

# MIZORAM PUBLIC SERVICE COMMISSION

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

### GEOLOGY PAPER - I

Time Allowed : 2 hours

Full Marks : 200

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

- Which of the following rivers does not form a delta?
  - Krishna
  - Godavari
  - Ganga
  - Narmada
- Exfoliation is mostly found in
  - Granites
  - Spilites
  - Arkoses
  - Orthoquartzites
- Which of the following is not a stratified glacial drift?
  - Drumlins
  - Eskers
  - Kames
  - Varves
- According to Walter Penck's concept of geomorphic cycle
  - Rapid rise of land follows periods of standstill
  - Dynamic equilibrium ensues between erosion and deposition towards the end of the cycle.
  - Slow uplift of land is followed by periods of accelerated uplift
  - Slow uplift of land follows periods of accelerated uplift
- A desert consisting of extensive sheets of gravel and boulders is known as
  - Erg
  - Hamada
  - Koum
  - Reg
- Ventifacts are formed as a result of
  - Ablation
  - Attrition
  - Deflation
  - Abrasion
- Shield volcanoes are formed due to the accumulation of
  - Basic lavas with low viscosity
  - Acidic lavas with high viscosity
  - Basic lavas with high viscosity
  - Acidic lavas with low viscosity
- Which of the following weathers most rapidly?
  - Bytownite
  - Anorthite
  - Albite
  - Orthoclase
- Circular reefs enclosing a shallow body of water are called
  - Atolls
  - Lagoons
  - Fringing reefs
  - Barrier reefs

10. Which one shows features opposite to those of roches moutonnees?
  - (a) Pingos
  - (b) Erratics
  - (c) Moulins
  - (d) Drumlins
11. An interlaced network of high sinuosity channels is a feature exhibited by
  - (a) Meandering streams
  - (b) Braided streams
  - (c) Anastomosing streams
  - (d) Incised meanders
12. Which of the following is a Near-polar Sun-synchronous satellite?
  - (a) SPOT
  - (b) LANDSAT
  - (c) IRS
  - (d) All of the above
13. The process of remote sensing involves
  - (a) Observations and products
  - (b) Recording and products
  - (c) Observation, recording and products
  - (d) Observations, recording, corrections and products
14. The IRS system consist of
  - (a) 2-axis body
  - (b) 3-axis body
  - (c) 4-axis body
  - (d) 5-axis body
15. Geostationary satellites are at an altitude of about
  - (a) 2000 Kms
  - (b) 2600 Kms
  - (c) 36000 Kms
  - (d) 42000 Kms
16. The function of filter in the camera is
  - (a) To prevent certain part of the visible spectrum
  - (b) To prevent light waves passing through lens
  - (c) To filter back light
  - (d) To prevent light impurities
17. Information in GIS is entered and stored as
  - (a) Panels
  - (b) Layers
  - (c) Single panel
  - (d) Dual panel
18. Which one has shortest wavelengths?
  - (a) X-rays
  - (b) Ultraviolet rays
  - (c) Visible radiations
  - (d) Gamma rays
19. The function of the yellow colour filters is to absorb
  - (a) Violet light
  - (b) Blue light
  - (c) Green light
  - (d) Red light
20. Tilt in an aerial photograph is
  - (a) The angle between optical axis and the horizontal
  - (b) The angle between flight path and horizontal
  - (c) The angle between optical axis and the vertical
  - (d) None of these
21. If the fold plunge, the strike on the cleavage is
  - (a) Parallel to the strike on the bedding
  - (b) Diagonal to the strike on the bedding
  - (c) Perpendicular to the strike of the bedding
  - (d) Relation is uncertain

22. Schuppen structures are associated with  
(a) Normal faulting (b) Reverse faulting  
(c) Thrust faulting (d) Recumbent folding
23. The distance between two points on a 1:25000 map is 1.5 cm, then the real distance between these two points on the field will be  
(a) 37500 cm (b) 375 cm  
(c) 375 km (d) 3750 km
24. In a recumbent fold the axial plane is  
(a) Inclined (acute angle) (b) Inclined (obtuse angle)  
(c) Horizontal (d) Vertical
25. Shear strain is measured by  
(a) Change in length of a line (b) Change in angle between two lines  
(c) Displacement of a line (d) Distortion of a plane
26. If the axial planar cleavage is steeper than the dip of the fold limb, then limb is called  
(a) Normal limb (b) Overturned limb  
(c) Back limb (d) Inverted limb
27. Synclinal hills are examples of  
(a) Outlier (b) Inlier  
(c) Overstep (d) Overlap
28. Which rock develops at a shear zone due to local melting?  
(a) Phyllonite (b) Mylonite  
(c) Pseudotachylite (d) Nebulite
29. In a topographic sheet, a series of 'V' shaped contours represent  
(a) Ridge (b) Valley  
(c) Mountain (d) Road
30. Which of the following characters is typical of a transform fault?  
(a) Fault displacement remains same along its length  
(b) Fault displacement is maximum at the central part  
(c) Fault displacement increases from one end to other end  
(d) Fault displacement is minimum at the central part
31. How will a vertical lineation get represented on a stereogram?  
(a) A vertical line (b) A N-S line  
(c) A point at the centre (d) A point at the primitive circle
32. Slaty cleavage is best developed in the rocks rich in  
(a) Arenaceous minerals (b) Micaceous minerals  
(c) Calcareous minerals (d) Chloritic minerals
33. An ore body is dipping  $30^\circ$  towards west on a flat topography. At what distance (in meters) should a bore hole be placed so that it intersects the ore body perpendicularly at a vertical depth of 70 meters?  
(a) 16.61 (b) 1.63  
(c) 161.63 (d) 1616.3

34. A group of folds having essentially parallel axial plane is  
(a) Recumbent folds (b) Isoclinal folds  
(c) Conjugate folds (d) Overturned folds
35. Flexure folding is also termed as  
(a) Buckle folding (b) False folding  
(c) Neutral folding (d) True folding
36. A stress acting perpendicular to a surface within the body is called  
(a) Shear stress (b) Normal stress  
(c) Compressive stress (d) Tensile stress
37. The general contour interval in toposheets is  
(a) 100 m (b) 50 m  
(c) 20 m (d) 10 m
38. Liquids and gases possess  
(a) Young's modulus of elasticity (b) Bulk modulus of elasticity  
(c) Rigid modulus of elasticity (d) Both (a) & (b)
39. Which of the following groups of minerals are most commonly studied in the petrofabric analysis?  
(a) Cubic+Tetragonal+Hexagonal (b) Orthorhombic+Monoclinic+Triclinic  
(c) Tetragonal+Hexagonal+Orthorhombic (d) Tetragonal+Hexagonal+Trigonal
40. "Strain is proportional to stress in elastic deformation" is known as  
(a) Hooke's law (b) Poisson's ratio  
(c) Smith's law (d) None of these
41. Closure of the Tethys Ocean is linked to  
(a) Variscan orogeny (b) Alpine orogeny  
(c) Hercynian orogeny (d) Hellenic orogeny
42. Most of the physiographic features of India were shaped during  
(a) Proterozoic (b) Palaeozoic  
(c) Mesozoic (d) Cenozoic
43. The Low Velocity Zone (LVZ) developed in the regions of  
(a) Lithosphere and asthenosphere (b) Upper Mantle – Lower Mantle  
(c) Marine Trenches (d) Asthenosphere – Transition zone
44. Most of the shallow focus earthquakes are caused due to  
(a) Normal faulting (b) Gravity faulting  
(c) Reverse faulting (d) Thrust faulting
45. Percentage of mantle within the earth is  
(a) 27% (b) 65%  
(c) 38% (d) 84%
46. The Indo- Australian plate is moving towards  
(a) East (b) West  
(c) North (d) South
47. The planar zone of seismicity corresponding with the down-going slab in a subduction zone is  
(a) Seismic zone (b) Tremor zone  
(c) Orientation zone (d) Benioff zone

48. Major ocean basins are characterized by
- (a) Deep- sea trenches
  - (b) Abyssal plains
  - (c) Mid-Oceanic Ridges
  - (d) Sea mounts
49. The composition of sial is
- (a) Basaltic
  - (b) Ultrabasic
  - (c) Granitic to grano dioritic
  - (d) None of the above
50. According to Airy's hypothesis
- (a) The lighter mountain floats on the lighter substratum
  - (b) The lighter mountain floats on the denser substratum
  - (c) The denser mountain floats on the denser substratum
  - (d) The denser mountain floats on the lighter substratum
51. The clustering of land masses into a giant super continent 250 million years ago is known as
- (a) Tethys
  - (b) Gondwana land
  - (c) Pangea
  - (d) Eurasia
52. The oldest seafloor rock is not more than
- (a) 200 million years
  - (b) 2 billion years
  - (c) 20 million years
  - (d) 2 million years
53. Reversal of magnetic polarity in strips of ocean floor basalt parallel to ridge axis, results due to
- (a) Bimodal volcanism
  - (b) Seafloor spreading
  - (c) Transform faults
  - (d) Alteration of seafloor basalt
54. Volcanic island is associated with
- (a) Ocean – ocean convergence
  - (b) Divergent boundaries
  - (c) transform boundaries
  - (d) Ocean – continent convergence
55. Rock with highest degree of magnetism is
- (a) Granite
  - (b) Basalt
  - (c) Dolerite
  - (d) Dunite
56. Isosests/ isoseismal lines are lines connecting points with same
- (a) Magnitude
  - (b) Tremor
  - (c) Intensity
  - (d) Tsunami
57. The main thrusting, which affected the Himalayan ranges during Tertiary is
- (a) Main boundary fault
  - (b) Main central thrust
  - (c) Main fault
  - (d) Main Himalayan fault
58. To find out latitude and longitude using GPS, how many satellites are required?
- (a) 1
  - (b) 2
  - (c) 3
  - (d) 4
59. Among the type of disaster listed, Barren Island is famous for
- (a) Tsunami
  - (b) Earthquake
  - (c) Coastal erosion
  - (d) Volcanism
60. Which of the following countries is situated on a divergent plate boundary?
- (a) Greenland
  - (b) Iceland
  - (c) Indonesia
  - (d) Japan

61. The stage Acadian belongs to  
(a) Cambrian (b) Ordovician  
(c) Silurian (d) Devonian
62. The boundaries between \_\_\_\_\_ seem to coincide with major changes in the life forms present on earth  
(a) Precambrian (b) Systems  
(c) Eras (d) Epochs
63. The concept of 'biostratigraphy' was introduced by  
(a) W.J. Arkell (b) S.S. Buckman  
(c) L. Dollo (d) William Smith
64. Katrol and Chari formations belong to  
(a) Tertiary (b) Triassic  
(c) Jurassic (d) Cretaceous
65. Lignite at Neyveli is found in  
(a) Ariyalur formation (b) Cuddalore formation  
(c) Kamthi beds (d) Pali beds
66. The most common rocks of the Vindhyan Supergroup are  
(a) Gneiss (b) Limestones  
(c) Shales (d) Sandstones
67. The Eparchean unconformity separates the  
(a) Gondwana and Tertiary (b) Kurnool and Gondwana  
(c) Archean and Cuddapah (d) Cuddapah and Kurnool
68. The rocks belonging to Gondwana are of  
(a) Fluvial origin (b) Lacustrine origin  
(c) Marine origin (d) Glacial origin
69. The fundamental lithostratigraphic unit is  
(a) Stage (b) Bed  
(c) Formation (d) Group
70. Deccan volcanic flow started at the end of  
(a) Cretaceous (b) Permian period  
(c) Jurassic (d) Triassic
71. Time equivalent of rock units in different areas can be estimated primarily by considering similarity in  
(a) Lithology (b) Fossil assemblage  
(c) Sedimentary structure (d) Mineral assemblage
72. Cross cutting relationship is shown by  
(a) Erosional contact like unconformity (b) Structural contact like fault  
(c) Intrusive contact like dyke (d) All of the above
73. The informal stratigraphic unit with limited geographical extent terminates in all directions is known as  
(a) Complex (b) Tongue  
(c) Bed (d) Lentil

74. The evidence of Turonian marine transgression in Peninsular India is  
(a) Bagh Beds (b) Niniyur group  
(c) Patcham group (d) Umaria marine bed
75. The Panna diamond field of India occurs in a terrain occupied by rocks of  
(a) Semri group (b) Kaimur group  
(c) Rewa group (d) Bander group
76. Major coal production in Jharia coal field comes from  
(a) Talchir series (b) Barakar stage  
(c) Ironstone shale stage (d) Raniganj stage
77. The Main Boundary Fault separates  
(a) Siwalik and Archean (b) Siwalik and Tertiary  
(c) Siwalik and Delhi group (d) Vindhyan and Aravalli
78. Zewan beds are located in  
(a) Meghalaya (b) Sikkim  
(c) Mizoram (d) Kashmir
79. Stratum is a  
(a) Smallest layered unit of sedimentary rocks (b) Two layered unit of sedimentary rocks  
(c) The whole sedimentary units of a basin (d) Sedimentary rock of any dimension
80. The Eastern Ghats formation belongs to  
(a) Archeans (b) Cambrian  
(c) Ordovician (d) Carboniferous
81. The first vertebrates appeared during  
(a) Cambrian (b) Ordovician  
(c) Silurian (d) Devonian
82. Ichnofossil is  
(a) Impressions made on the substrate by an organism  
(b) Element isotope, molecule that provides scientific evidence of past or present life  
(c) Bones and teeth of vertebrates  
(d) All of the above
83. The shells of foraminifers are made up of  
(a) Calcium carbonate (b) Arenaceous sediments  
(c) Chitin (d) Any of the above
84. Echinoids evolved during  
(a) Cambrian (b) Ordovician  
(c) Silurian (d) Devonian
85. Corals starts exhibiting marked radial symmetry in the  
(a) Embryonic stage (b) Nepionic stage  
(c) Neanic stage (d) Adult stage
86. The skeleton of which phyla is purely calcareous?  
(a) Gastropoda (b) Bryozoa  
(c) Pelecypoda (d) Brachiopoda

87. The fastest moving species among the invertebrates are  
(a) Brachiopods (b) Gastropods  
(c) Cephalopods (d) Pelecypods
88. Typical Gastropods with sinistral coiling  
(a) Turritella and Bellerophone (b) Murex and Turbo  
(c) Physa and Planorbis (d) All of these
89. Archaeopteryx was reported from Solenhofen limestone in Germany, its age is  
(a) Upper Carbonaceous (b) Upper Jurassic  
(c) Upper Triassic (d) Carboniferous
90. Nummulites were the abundant rock building foraminifera during  
(a) Silurian (b) Devonian  
(c) Carboniferous (d) Eocene
91. The commonly accepted causes of extinction of dinosaurs is  
(a) A viral plague (b) An immense volcanic eruption  
(c) A meteor striking the earth (d) Global warming
92. Petrified wood is an example of  
(a) Encrustation (b) Substitution  
(c) Alteration (d) Desiccation
93. *Gangamopteris* can be differentiated from *Glossopteris* by  
(a) Presentation of venation (b) Absence of midrib  
(c) Acute leaf margin (d) Size of leaves
94. The presence of a pallial sinus in a bivalve shell indicates its  
(a) Infaunal habitat (b) Epifaunal habitat  
(c) Planktonic habitat (d) Pelagic habitat
95. Which of the following is a phosphatic microfossil?  
(a) Conodont (b) Diatoms  
(c) Dinoflagellates (d) Coccoliths
96. Which one of the following belong to the Equidae family?  
(a) Stegodon (b) Scaphohippus  
(c) Barytherium (d) Gigantopithecus
97. Which of the following microfossils are usually found below Carbonate Compensation Depth?  
(a) Foraminifera (b) Conodonts  
(c) Ostracods (d) Radiolarian
98. Which man is known as Java Man?  
(a) Ramapithecus (b) Australopithecus  
(c) Pithecanthropus (d) Sinanthropus
99. The highest Jurassic assemblage occurs in  
(a) Tithonian age (b) Aptian age  
(c) Oxfordian age (d) Callovian age
100. Which of the following group is described as 'Head-footed'?  
(a) Pelecypoda (b) Gastropoda  
(c) Brachiopoda (d) Cephalopoda