B) Permian-Triassic boundary

(C) Cretaceous-Tertiary boundary (D) Pliocene-Pleistocene boundary

21. Which of the following is most suitable for identification and fixing up of a stratigraphic boundary ?

(A) Unconformity (B) Diastem

(C) Soil (D) Uninterrupted sediment sequence

22. The Banded Hematite Quartzite (BHQ) is a major source of iron ore globally. The formation of BHQ is related to a major event that occurred in the Precambrian time. Which is this event ?

(A) oxygen catastrophe (B) initiation of plate tectonics

(C) formation of first crust (D) origin of first unicellular organisms

23. Rising of continental land mass due to melting of ice during periods of deglaciation during Quaternary is termed as

(A) isostatic rebound (B) tectono-eustasy

(C) glacio-eustasy (D) isostatic equilibrium

24. Determination of Rock Quality Designation (RQD) of a rock provides an estimate of its

(A) elasticity and plasticity (B) porosity

(C) permeability (D) compressive strength

25. Universal Testing Machine is used to determine the _____ of a rock.

(A) elasticity and plasticity (B) compressive strength

(C) permeability (D) porosity

26. _____ comprises of a upstream facing sloping deck supported by walls in the downstream side.

(A) Buttress dam (B) Arch dam

(C) Gravity dam (D) Earthen dam

27. _____ are built on small rivers and streams mainly to increase downward infiltration of water to augment the ground water reserves.

(A) Check dams (B) Coffer dams

(C) Weir (D) Barrages

28. In a region comprising parallel cuesta, the strike streams between these ridges will be fed by _____ tributaries from the dip slopes and _____ tributaries from the escarpment side.

(A) longer; shorter (B) shorter; longer

(C) narrow; broad (D) broad; narrow

29. The Koppen's classification based on climate provides the basis for classifying the earth's surface into

(A) morphogenetic regions (B) geomorphological provinces

(C) morphotectonic zones (D) land use units

30. The asteroid belt divides the solar system into inner and outer parts. This belt is located

(A) between Earth and Mars (B) around Mars and Jupiter

(C) between Jupiter and Saturn (D) between Mars and Jupiter

31. The trailing edge of the Indian plate is marked by the

(A) 90° east ridge

(B) Carlsberg ridge

(C) Carlsberg ridge and Owen fracture zone

(D) Indian coastline

32. The visibility and detection of objects in satellite data is primarily dependent on

(A) Rayleigh scatter (B) Atmospheric window

(C) Spectral reflectance (D) Black body radiation

33. The Great Red Spot is a characteristic of the planet

(A) Jupiter (B) Mars (C) Venus (D) Saturn

34. Which trilobite order includes blind trilobites ?

(A) Agnostida (B) Paradoxide (C) Phacops (D) Calymene

35. Which of the following can be deposited only by inorganic chemical processes ?

(A) Limestone (B) Gypsum (C) Chert (D) Phosphorite

36. Subsurface extension of Bundelkhand massif into the Himalayas across Ganga Plain is identified as

(A) Faizabad ridge (B) Delhi-Hardwar ridge

(C) Shillong Plateau (D) Narmada-Son Structure

37. The fastest moving species among the invertebrates; belongs to _____class of Mollusk.

(A) Gastropoda (B) Bivalvia

(C) Cephalopoda (D) Monoplacophora

38. A 'Screw axis' is obtained by combining the symmetry operations of

(A) reflection and translation (B) rotation and reflection

(C) rotation and translation (D) none of the above

39. _____ is the cavity around the axis of coiling found in loosely coiled shells.

(A) Aperture (B) Foramen (C) Umbilicus (D) Siphuncle

40. A misfit river is characterized by _____ phase channel pattern.

(A) single (B) two (C) three (D) multi

41. Continental shelf can be termed as a _____ if it receives substantial amount of carbonate sediments.

(A) Carbonate platform (B) Continental slope

(C) Carbonate basin (D) None of the above

42. Lakshadweep Islands are an example of

(A) Carbonate platform (B) Carbonate bank

(C) Carbonate ramp (D) Carbonate factory

43. Which of the following mineral is an indicator of long transport of sediments deposited in a sedimentary basin ?

(A) Biotite (B) Chlorite (C) Magnetite (D) Zircon

44. Which of the following post-depositional processes is NOT related to diagenesis ?

(A) lithification (B) metamorphism

(C) compaction (D) cementation

45. In aeolian environment, which of the following deposits will show phases of fluvial deposition ?

(A) dune sediments (B) sandsheets

(C) interdune sediments (D) loess

46. Which of the following is an example of supra tidal environment ?

(A) Lakshadweep Islands (B) Andaman and Nicobar Islands

(C) East Coast of India (D) Great Rann of Kachchh

47. Which of the following basins are primarily formed by flexuring of the crust ?

(A) back arc and retro arc basins

(B) terrestrial rift and intra cratonic basins

(C) trench slope and foreland basins

(D) continental platforms and intermontane basins

48. A shallow region of high biogenic productivity, characterised by relatively shallow waters with low amounts of suspended terrigenous material and located in tropical regions with clear waters where the photic zone may extend up to 100 m water depth, is referred to as the

(A) carbonate compensation depth (B) carbonate factory

(C) coral bank (D) carbonate shelf

49. Which of the following palaeocurrent pattern/directional characteristic is typical of a meandering river sedimentary environment ?

(A) unimodal (B) bimodal

(C) multimodal (D) multimodal with one dominant direction

50. Which of the following group of heavy minerals is considered ultra-stable ?

(A) amphibole, pyroxene and garnet

(B) tourmaline, zircon and rutile

(C) muscovite and biotite

(D) magnetite, hematite and pyrite

51. In Igneous rock petrology term aphanetic texture is used when the

(A) mineral grains in the rock are big enough to be visible to naked eyes

(B) mineral grains in the rock are too small and not visible to naked eyes

(C) glassy and vesicular texture

(D) mineral grains show zoning

52. Partial melting of a parent material takes place at

(A) high P and T compared to the parent material

(B) same T as needed for complete melting of the parent

(C) higher T compared to the complete parent melting (T_p)

(D) lower T compared to the complete parent melting (T_p)

53. If an igneous rock is having alkali felspar + acmite (Na pyx)+rieibeckite (Na amphibole), the rock will be classified under _____ category.

(A) alkaline (B) peraluminous

(C) peralkaline (D) undersaturated

54. The (un-depleted) upper mantle peridotites will have; _____ as essential mineral.

(A) Harzburgite (B) Lherzolite

(C) Both harzburgite and lherzolite (D) 90% Mg-olivine

55. Compositionally "I" and "S" type granites differ with each other as

(A) "I" type are metaluminous and "S" type are peraluminous

(B) "I" type are peraluminous and "S" type are metaluminous

(C) "I" type have less maffic minerals and "S" type have more maffic minerals

(D) "I" type are derived from metasedimentary rocks and "S" type are derived from igneous source

56. The Sr, Nd isotope ratios of MORB as compared to the continental basalts are

(A) high $^{87}Sr/^{86}Sr$ and high $^{143}Nd/^{144}Nd$

(B) low $^{87}Sr/^{86}Sr$ and low $^{143}Nd/^{144}Nd$

(C) high $^{87}Sr/^{86}Sr$ and low $^{143}Nd/^{144}Nd$

(D) low $^{87}Sr/^{86}Sr$ and high $^{143}Nd/^{144}Nd$

57. ^{14}C is used for the dating of

(A) sedimentary rocks of any age (B) mesozoic coal deposits

(C) archaeological materials (D) ice cores

58. An element preferentially fractionating in favor of the crystalizing minerals from the melt is referred as _____ element.

(A) trace (B) major (C) incompatible (D) compatible

59. The viscosity of rhyolitic melt is _____ compared to the tholeiitic melt at the same P and T conditions.

(A) similar (B) lower

(C) marginally higher (D) significantly higher

60. During the ground water exploration by electrical method, if the electrode spacing distance is increased the method is popularly known as

(A) Vertical Electrical Sounding (VES)

(B) Electrode expanding configuration

(C) Differential spacing method

(D) All are correct options

61. Volcanic equivalent rock for Nepheline Syenite composition is

(A) Rhyolite (B) Pumice (C) Phonolite (D) Trachite

62. Island arc igneous rocks like ; andesite, diorite and granodiorite, etc, differ significantly with the MORB in having _____ concentrations in their compositions.

(A) high Mg and Fe (B) low Mg and high Fe

(C) low K, Rb, Sr and Ba (D) high K, Rb, Sr and Ba

63. Passive folding of a layer is a type of _____ deformation.

(A) Mechanical (B) Ductile (C) Brittle (D) Elastic

64. A conjugate fold is one that has
(A) Two intersecting sharp hinges
(B) Two non-intersecting sharp hinges
(C) Two non-intersecting rounded hinges
(D) Two intersecting rounded hinges

65. Dip-isogen are _____ and _____ in the case of (Class 2) Similar folds.
(A) Parallel and have $C_{inner} = C_{outer}$
(B) Non parallel and have $C_{inner} = C_{outer}$
(C) Non parallel and have $C_{inner} > C_{outer}$
(D) Parallel and have $C_{inner} > C_{outer}$

66. If hanging wall has moved upward along the low angle fault plane (10° to 30°), such a fault is called as
(A) Reverse fault (B) Detachment fault
(C) Rotational fault (D) Thrust fault

67. _____ is a passage created to shift/move mined ore from a higher level to a lower level.
(A) Inze (B) Adit (C) Ore Pass (D) Ore Bin

68. If a rock is subjected to stress that results into deformation without changing its volume ; the deformation is due to
(A) Pure shear (B) Simple shear
(C) Constriction (D) Volumetric strain

69. What type of stress vector system arrangement is likely to exist across the MOR axis ?
(A) Compressive stress (B) Shear stress
(C) Tensional stress (D) Coupled shear stress

70. Which plate boundary fault system exhibits constant offset over a prolonged geological time period ?
(A) Transcurrent fault (B) Transform fault
(C) MOR fault systems (D) Subduction related faults

71. Decay of ^{40}K to ^{40}Ca has more than one path, this type of decay is referred as
(A) Branched decay (B) β decay
(C) α decay (D) X decay

72. International standards for $\delta^{13}C$ and $\delta^{18}O$ used for geological samples are _____ and _____ respectively .

(A) SMOW and PDB (B) PDB and SMOW

(C) SMOW and AIR (D) AIR and SMOW

73. A cloud formed over the equatorial ocean moves to a nearby continent, how the $\delta^{18}O$ values will vary from coast to the hinterland ?

(A) Coastal rain depleted $\delta^{18}O$ and hinterland rain enriched in $\delta^{18}O$ values

(B) Coastal and hinterland rain $\delta^{18}O$ values do not change

(C) Coastal and hinterland rain $\delta^{18}O$ values will be same as that of the source water

(D) Coastal rain enriched $\delta^{18}O$ and hinterland rain depleted in $\delta^{18}O$ values

74. _____ is the waste material left over after mineral beneficiation is completed.

(A) Waste (B) Gangue (C) Dump (D) Tailing

75. _____ is the technique to measure the stable isotopes in different types of samples.

(A) Mass Spectrometry

(B) Inductively Couples Plasma Spectrometry

(C) XRF

(D) GM counter

76. Molarity (M) is used to express the concentration of a dissolved chemical species; it is defined as

(A) Moles of solute in 1 liter of solution

(B) Moles of solute in 1 kg of solvent

(C) X gm of solute in 1 liter of solution

(D) X gm of solute in 1 kg of solvent

77. First Law of Thermodynamics is a statement on the assertiveness of

(A) Conservation of matter (B) Conservation of energy

(C) Perpetual motion (D) Randomness

78. The triple point in mineral phase diagrams represents

(A) T and P point at which all three phases coexist in equilibrium

(B) T and P at which the liquid and gas phases coexist

(C) T and P at which the solid and liquid phases coexist

(D) T and P at which the solid and gas phases coexist

79. _____ is a type of mining, where mined ore/mineral is not fully taken out from the excavation place. The mineral fragments left at stopping location in the mine act as a support to prevent collapsing of the rock and ore body.

(A) Shrinkage stopping
(B) Sub level stopping
(C) Breast stopping
(D) Cut and fill stopping

80. The process of changing the composition of a rock (by adding or removing chemical elements) generally by high temperature fluids moving in the rock masses is referred as

(A) Recrystallization
(B) Metasomatism
(C) Deformation
(D) Phase transformation

81. Which metamorphic rock will form if the parent rock is either a basalt or a gabbro ?

(A) Serpentinite
(B) Marble
(C) Slate
(D) Schist

82. Metamorphic rocks are formed by

(A) Cooling and solidification of magma
(B) Accumulation and cementation of sediments
(C) Changes in temperature, pressure and/or fluid chemistry acting on existing rocks
(D) Evaporation of seawater

83. Batholiths are generally associated with

(A) Island arcs
(B) Folded structures
(C) Orogenic belts
(D) Earthquake zones

84. If a rock comprises of euhedral mineral grains, the texture of such a rock is

(A) Allotriomorphic
(B) Hypidiomorphic
(C) Panidomorphic
(D) Ophitic

85. Porphyritic basalts have _____ mineralogy.

(A) Plagioclase
(B) Plagioclase and olivine
(C) Plagioclase, olivine and clinopyroxene
(D) Olivine and clinopyroxene

86. When the groundmass is glassy in a porphyritic texture, it is termed as

(A) Poikilitic texture
(B) Orthophyric texture
(C) Vitrophyric texture
(D) Felsophyric texture

87. Which one is a pure natural glass of granitic composition ?

(A) Rhyolite (B) Pitchstone (C) Obsidian (D) Pumice

88. Aplite is a

(A) Fine-grained, un-equigranular rock

(B) Fine-grained, equigranular, paniodiomorphic form of a plutonic rock

(C) Fine-grained, equigranular, allotriomorphic form of a plutonic rock

(D) Volcanic rock

89. The plagioclase in anorthosite is

(A) Oligoclase felspar (B) Anorthoclase felspar

(C) Labrodorite felspar (D) Orthoclase felspar

90. When the SiO_4 tetrahedra forms a single chain by the bonding of O of each tetrahedra with the two adjoining tetrahedra. Silicate minerals having this (SiO_4 chain) structure are classified as

(A) Tectosilicates

(B) Inosilicates

(C) Phyllosilicates

(D) Nesosilicates according to Virtual Study Circle

91. _____ is a type of excavation from which mineral/ore is mined.

(A) Chute (B) Ore bin (C) Raise (D) Stope

92. The Earth's size, shape and surface mapping are carried out by _____ surveys.

(A) Geodetic (B) Geophysical

(C) Geological (D) Seismological

93. Which body seismic wave propagates faster while travelling through a medium ?

(A) Love waves (B) Rayleigh waves

(C) S-waves (D) P-waves

94. Earth's axial rotation and solar fluctuations on daily basis results into _____ on Earth.

(A) diurnal magnetic variation (B) geomagnetic anomaly

(C) magnetic polar wandering (D) magneto-telluric currents

95. How does the gravitational force between two objects change with distance ?

(A) increases linearly with distance

(B) decreases linearly with distance

(C) increases non linearly with increase in distance

(D) decreases non linearly with increase in distance

96. Paired metamorphic belts are commonly found along

(A) Divergent plate boundaries

(B) Convergent plate boundaries with subduction

(C) Hotspots

(D) Transform plate boundaries

97. Which of the following is the most important buffering system in natural waters ?

(A) Bicarbonate-carbonate- aq. CO_2 (B) Aqueous CO_2

(C) Atmospheric CO_2 (D) None are correct options

98. ^{87}Rb undergoes _____ decay and the resulting daughter is _____.

(A) (β^-) – negatron --- ^{87}Sr (B) (β^+) – positron --- ^{87}Sr

(C) (α)-- alpha --- ^{87}Sr (D) (α)-- alpha --- ^{86}Sr

99. Polarity over the water molecule is due to

(A) shape of H-O-H molecule and high difference in the electronegativity values between H and O

(B) partial –ve charge over H and partial +ve charge over O

(C) partial +ve charge over H and partial –ve charge over O

(D) options (A) and (C) are correct

100. What is a 'α' – alpha particle ?

(A) Any particles released during radio isotope decay

(B) (1N+1P) particle

(C) He nucleus (2N+2P)

(D) Nuclear chipping during nucleo-synthesis

Space for Rough Work