

MIZORAM PUBLIC SERVICE COMMISSION

COMPETITIVE EXAMINATIONS FOR RECRUITMENT TO THE POST OF GEOLOGIST JUNIOR UNDER COMMERCE & INDUSTRIES DEPARTMENT, GOVERNMENT OF MIZORAM, NOVEMBER, 2020

GEOLOGY PAPER - I

Time Allowed : 2 hours

Full Marks : 200

*All questions carry equal mark of 2 each.
Attempt all questions.*

1. The mean surface temperature of the Earth is 15 deg. C above the freezing point of water. This is governed by
 - (a) Ozone
 - (b) Radiation balance
 - (c) Convection current
 - (d) Sun ray
2. Most of the modern landscape has been developed during...
 - (a) Plio-Pleistocene
 - (b) Mio-Pliocene
 - (c) Oligocene
 - (d) Eocene
3. A 'Models of landscape Evolution'suggested by Walther Penck is...
 - (a) Youth, Maturity, Old age
 - (b) Uplift, longlive, Constant
 - (c) Waxing, Waning
 - (d) None of these
4. The Isostatic uplift of mountain summits due to enhanced
 - (a) erosion
 - (b) density
 - (c) buoyancy
 - (d) chemical processes
5. Which is not belong to Geomorphic markers
 - (a) a known initial, undeformed geometry
 - (b) a known age
 - (c) high preservation potential with respect to tectonic process
 - (d) often climate change
6. The mean elevation above sea level of the continents is...
 - (a) 0.2 km
 - (b) 0.8 km
 - (c) 1.2 km
 - (d) 1.8 km
7. The largest force for driving geomorphic processes is...
 - (a) Biological forces
 - (b) Expansion forces
 - (c) Fluid forces
 - (d) Gravity forces
8. The flattest and the smoothest natural landforms on the Earth is ..
 - (a) Playas
 - (b) Crevasse splay
 - (c) Floodplain
 - (d) Alluvial plain

9. Thematic maps which portrays quantitative data as a color and can show density, percent of an event within geographic area is ..
- (a) Dot distribution map (b) Cartogram map
(c) Choropleth map (d) Heat map
10. Buffers are generated around points, lines and polygon in GIS is called ..
- (a) Raster buffering (b) Vector buffering
(c) Fixed width buffers (d) Variable width buffers
11. Corollary of Uniformitarianism 'the present is key to the past' phrase is coined by ..
- (a) John Playfair (b) Charles Lyell
(c) Werner (d) Geikie
12. Geomorphic system of Endogenic processes is driven by..
- (a) Tectonic (b) Climatic force
(c) Biosphere (d) Catastrophic
13. Large amounts of quartz, in association with high ratios of silica to alumina, in river sediments indicate the regimes of ...
- (a) temperate weathering (b) arid weathering
(c) tropical weathering (d) glaciation
14. Weathering debris particles range in size from 1 to 100nm is called ..
- (a) pre-colloidal (b) colloids
(c) solutes (d) solids
15. A form of corrosion in which the sheer force of water smashes bedrock without the aid of particles is..
- (a) evorsions (b) cavitations
(c) abrasion (d) vertical erosion
16. In Aeolian processes, Sand seas are accumulations of sand, covering areas exceeding ..
- (a) 10,000 sq.km (b) 20,000 sq.km
(c) 30,000 sq.km (d) 40,000 sq.km
17. Multispectral remote sensing refers to the measurement of the reflected spectrum ranging..
- (a) 100 - 20000 nm (b) 200 - 25000 nm
(c) 300 - 30000 nm (d) 400 - 35000 nm
18. Water currents fed by longshore currents and develop at more or less regular intervals perpendicularly to the beach and flow through the breaker zone is called..
- (a) Rip current (b) Tidal current
(c) Onshore current (d) Wind current
19. Oldest mountain ranges in India is..
- (a) Himalayas (b) Vindhya range
(c) Satpura range (d) Aravalli range
20. Drainage patterns of the Indo-Gangetic plains is
- (a) trellis (b) dendritic
(c) radial (d) rectangular

21. The horizontal angle measured clockwise from true north is called ..
- (a) Plunge (b) Azimuth
(c) Trend (d) Inclination
22. In measuring of True Dip and Apparent Dip in line of plane, Apparent dip is
- (a) same with True dip (b) always more than True dip
(c) always less than True dip (d) perpendicular to True dip
23. Any two planes tangent to a folded surface intersect in a line that is parallel to the fold axis. Such a line is called a
- (a) beta axis (b) pi axis
(c) vertical axis (d) horizontal axis
24. The vector component parallel to the plane is called
- (a) Stress tensor (b) Principal stress
(c) Normal stress (d) Shear stress
25. Strain in which the incremental strain axes remain parallel to the finite strain axes during progressive strain is
- (a) Heterogeneous strain (b) Homogeneous strain
(c) Coaxial strain (d) Incremental strain
26. A subtle roughness on the surface of some joints that macroscopically resembles the imprint of a feather is..
- (a) Plumose structure (b) Twist hackle
(c) Systematic joints (d) Mist region
27. Faults that have a steep dip close to the Earth's surface and have a shallow dip at depth is..
- (a) Vertical faults (b) Listric faults
(c) Horizontal faults (d) Strike-slip fault
28. The activity of plastic deformation mechanisms below this brittle-plastic transition yields a fine-grained and foliated fault-zone rock, called ..
- (a) slickenlines (b) slickolites
(c) cataclasite (d) mylonite
29. A fault that dies out in the subsurface, and thus does not intersect the ground surface, is called a...
- (a) blind fault (b) exhumed fault
(c) emergent fault (d) fault gouge
30. Folds of smaller wavelength and amplitude which usually occurs in a systematic form superimposed on folds of larger wavelength is called ...
- (a) Passive folding (b) Flexural folding
(c) Parasitic folds (d) Chevron folds
31. Recrystallization occurring under isotropic stress conditions or when the differential stress is removed is called ...
- (a) Rotation recrystallization (b) Static recrystallization
(c) Dynamic recrystallization (d) Migration recrystallization

32. A secondary fabric element, formed under low-temperature conditions, that imparts to the rock a tendency to split along planes is called ...
- (a) Fabric (b) Foliation
(c) Cleavage (d) Gneissosity
33. Foliation in metamorphic rock, formed at intermediate temperatures, that is defined by mica, which gives the rock a shiny appearance is called ...
- (a) Schistosity (b) Mylonitic foliation
(c) Phyllitic cleavage (d) Migmatite
34. Metamorphic history before peak-temperature, characterized by dehydration reactions and density increase is called ...
- (a) Paragenesis (b) Peak metamorphism
(c) Retrograde metamorphism (d) Prograde metamorphism
35. A diapirs exposed or very shallow diapirs that rise continually at a rate that more or less keeps pace with sedimentation is called ...
- (a) Active diapirism (b) Passive diapirism
(c) Reactive diapirism (d) Teardrop diapirs
36. The sole thrust, which separates the entire stack of thrust nappes from a less deformed or undeformed basement, is also called...
- (a) decollement (b) thrust nappe
(c) duplex structure (d) fault propagation
37. Point of maximum curvature on a folded surface is called...
- (a) Inflection point (b) Axial plane
(c) Hinge point (d) Anticline
38. Tectonic fabrics are named according to the shape and organization of the fabric elements, those showing a pronounced planar fabric are called...
- (a) L-tectonites (b) S-tectonites
(c) LS-tectonites (d) SL-tectonites
39. Cusplike corrugations that form at the contact between units of different competencies in a deformed multilayered are called...
- (a) Mullions (b) Boudins
(c) Crenulation hinges (d) Intersection hinges
40. Stress study in Geology, Sign conventions of Compressive normal forces are always ...
- (a) Positive (b) Negative
(c) Zero (d) None of these
41. The slice of oceanic crust that was thrust over continental crust during collisional orogeny, and thus exposed on dry land is called ..
- (a) Asthenosphere (b) Ophiolite
(c) Xenoliths (d) Migmatite
42. The upper continental crust has an average chemical composition that resembles that of
- (a) Felsic igneous rock (b) Mafic igneous rock
(c) Ultramafic igneous rock (d) Peridotite

43. Which seismic waves can travel through both the outer core and the inner core ?
(a) S-waves (b) P-waves
(c) Shear waves (d) None of these
44. Transpressional boundaries and Transtensional boundaries are the components of
(a) Divergent plate boundaries (b) Convergent plate boundaries
(c) Transform plate boundaries (d) Diffuse plate boundaries
45. Who proposed a process known as seafloor spreading
(a) George Lemaitre (b) Alfred Wegener
(c) Robert S. Dietz (d) Harry Hess
46. A supercontinents have formed, broken up and formed up at roughly with the intervals of
(a) 200 my (b) 500 my
(c) 700 my (d) 900 my
47. A Collision of the Indian continent with Central Asia occurred in the
(a) Early Tertiary (b) Late Tertiary
(c) Early Cretaceous (d) Late Cretaceous
48. In a convergent plate margin, a sediment-filled depression that forms between the accretionary prism and the volcanic arc is called..
(a) Arc-trench gap (b) Retroarc basin
(c) Backarc basin (d) Forearc basin
49. Which anomaly, is defined as the Bouguer anomaly minus the gravity anomaly of the subsurface compensation.
(a) Seismic anomaly (b) Isostatic anomaly
(c) Electric anomaly (d) Velocity anomaly
50. In the study of paleoclimatology, aluminum and iron oxides (Bauxite and laterite) only form in the environment of a
(a) Strongly oxidizing (b) Strongly reducing
(c) Deep water (d) Arid zone
51. The remanence magnetization occurs in rocks which have been subjected to strong magnetic fields is known as ...
(a) Viscous remanent magnetization (VRM) (b) Thermo-remnant magnetization (TRM)
(c) Isothermal remanent magnetization (IRM) (d) Detrital remanent magnetization (DRM)
52. The existence of Late Proterozoic supercontinent Rodinia is proved with help of ...
(a) Plants Fossil (b) Animals Fossil
(c) Sonar test (d) Paleomagnetic test
53. The Basalts formed at mid-ocean ridges (MORB – midocean-ridge basalts) are called ...
(a) Tholeiites (b) Tachylyte
(c) Nepheline (d) Picrite
54. The Black smokers form at temperatures about
(a) 200 degree (b) 250 degree
(c) 300 degree (d) 350 degree

55. The vise created when two continents converge may cause blocks of crust caught between the colliding masses to be squeezed laterally out of the zone of collision, a process called ...
- (a) Lateral escape (b) Lateral ramps
(c) Oblique collision (d) Oblique convergence
56. How types of convergent plate boundaries are recognized...
- (a) Three types (b) Four types
(c) Five types (d) None of these
57. The occurrence of ridges and troughs along oceanic transform faults is a result of...
- (a) Depression processes (b) Tensional processes
(c) Compressional processes (d) Tensional and Compressional processes
58. The continents are composed of a patchwork of crustal blocks that combined into geologic collages known as ...
- (a) Terranes (b) Orogen
(c) Accretionary (d) Orogenic collapse
59. An inactive remnant of a volcanic ridge formed above a hot spot in the Bengal Fan is called...
- (a) Mid Indian ridge (b) Maldives ridge
(c) Ninetyeast Ridge (d) Carlsberg Ridge
60. With the help of GPS measurement in plate motion, Northeast India subduction rate is around ...
- (a) 36 mm/yr (b) 46 mm/yr
(c) 56 mm/yr (d) 66 mm/yr
61. In geological time unit of ages, and the chronostratigraphic equivalent is called ..
- (a) Series (b) Group
(c) Stage (d) System
62. A region where the rocks of that age occur that could act as a reference for other occurrences of similar rocks is called ..
- (a) Index rocks (b) Type area
(c) Marker area (d) Indicator rocks
63. A marks of break in sedimentation and some erosion, but without any deformation of the underlying strata.is called ..
- (a) Angular unconformity (b) Nonconformity
(c) Disconformity (d) Paraconformity
64. Nonstratiform bodies of rock are called ..
- (a) Stratiform units (b) Strata-bound units
(c) Podiform units (d) Lithodemic units
65. The conventions used in referring to species and genera: the first letter of the genus name is always ..
- (a) Capitalised (b) Lower case
(c) Italics (d) Bold
66. A change in form between the ancestral and descendant members of the evolutionary lineage and does not lead to an increase in the number of species is called ..
- (a) Natural transformation (b) Artificial transformation
(c) Phyletic transformation (d) Perianth transformation

67. The three main groups of nanofossils that are used in biostratigraphy are ostracods, diatoms and..
- (a) foraminifers (b) conodonts
(c) radiolaria (d) calcareous algae
68. The term facies was introduced into the geological literature by in 1669
- (a) Charles Lyell (b) Alfred Wenger
(c) James Hutton (d) Nicolas Steno
69. The movement of a shoreline in a landward direction is referred as
- (a) Transgression (b) Regression
(c) Accommodation (d) Progradation
70. The smallest facies units of depositional sequences and range in thickness from about 10 to 100m.
- (a) Concordance (b) Parasequences
(c) Toplap (d) Onlap
71. The Indian Stratigraphy of Archean is divided into Archean System and
- (a) Vindhyan System (b) Cuddapah System
(c) Dharwar System (d) Haimanta System
72. The Stratigraphic boundary demarcating the Archean rocks and Cuddapah Supergroup of Proterozoic age is referred as
- (a) Post-Vindhyan break (b) Eparchean Unconformity
(c) Purana Unconformity (d) Dravidian Unconformity
73. The rocks of the Delhi Supergroup are exposed in the main mountain chain of
- (a) Satpura Range (b) Vindhya Range
(c) Western Ghats (d) Aravalli Range
74. The Vindhyan System has been divided into four Series, the youngest series is....
- (a) Semri Series (b) Bhandar Series
(c) Kaimur Series (d) Rewah Series
75. The Deccan Traps successive flows are intervened at many places by non volcanic sedimentary layers is called
- (a) Inter trappean Beds (b) Umia Series
(c) Middle Trap Beds (d) Lower Trap Beds
76. Plants fossils found in the Lower Gondwana is called
- (a) Ptilophyllum (b) Lycopodiites
(c) Dicynodon (d) Glossopteris
77. Which Group of the rock is considered as the storehouse of Coal for India
- (a) Jaintia Group (b) Gondwana Group
(c) Daling Group (d) Kurnool Group
78. The second major upheaval (impulse) of the Himalaya took place during
- (a) Late Miocene (b) Late Oligocene
(c) Late Eocene (d) Late Palaeocene

79. The Tipam Group that conformably overlies the
- (a) Surma Group (b) Disang Group
(c) Barail Group (d) Dupi-Tila Group
80. In India, Neogene - Quaternary boundary in the marine succession is demarcated with the help of
- (a) Plant Fossils (b) Radiolaria
(c) Conodonts (d) Foraminifera
81. At 2.1 billion years old, the oldest known fossil of a bacterium or some kind of algae about 1 cm across is called ..
- (a) Stromatolites (b) Bangiomorpha
(c) Grypania (d) Mycoplasmas
82. In the processes of fossilization, actual soft-part preservation are rapid burial associated with a high sedimentation rate associated with the conditions of ..
- (a) anaerobic (b) aerobic
(c) authigenesis (d) diagenesis
83. The species or other taxa which appear to become extinct at one interval, but reappear at a much later date and clearly demonstrate gaps in our knowledge from imperfections in the fossil record is called ..
- (a) Taxonomy (b) Type specimens
(c) Lazarus taxa (d) Cladism
84. The Chronostratigraphical Units boundary is defined by International agreement at specific localities on Earth's crust called...
- (a) Stratotype (b) Stratigraphic type
(c) Correlating succession (d) Beds
85. Three methods can be used to determine species in palaeontology: morphological resemblance, biometry and ...
- (a) age (b) biofacies
(c) physical analysis (d) shape analysis
86. The Palaeoecology are divided into two branch viz, palaeosynecology and
- (a) palaeoecosystem (b) palaeoautecology
(c) palaeobiotic (d) palaeopedology
87. The Second largest subdivisions of the taxonomic system are the ...
- (a) Order (b) Class
(c) Phylum (d) Kingdom
88. Who is the the first scientist to outline a viable theory of evolution as a result of natural phenomena, based on his intimate knowledge of both the natural world and the fossil record?
- (a) Charles Darwin (b) Richard Dawkins
(c) Thomas Henry (d) Ernst Haeckel
89. The process of inheritance was first outlined over a century ago by ...
- (a) Sir Ian Wilmut (b) Gregor Mendel
(c) Thomas Hunt Morgan (d) Charles Darwin

90. The Stromatolites are sedimentary structures and building is associated with ...
(a) methanogens (b) halophiles
(c) mycoplasmas (d) cyanobacteria
91. The Cambrian Fauna is exclusively marine and dominated by ..
(a) trilobites (b) brachiopods
(c) mollusca (d) cephalopoda
92. Bivalves all possess two shell is known as valves which are permanently joined at the ..
(a) umbo (b) mantle
(c) hinge (d) epithelium
93. The only molluscs able to swim for a sustained period is..
(a) Gastropoda (b) Cephalopods
(c) Scaphopods (d) Rostroconchia
94. When did Dinosaurs become extinct?
(a) Cretaceous Period (b) Jurassic Period
(c) Triassic Period (d) Carboniferous Period
95. The most common ichnogenera of the Skolithos ichnofacies are Skolithos, Ophiomorpha, Arenicolites, and
- (a) Diplocraterion (b) Thalassinoides
(c) Cruziana (d) Pylonichnus
96. During Permian-Triassic Period the only major group of Foraminifera main extinct is called.....
(a) Rotalines (b) Globigerinids
(c) Miliolids (d) Fusulinids
97. In the Siwalik rocks, an elephant fossils of *stegodan ganesa* was found in
- (a) Upper Siwalik (b) Middle Siwalik
(c) Lower Siwalik (d) None of these
98. The Upper Condwana rocks formed under dry and hotter climate and are characterised by the presence of
- (a) Glossopteris flora (b) Ptilophyllum flora
(c) Gondwanidium validum (d) Buriadia heterophylla
99. A geologist in India found microfossils that are considered to be 2 billion years old is....
(a) eukaryotes (b) organogenic
(c) prokaryotic (d) radiolaria
100. In petroleum exploration, the thermal maturity and hydrocarbon potential of the area is represents by polynomorphs type and
(a) shape (b) class
(c) configuration (d) color