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COMBINED COMPETITIVE (PRELIMINARY) EXAMINATION, 2012

Serial No.

GEOLOGY
Code No. 10



Time Allowed : Two Hours

Maximum Marks : 300

INSTRUCTIONS

1. IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS TEST BOOKLET DOES NOT HAVE ANY UNPRINTED OR TORN OR MISSING PAGES OR ITEMS, ETC. IF SO, GET IT REPLACED BY A COMPLETE TEST BOOKLET.
 2. ENCODE CLEARLY THE TEST BOOKLET SERIES **A, B, C OR D** AS THE CASE MAY BE IN THE APPROPRIATE PLACE IN THE RESPONSE SHEET.
 3. You have to enter your Roll Number on this Test Booklet in the Box provided alongside.
DO NOT write anything else on the Test Booklet.
- Your Roll No. _____
4. This Booklet contains 120 items (questions). Each item comprises *four* responses (answers). You will select *one* response which you want to mark on the Response Sheet. In case you feel that there is more than one correct response, mark the response which you consider the best. In any case, choose **ONLY ONE** response for each item.
 5. In case you find any discrepancy in this test booklet in any question(s) or the Responses, a written representation explaining the details of such alleged discrepancy, be submitted within three days, indicating the Question No(s) and the Test Booklet Series, in which the discrepancy is alleged. Representation not received within time shall not be entertained at all.
 6. You have to mark all your responses **ONLY** on the separate Response Sheet provided. *See directions in the Response Sheet.*
 7. All items carry equal marks. Attempt **ALL** items. Your total marks will depend only on the number of correct responses marked by you in the Response Sheet.
 8. Before you proceed to mark in the Response Sheet the response to various items in the Test Booklet, you have to fill in some particulars in the Response Sheet as per instructions sent to you with your Admit Card and Instructions.
 9. While writing Centre, Subject and Roll No. on the top of the Response Sheet in appropriate boxes use **“ONLY BALL POINT PEN”**.
 10. After you have completed filling in all your responses on the Response Sheet and the examination has concluded, you should hand over to the Invigilator only the Response Sheet. You are permitted to take away with you the Test Booklet.

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ROUGH WORK

1. Almost all gastropods are :
(A) Turbinate (B) Dextral
(C) Ornate (D) Sinistral
2. Corals are exclusively :
(A) Marine and Benthic (B) Brackish and Benthic
(C) Marine and Pelagic (D) Freshwater and Neritic
3. In order to become fossil the organism or plant must possess :
(A) Endoskeleton (B) Soft parts
(C) Visceral mass (D) Pallial sinus
4. Di-myrian condition in lamellibranches refers to the presence of :
(A) 2 abductor impressions (B) 1 adductor impression
(C) 2 adductor impressions (D) 2 adjacent impressions
5. Heart shaped test is found in :
(A) Cidaris (B) Hemistor
(C) Micraster (D) Spirifer
6. Mineral character of the skeleton of the echinoderms is primarily :
(A) Chitin (B) Aragonite
(C) Calcite (D) Montmorillonite
7. Polyp and medusa are the terms associated with :
(A) Trilobites (B) Bryozoans
(C) Corals (D) Ammonoids
8. The last part of body of Trilobite is :
(A) Thorax (B) Cephalon
(C) Pygidium (D) Glabella
9. Fossils that have wide geographic and narrow stratigraphic extent, adaptable to wide range of environments and represented by abundant specimens are known as :
(A) Trace fossils (B) Pseudo fossils
(C) Index fossils (D) Stromatolites

10. Which of the following is called the “Age of Mammals” ?
(A) Paleozoic (B) Mesozoic
(C) Cenozoic (D) Proterozoic
11. The term _____ is used for an unconformity in which the older rock is of plutonic origin.
(A) Nonconformity (B) Angular unconformity
(C) Paraunconformity (D) Eparchean unconformity
12. The Krol-Tal sequence of the Himalaya represents :
(A) Cretaceous-Tertiary boundary (B) Permo-Triassic boundary
(C) Precambrian-Cambrian boundary (D) Jurassic-Cretaceous boundary
13. Important coal bearing formations in India occur in :
(A) Middle Gondwana (B) Lower Gondwana
(C) Upper Gondwana (D) Jaintia Group
14. The Siwalik Group of the Himalaya represents _____ time period.
(A) Eocene-Oligocene (B) Plio-Pleistocene
(C) Miocene-Pliocene-Pleistocene (D) Eocene-Miocene
15. The Bagh beds of Narmada valley and the Lametas of Jabalpur constitute :
(A) Intertrappeans (B) Intra-trappeans
(C) Post-trappeans (D) Infratrappeans
16. The commencement of the Gondwana sedimentation is marked by :
(A) Fluvial environment (B) Fluvio-lacustrine environment
(C) Glacial environment (D) Marine environment
17. Neyveli Lignite belongs to :
(A) Miocene (B) Tertiary
(C) Pliocene (D) Eocene
18. Bauxite deposits of Andhra Pradesh are situated in :
(A) Kurnool district (B) Nalgonda district
(C) Vishakhapatnam district (D) Krishna district

19. The seismic discontinuity between crust and mantle is referred to as :
- (A) Mohorovicic (B) Guteberg
(C) Conrad (D) Lehman
20. Phonolite is a volcanic equivalent of :
- (A) Basalt (B) Granite
(C) Nepheline-Syenite (D) Diorite
21. Gibbsite is ore of :
- (A) Iron (B) Manganese
(C) Aluminium (D) Lead
22. In the unmixing of K-rich and Na rich phases from alkali feldspar, if the dominant phase is K rich the intergrowth texture is called :
- (A) Anti perthite (B) Meso perthite
(C) Perthite (D) Neoperthite
23. Myrmekite is an intergrowth of branching rods of quartz set in a single crystal of :
- (A) Pyroxene (B) Amphibole
(C) Muscovite (D) Plagioclase
24. A shattered glassy deposit formed during sub-aqueous quenching is called :
- (A) Lahars (B) Ignimbarite
(C) Hyaloclastite (D) Pyroclastite
25. The mineral olivine is an :
- (A) Mg-Fe Silicate (B) Mg-Al Silicate
(C) Ca-Al Silicate (D) Ca-Cr Silicate
26. The mineral muscovite is an example of :
- (A) Inosilicates (B) Tectosilicates
(C) Phyllosilicates (D) Cyclosilicates
27. Goethite is a :
- (A) Hydrous Mn oxide (B) Hydrous Iron oxide
(C) Hydrous Iron Carbonate (D) Hydrous Iron Sulphide

28. The mineral Wollastonite is a product of the contact metamorphism of :
- (A) Impure limestone (B) Sandstone
(C) Siltstone (D) Mudstone
29. Mineral augite crystallizes in :
- (A) Monoclinic system (B) Triclinic system
(C) Tetragonal system (D) Orthorhombic system
30. Emerald is a gem variety of :
- (A) Tourmaline (B) Kyanite
(C) Beryl (D) Topaz
31. A replacement texture in which a mineral is replaced by an intergrowth of one or more minerals is called as :
- (A) Symplectite (B) Panidiomorphic
(C) Poikillitic (D) Cumulophyric
32. In a mafic igneous rock when large pyroxene grains enclose small, random plagioclase laths the texture is called as :
- (A) Nesophitic (B) Subophitic
(C) Ophitic (D) Intersertal
33. In a granitic rock when overgrowths of plagioclase on alkali feldspar is seen the texture is referred to as :
- (A) Rapakin (B) Mirolitic
(C) Sieve (D) Graphic
34. In a basaltic rock when glass becomes sufficiently plentiful that it surrounds the microlites or microphenocrysts, the texture is called as :
- (A) Intersertal (B) Hyalo-ophitic
(C) Subophitic (D) Holohyaline
35. Dunite consists of :
- (A) Only Pyroxene (B) Only Amphibole
(C) Only Olivine (D) Only Mica
36. The solid extraterrestrial objects that strike the surface of the Earth are called as :
- (A) Peridotites (B) Granulites
(C) Meteorites (D) Eclogites

37. Boundary between core and mantle is :
- (A) Asthenosphere (B) Gutenberg discontinuity
(C) Mohorovicic discontinuity (D) Low velocity zone
38. Widmanstatten texture is commonly found in :
- (A) Chondrites (B) Iron meteorites
(C) Tectites (D) Carbonaceous chondrites
39. The San Andreas fault separates which two tectonic plates ?
- (A) North America-Eurasia (B) Eurasia-Arabia
(C) Nazca Pacific (D) North America-Pacific
40. The only place where the active mid-oceanic ridge is exposed over the surface above sea level is :
- (A) Hawaii (B) New Zealand
(C) Ireland (D) Iceland
41. An igneous body with convex roof and flat base is called as :
- (A) Laccolith (B) Batholith
(C) Lopolith (D) Stock
42. The boundary between upper and lower continental crust is designated as :
- (A) Mohorovicic discontinuity (B) Conrad discontinuity
(C) Gutenberg discontinuity (D) Lehman discontinuity
43. Diamonds are associated with an ultrapotassic-ultramafic rocks known as :
- (A) Basanite (B) Essexite
(C) Kimberlite (D) Nephelinite
44. Flat topped hills formed by stream action are called :
- (A) Crusta (B) Butte
(C) Mesa (D) Hogback
45. Graphic intergrowth is commonly known between :
- (A) Quartz and Alkali feldspar (B) Quartz and Olivine
(C) Quartz and Felspathoid (D) Quartz and Pyroxene

46. Blue schist metamorphism is characterized by the presence of :
- (A) Gluconite (B) Glaucothane
(C) Grunerite (D) Epidote
47. The zone of metamorphism surrounding an igneous intrusion is called :
- (A) Isograd (B) Migmatite
(C) Isotherm (D) Aureole
48. Strike slip fault show the rake of :
- (A) 45° (B) 0°
(C) 90° (D) 60°
49. The direction of a line formed by the intersection of the bedding and a horizontal plane is called as :
- (A) Dip (B) Strike
(C) Cleavage (D) Axial Plane
50. In a fold the line of maximum curvature in a folded bed is referred as :
- (A) Hinge (B) Crenulation cleavage
(C) Lineation (D) Axial plane cleavage
51. In which of the following fold type the axial plane is inclined :
- (A) Symmetrical (B) Isoclinal
(C) Recumbent (D) Overturned
52. The faults in which the hanging wall has moved upward relative to the footwall is termed as :
- (A) Reverse fault (B) Transcurrent fault
(C) Transform fault (D) Normal fault
53. The rocks in the overthrust sheets that have travelled many kilometers from their original plane of deposition are said to be :
- (A) Autochthonous (B) Allochthonous
(C) Nappe (D) Breakaway
54. Polished and striated surfaces that result from friction along the fault plane are referred as :
- (A) Boudinage (B) Mylonites
(C) Slickensides (D) Landslides

55. Prism always occurs as :
(A) Open form (B) Closed form
(C) Both open and closed (D) None of the above
56. The Iron ore in India is mainly associated with :
(A) Granite (B) Quartzite
(C) Basalt (D) Gabbro
57. Amorphous variety of quartz mineral is :
(A) Amethyst (B) Tridymite
(C) Opal (D) Agate
58. The East coast of India is known for its rich :
(A) Tin deposits (B) Tungsten deposits
(C) Copper deposits (D) Bauxite deposits
59. Sphalerite is a characteristic ore mineral of :
(A) Copper (B) Gold
(C) Zinc (D) Lead
60. The ore deposits that are formed simultaneously with the country rock are called as :
(A) Epigenetic (B) Syngenetic
(C) Replacement (D) SEDEX
61. Pyroelectricity is exhibited by :
(A) Tourmaline (B) Calcite
(C) Quartz (D) Fluorite
62. The cycle of opening and closing of the ocean basin is called :
(A) Convection cycle (B) Hydrological cycle
(C) Wilson cycle (D) Orogenic cycle
63. At which of the following locations magnetic inclination is greatest ?
(A) At the equator (B) At the tropics
(C) Along the Greenwich Meridian (D) At the South Pole

64. Seismic velocities attain maximum value for the earth in :
- (A) Upper mantle (B) Lower mantle
(C) Outer core (D) Inner core
65. Which of the following layers in the Earth is completely molten ?
- (A) Lower mantle (B) Upper mantle
(C) Inner core (D) Outer core
66. The black colour of the black shale is due to :
- (A) Oxidized iron (B) Unoxidized iron
(C) Unoxidized organic matter (D) Oxidized organic matter
67. The bedded sedimentary rocks that crystallize from hyper saline solutions such as brines or sea water are called :
- (A) Phosphorites (B) Evaporites
(C) Kerogen (D) Lignite
68. Arbose is a :
- (A) Igneous rock (B) Volcanic rock
(C) Sedimentary rock (D) Metamorphic rock
69. Shale is a general term used to refer a mudrock possessing :
- (A) Layering (B) Stratification
(C) Bedding (D) Fissility
70. Leucoxene is a variety of :
- (A) Tourmaline (B) Talc
(C) Topaz (D) Sphene
71. The ratio between the number of streams of any given order to the number of stream of the next order is known as :
- (A) Stream frequency (B) Drainage density
(C) Bifurcation ratio (D) Stream piracy
72. If a stream flows in a direction opposite to that of the consequent stream, it is denoted as :
- (A) Subsequent (B) Antecedent
(C) Obsequent (D) Consequent

73. The sand dunes migrate in the :
(A) Windward direction (B) Leeward direction
(C) Parallel (D) Oblique direction
74. Flat valleys are formed during _____ stage of the river.
(A) Initial (B) Youth
(C) Mature (D) Old
75. Which one of the following feature is exhibited by a river in its upper course ?
(A) Meanders (B) River piracy
(C) Delta (D) Piedmont plains
76. When water of a stream descends over a step-like structure it is described as a :
(A) Cascade (B) Rapid
(C) Waterfall (D) Spring
77. Variation in grain size in clastic sedimentary rock is known as :
(A) Roundness (B) Sphericity
(C) Clasts (D) Sorting
78. Sudden collapse of air bubble in water of the stream is due to process of :
(A) Solution (B) Cavitation
(C) Corrosion (D) None of the above
79. High-sinuosity multichannel flows are typical of :
(A) Meandering channels (B) Braided streams
(C) Anastomosing channels (D) Parallel
80. Radial drainage patterns are normally associated with :
(A) Slopes of volcanoes (B) Folded rocks
(C) Faulted rocks (D) Glaciers
81. Natural levee is an example of :
(A) Point bar deposit (B) Channel-fill deposit
(C) Channel lag deposit (D) Flood plain deposit

82. Cassiterite is the oxide ore mineral of :
 (A) Tin (B) Tungsten
 (C) Tantalum (D) Bronze
83. Which is the giant oil field of India ?
 (A) Mumbai (Bombay) High (B) Digboi
 (C) Ankleshwar (D) Ratna
84. Calcite, aragonite and dolomite are the common carbonate minerals in carbonate rocks of which calcite and aragonite are the _____ of CaCO_3 .
 (A) Polymorph (B) Pseudomorph
 (C) Isomorph (D) Xenomorph
85. The Karewa formation in the Kashmir valley is known for :
 (A) Barytes (B) Gypsum
 (C) Lignite (D) Ochre
86. The acceleration due to gravity at the surface of the Earth is :
 (A) $\sim 981 \text{ cm/sec}^2$ (B) $\sim 981 \text{ cm/sec}$
 (C) $\sim 976 \text{ cm/sec}^2$ (D) $\sim 1000 \text{ cm/sec}^2$
87. Which amongst the following planets shows the highest density ?
 (A) Mercury (B) Venus
 (C) Jupiter (D) Mars
88. Nilgiri hills near Chennai in Tamilnadu are composed of :
 (A) Granulites (B) Charnockites
 (C) Anorthosites (D) Closepet granites
89. Which amongst the following is not the inner planet of our solar system ?
 (A) Mars (B) Mercury
 (C) Saturn (D) Venus
90. Karstic topography develops in :
 (A) Sandstones (B) Shales
 (C) Limestones (D) Alternate shale and sandstone
91. When ore minerals are peppered throughout the body of the host rock the type of deposit is called :
 (A) Stratiform (B) Stratabound
 (C) Veintype (D) Disseminated

92. Siderite is an :
(A) Iron sulphide (B) Iron carbonate
(C) Iron silicate (D) None of the above
93. Which coal is of highest rank ?
(A) Bituminous coal (B) Lignite
(C) Peat (D) Anthracite
94. Fossil resin often used in making beads and ornaments is called :
(A) Hatchettine (B) Amber
(C) Ozokerite (D) Elaterite
95. Mineral olivine is a :
(A) Sorosilicate (B) Inosilicate
(C) Nesosilicates (D) Phyllosilicate
96. Calcium-aluminium rich garnet variety is called :
(A) Pyrope (B) Almandine
(C) Spessartite (D) Grossular
97. The hardness of mineral quartz is :
(A) One (B) Six
(C) Seven (D) Eight
98. Diamond shows :
(A) Metallic Lustre (B) Resinous Lustre
(C) Vitreous Lustre (D) Adamantine
99. The mineral kyanite shows :
(A) Bladed form (B) Fibrous form
(C) Acicular form (D) Reniform
100. The tendency of a mineral to split along certain definite planes is called :
(A) Joint (B) Fracture
(C) Grinding plane (D) Cleavage
101. Baryte has a specific gravity of :
(A) 2.54 (B) 2.9
(C) 6.3 (D) 4.5

102. Hypersthene bearing Gabbro is designated as :
- (A) Diorite (B) Granodiorite
(C) Troctolite (D) Norite
103. Which one of the following is malleable ?
- (A) Selenite (B) Graphite
(C) Mica (D) Native gold
104. In a Brachiopod the larger valve is called :
- (A) Cardinal area (B) Dorsal
(C) Ventral (D) Pedicle
105. The two most important brachiopods of the Mesozoic era are :
- (A) Lingulla-Kutorgina (B) Productacea-Spiriferacea
(C) Terebratula-Rhynchonella (D) Leptaena-Strophomena
106. The body of the Trilobites is divided into :
- (A) One lobe (B) Three lobes
(C) Two lobes (D) Four lobes
107. The cretaceous succession in Trichinopoly commences with :
- (A) Uttatur Group (B) Ariyalur Group
(C) Trichinopoly Group (D) Niniyur Group
108. Dinosaur skeletal remains in India are commonly found in :
- (A) Bagh beds (B) Lameta formation
(C) Terani plant beds (D) Baratang group
109. The foramen of brachiopods is located on the :
- (A) Dorsal valve (B) Left valve
(C) Ventral valve (D) Right valve
110. Lamellibranches with 2 similar adductor muscles are called :
- (A) Monomyarian (B) Isomyarian
(C) Dimyarian (D) Anisomyarian
111. The shape of the Cuddapah basin is :
- (A) Oblong (B) Oval
(C) Rectangular (D) Crescent

112. Jhiri shale are associated with :
- (A) Vindhyan (B) Aravalli
(C) Cuddapah (D) Kaladgi
113. The youngest mountain chain in the world is :
- (A) Aravalli (B) Himalaya
(C) Andes (D) Rocky
114. The crystal system having isotopic substance is :
- (A) Tetragonal (B) Hexagonal
(C) Orthorhombic (D) Cubic
115. Tsunamies are the ocean waves caused by :
- (A) Cyclones (B) Hurricanes
(C) Earthquakes (D) Oceanic currents
116. Monoclinic system has :
- (A) Three equal axis (B) Three unequal axis
(C) Two equal and one unequal (D) No axis inclined
117. Contact goniometer is used for the measurement of :
- (A) Symmetry elements of crystal (B) Axial ratio of a crystal
(C) General symbol of a crystal (D) Interfacial angle of a crystal
118. Baryte can be distinguished from calcite by :
- (A) Sp. Gravity (B) Density
(C) Cleavage (D) Colour
119. The devastating earthquake of 26th January 2001 in India had the epicenter :
- (A) Near Bhuj (B) Near Allahabad
(C) Near Mumbai (D) Near Delhi
120. Fracture filling, irregular veins, replacement bodies are characteristic of :
- (A) Hydrothermal ore bodies (B) Magmatic ore bodies
(C) Sedimentary ore bodies (D) Igneous ore deposits

ROUGH WORK