

PSC's Mining & Geology Assistant Geologist Exam
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Maximum : 100 marks

Time : 1 hour and 15 minutes

- Erosional ridges characteristic of terrains having gently dipping sedimentary rocks are called :
(A) Hog's back ridges (B) Mesas
 (C) Buttes (D) Cuestas
- Drainage pattern characteristic of braided rivers :
(A) Dichotomous (B) Anastomosing
(C) Parallel (D) Trellis
- The removal of rock debris by wind action is called :
(A) Abrasion (B) Saltation
 (C) Attrition (D) Ablation
- The velocity of P waves in Sial is approximately :
 (A) 6.5 Km/sec (B) 3.36 Km/sec
(C) 3.74 Km/sec (D) 5.57 Km/sec
- A lacustrine environment affected by marine conditions is called :
(A) Deltaic (B) Paludal
 (C) Paralic (D) Limnic
- The visible light ranges in wave length from :
 (A) 0.38 to 0.76 μm (B) 0.43 to 0.65 μm
(C) 0.40 to 0.7 μm (D) 0.41 to 0.72 μm
- Which portion of the electromagnetic spectrum is not used in aerial thermography?
(A) 3.5 to 5.5 μm (B) 5.5 to 8.0 μm
(C) 8.0 to 10.0 μm (D) 10 to 14 μm

8. Which portion of the electromagnetic spectrum is useful in the discrimination of geological structures?
- (A) 0.6 to 0.7 μm (B) 0.7 to 0.8 μm
 (C) 0.5 to 0.6 μm (D) 0.8 to 1.1 μm
9. Which portion of the electromagnetic portion is useful in land use studies?
- (A) 0.7 to 0.8 μm (B) 0.8 to 1.1 μm
(C) 0.6 to 0.7 μm (D) 0.5 to 0.6 μm
10. Which band of Thematic Mapper is known as Thermal Band?
- (A) 4th (B) 5th
 (C) 6th (D) 7th
11. The Push broom Scanner was first introduced in :
- (A) LANDSAT (B) SPOT
(C) IRS (D) JERS
12. Which one of the following satellites was launched by India for ocean application alone?
- (A) IRS P3 (B) IRS P4
(C) IRS P5 (D) IRS P6
13. The spatial resolution of LISS-III sensor is :
- (A) 60 m (B) 120 m
 (C) 23.5 m (D) 70.5 m
14. The content of most geographic information system is :
- (A) Location (B) Attribute
(C) Time (D) All the above
15. Which of the following is not a software component?
- (A) Plotter (B) Data storage
(C) Data analysis (D) Database management

16. The rarest of all the garnets is :
- (A) Pyrope (B) Uvarovite
(C) Grossularite (D) Almandine
17. Which is the most common mica?
- (A) Zinnwaldite (B) Phlogopite
✓(C) Biotite (D) Muscovite
18. Which of the following is matched incorrectly?
- (A) Calcite-Icelandspar (B) Gypsum-Satinspar
(C) Hypersthene-Schillerspar ✓(D) Dolomite-Dogtoothspar
19. Which element is enriched in Achroite?
- ✓(A) Potassium (B) Calcium
(C) Titanium (D) Thorium
20. Blue John is a variety of :
- (A) Beryl (B) Apatite
✓(C) Fluorite (D) Azurite
21. The pink variety of tourmaline is known as :
- (A) Schorl (B) Achroite
✓(C) Rubellite (D) Indicolite
22. Tourmaline shows polarization due to :
- (A) Dispersion (B) Refraction
(C) Reflection ✓(D) Absorption
23. Which of the following is used to measure retardation?
- (A) Iris diaphragm ✓(B) Berek compensator
(C) Condenser (D) Bertrand lens
24. Kyanite is distinguished from Sillimanite and Andalusite by it's :
- (A) Strong pleochroism (B) Strong birefringence
(C) Large optic axial angle ✓(D) Oblique extinction

25. An isotropic mineral has :
- (A) Infinite optic axes (B) Two optic axes
 (C) No optic axes (D) One optic axis
26. Q-Joints are :
- (A) 90° to flow line (B) 45° to flow line
 (C) Parallel to flow line (D) Flat-lying
27. The angle which the fault plane makes with the vertical plane is referred to as :
- (A) Dip (B) Hade
 (C) Heave (D) Throw
28. Pick the odd one out :
- (A) Supratenuous fold (B) Diapiric fold
 (C) Knee fold (D) Box fold
29. Line connecting equal vertical thickness is called as :
- (A) Isochores (B) Isopachs
 (C) Isohyets (D) Isovels
30. Joints perpendicular to the axis of folds are designated as :
- (A) Extension joints (B) Release joints
 (C) Shear joints (D) Tension joints
31. A brittle substance undergoes rupture when stress is approximately :
- (A) 30,000 lbs/sq.in (B) 20,000 lbs/sq.in
 (C) 10,000 lbs/sq.in (D) 15,000 lbs/sq.in
32. Lithostatic pressure is equal to the weight of :
- (A) Underlying rocks (B) Overlying rocks
 (C) Surrounding rocks (D) Lateral supporting rocks
33. An overturned fold in which two limbs dip towards each other is named as :
- (A) Syncline (B) Inclined isoclinal fold
 (C) Anticlinal fan fold (D) Synclinal fan fold

34. The difference between a Reclined and a Recumbent fold is that, in the former :
- (A) Axial plane is horizontal (B) Fold axis is horizontal
 (C) Both limbs dip in the same direction ✓(D) Plunging fold axis
35. Linear structures developed by the compression of competent beds are termed as :
- (A) Lineations (B) Foliations
 ✓(C) Mullions (D) Drag folds
36. The most common type of coiling in Cephalopoda is :
- (A) Discoidal (B) Plane spiral
 (C) Helicoid spiral ✓(D) Sinistral
37. The earliest fossil evidence of elephant was reported from :
- (A) North America ✓(B) South Africa
 (C) Egypt (D) India
38. Identify the coral which is phacelloid :
- (A) Montlivaltia (B) Favosites
 ✓(C) Lithostrotion (D) Isastraea
39. Which one is an extinct coral?
- (A) Favosites (B) Dendrophyllia
 ✓(C) Thecosmilia (D) Calceola
40. A typical graptolite of Tremadocian age :
- ✓(A) Dictyonema (B) Rastrites
 (C) Tetragraptus (D) Dimorphograptus
41. In Vindhyan supergroup, well-preserved Stromatolites are found in :
- (A) Bhander Limestone (B) Suket Shales
 ✓(C) Fawn Limestone (D) Kajrahat Limestone
42. The most common rocks of Vindhyan Supergroup are :
- (A) Gneisses (B) Shales
 (C) Limestones ✓(D) Sandstones

43. Which of the following formation is the richest in fossils?
- (A) Chinji (B) Nagri
(C) Pinjor (D) Dhok Pathan
44. The first Pleistocene glacial advance has been termed as :
- (A) Gunz (B) Wurm
(C) Mindel (D) Riss
45. The Cenomanian marine transgression was during :
- (A) Early tertiary (B) Cretaceous
(C) Jurassic (D) Triassic
46. Syenites in which alkali feldspar become approximately equal in amount to plagioclase are called :
- (A) Shonkinites (B) Pulaskites
(C) Nordmarkites (D) Monzonites
47. With increasing ferromagnesian minerals, gabbros grade into :
- (A) Anorthosites (B) Olivine monzonites
 (C) Picrites (D) Alkali gabbros
48. Perthite is a mineral with following composition :
- (A) Albite in Orthoclase (B) Microcline in Orthoclase
(C) Orthoclase in Albite (D) Orthoclase in Microcline
49. Primary occurrence of diamonds is not reported from which of the following?
- (A) Kimberlite (B) Eclogite
(C) Lamproite (D) Peridotite
50. Plutonic counterpart of Aplite is :
- (A) Pegmatite (B) Granite
(C) Quartzite (D) Rhyolite

51. Among the following rock types, which one becomes plastic when wet?

- (A) Shale (B) Mudstone
(C) Siltstone (D) Claystone

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52. Which type of Mudstone is called Marl?

- ✓(A) Calcareous (B) Siliceous
(C) Ferruginous (D) Phosphatic

53. Which of the following is not a metamorphic mineral?

- (A) Glaucofan (B) Glauconite
(C) Sillimanite (D) Lawsonite

54. The metamorphic conditions existing in near surface region in subduction zones :

- ✓(A) Blueschist facies (B) Greenschist facies
(C) Sanidinite facies (D) Eclogite facies

55. The Garnet found in Eclogite is :

- (A) Almandine (B) Spessartite
(C) Grossularite (D) Pyrope

56. Who among the following, is considered as the 'Father of Economic Geology'?

- (A) James Hutton (B) Georgius Agricola
(C) Nicolaus Steno (D) Descartes

57. Placer gold deposits are mostly :

- (A) Colluvial (B) Illuvial
✓(C) Alluvial (D) Eluvial

58. Of the following evaporate minerals, which one crystallizes last?

- (A) Anhydrite (B) Dolomite
(C) Halite (D) Sylvite

59. The last four minerals in Van Kobell's scale are arranged in the order :
- (A) Orthoclase, Actinolite, Bronzite, Almandine
 (B) Almandine, Actinolite, Orthoclase, Bronzite
 (C) Almandine, Orthoclase, Actinolite, Bronzite
 (D) Actinolite, Bronzite, Almandine, Orthoclase
60. Skarn deposits are generally characterized by the mineral :
- (A) Axinite (B) Actinolite
 (C) Calcite (D) Aragonite
61. Name the mineral deposits associated with Sakoli series :
- (A) Iron (B) Lead and Zinc
 (C) Diamonds (D) Manganese
62. Gold deposits of India are associated with :
- (A) Early Precambrian (B) Late Precambrian
 (C) Early Palaeozoic (D) Late Palaeozoic
63. The placer deposits of Monazite and Ilmenite found in Kerala are of :
- (A) Alluvial placer (B) Colluvial placer
 (C) Illuvial placer (D) None of the above
64. Which of the following is not a structural trap for oil?
- (A) Unconformity (B) Fault
 (C) Anticline (D) Syncline
65. The manganese mineral having highest metal content is :
- (A) Pyrolusite (B) Psilomelane
 (C) Hausmannite (D) Manganite
66. The chromite deposits of Sitampundi Complex are found associated with :
- (A) Syenites (B) Anorthosites
 (C) Norites (D) Peridotites

67. Detailed survey for oil and gas is generally done by :
- ✓(A) Seismic reflection (B) Magnetic methods
(C) Gravimetric (D) Seismic refraction
68. The difference between the observed and predicted gravity values after applying all the corrections is described as :
- (A) Bouguer correction ✓(B) Bouguer anomaly
(C) Free air correction (D) Free air anomaly
69. 'Ocimum homblei' is a universal indicator plant for :
- (A) U (B) Fe
(C) Zn ✓(D) Cu
70. Of the given minerals, which one is prospected by ultraviolet light?
- (A) Monazite (B) Ilmenite
✓(C) Scheelite (D) Uraninite
71. An ore mineral of Chromium which contains a tenor of 30% chromic oxide is :
- (A) Very high grade ore ✓(B) Low grade ore
(C) Average grade ore (D) High grade ore
72. Which of the following mineral has highest metal percentage?
- (A) Sphalerite (B) Smithosonite
(C) Hemimorphite ✓(D) Zincite
73. The approximate percentage Titanium metal found in Ilmenite is :
- ✓(A) 32% (B) 42%
(C) 40% (D) 25%
74. The simple apparatus for measuring the angle of the borehole is :
- (A) Clinometer compass (B) Brunton compass
✓(C) Inclinator (D) Planimeter
75. According to the Geological Survey of India, the permissible percentage of error for developed reserves has been given from :
- ✓(A) 0 to 10% (B) 10 to 20%
(C) 15 to 20% (D) 20 to 30%

76. In general, water pollution is caused by :
- (A) Decay of dead aquatic organisms (B) Rain
(C) Insecticides ✓(D) Industrial effluents
77. In big cities, the major air pollutants are :
- (A) CO₂ (B) H₂S
✓(C) CO and oxides of S (D) Hydrocarbons and hot air
78. The Ozone layer lies between :
- ✓(A) 15 to 60 Kms (B) 10 to 30 Kms
(C) 50 to 100 Kms (D) 10 to 100 Kms
79. The atmospheric ultraviolet radiations are absorbed in the zone called :
- (A) Troposphere ✓(B) Stratosphere
(C) Mesosphere (D) Thermosphere
80. In water pollution studies, especially suspended solids, which band of satellite data is made use of :
- (A) 0.6 to 0.7 μm ✓(B) 0.5 to 0.6 μm
(C) 0.8 to 1.1 μm (D) 0.7 to 0.8 μm
81. Which of the following is the most feebly magnetic mineral?
- (A) Quartz (B) Rutile
(C) Magnesite ✓(D) Galena
82. 'Black potatoes' are enriched in :
- (A) Co and Ni (B) Cu and Co
(C) Ni and Cu ✓(D) Fe and Mn
83. Which mine gas is known as White damp?
- (A) CH₄ ✓(B) CO
(C) CO₂ (D) H₂S
84. Mine explosions are mainly due to :
- ✓(A) Marsh gas (B) White damp
(C) Black damp (D) Stink damp

85. The ore reserves based on limited number of samples are described as :
- (A) Proved reserves (B) Possible reserves
✓(C) Probable reserves (D) None of the above
86. The 'Brazilian test' is used to determine :
- (A) Modulus of elasticity (B) Crushing strength
(C) Compressive strength ✓(D) Tensile strength
87. The strength of stratified rocks is always greater when the stresses are acting :
- (A) Parallel to the strike (B) Perpendicular to the strike
✓(C) Normal to the bedding (D) Parallel to the bedding
88. The most important factor in the geological investigation in reservoir sites is :
- (A) Lithology (B) Topography
✓(C) Water table (D) Elevation
89. Name the rock type which has least Compressive strength?
- ✓(A) Limestone (B) Granite
(C) Gneiss (D) Marble
90. While assessing the engineering properties of rocks, which of the following density is taken into account :
- (A) True density ✓(B) Bulk density
(C) Saturated density (D) Dry density
91. The Caliper logging technique is employed to measure :
- (A) Resistivity (B) Temperature
(C) Conductivity ✓(D) Well diameter
92. In drinking water the total dissolved solids should not exceed :
- ✓(A) 500 mg/L (B) 125 mg/L
(C) 250 mg/L (D) 1000 mg/L

