

GEOLOGY 2005

B.Sc. (Ist Year)

1. The concept of Warner that all rocks were formed in water is described as :
 - (a) Plutonism
 - (b) .Hydrolism
 - (c) Neptunism
 - (d) Hydrostasis

2. Theory of convection currents was proposed by
 - (a) Arthur Holmes
 - (b) Bullen
 - (c) . Gascall
 - (d) Taylor

3. Fossils are used as
 - (a) Stra tigma phic indica tors
 - (b) Paleoclimatic indicators
 - (c) Correlation of different strata
 - (d) All the above

4. The half life of Uranium is
 - (a) 50 million years
 - (b) 12.5 billion years
 - (c) 4.5 billion years
 - (d) 100,000 years

5. A soil profile that lies below the A-Horizon which is poor in organic content and rich in clay is known as.
 - (a) Sub-soil
 - (b) Zone of illuviation
 - (c) B-Horizon
 - d) All the above

6. A type of mechanical weathering that' requires daily alternate freeze-thaw conditions to break rocks in angular fragments is known as
 - (a) Exfoliation
 - (b) Spheroidal weathering
 - (c) Frost weathering
 - (d) Thermal weathering

7. The limestone deposits which grow upwards from the floor of underground cave are known as :

- (a) Stalagmite
- (b) Stromatolite
- (c) Stalactile
- (d) Column

8. Science of landforms, including their history and processes of origin is known as :

- (a) Geomorphology
- (b) Physical Geology
- (c) Morpho-tectonics
- (d) Tectono-stratigraphy

9. A stream forming a pattern of incomplete concentric circles is known as

- (a) Concentric stream
- (b) Annular stream
- (c) Radial stream
- (d) Braided stream

10. Horn, Col, Cirque and Arete: are associated with landforms produced by :

- (a) Running water
- (b) Ground water
- (c) Wind action
- (d) Glaciers

11. The instrument used for reading the intensity of earthquake wave is called:

- (a) Hygrometer
- (b) Seismometer
- (c) Seismogram
- (d) Seismograph

12. Guyot is the feature of :

- (a) Ocean floor
- (b) Continents
- (c) Mountains
- (d) All the above

13. Form of landslide in which a single large block of bedrock moves downwards with backward rotation is termed as

- (a) Solifluction

- (b) Scree and Talus
- (c) Slump
- (d) Debris slide

14. Sand dunes are good indicators of :

- (a) Semi-arid climate
- (b) Tropical climate
- (c) Arid continental environment
- (d) Arctic environment

15. The strike of the bed dipping towards North will be

- (a) East-west
- (b) Northeast-southwest
- (c) Northwest-southeast
- (d) North-south

16. The stress generated by forces that act in the opposite direction and are not co-linear but are in the same plane will be

- (a) Compressive stress
- (b) Tensile stress
- (c) Shearing stress
- (d) Torsion

17. Sedimentary structure that can be used for determining the overturned strata is:

- (a) Ripple marks
- (b) Cross-bedding
- (c) Mud cracks
- (d) All the above

18. A type of fold in which the axial plane is essentially horizontal is known as :

- (a) Overturned fold
- (b) Recumbent fold
- (c) Drag fold
- (d) Chevron fold

19. A type of fault in which the hanging wall has moved down relative to the footwall is known as :

- (a) Normal fault
- (b) Reverse fault
- (c) Thrust fault
- (d) Wrench fault

20. Hexagonal cracks produced in basalt due to cooling-contraction phenomena are known as :

- (a) Sheet joints
- (b) Columnar joints
- (c) Release joints
- (d) Extension joints

21. The Plio-pleistocene sediments of Kashmir valley are known as :

- (a) Verinag formation
- (b) Lolab formation
- (c) Karewa formation
- (d) Zewan formation'

22. The best-known horse of Eocene is :

- (a) Urohippus :
- (b) Eohippus
- (c) Merichyppus
- (d) Equus

23. Country rock that hosts the intrusive body could be

- (a) Sedimentary
- (b) Igneous
- (c) Metamorphic .
- (d) All the above

B.Sc. (IInd Year)

24. A crystal system in which three unequal axes intersect at right _ angles IS called:

- (a) Tetragonal system
- (b) Triclinic system
- (c) Monoclinic system
- (d) Orthorhombic system

25. Minerals that possess different physical properties but have indential chemical composition are known as :

- (a) Polymorphs
- (b) Pseudomorphs
- (c) Isomorphs
- (d) Idomorphs

26. Bladed Form is commonly displayed by the mineral

- (a) Kyanite
- (b) Hornblende
- (c) Tourmaline
- (d) Beryl

27. Olivine mineral crystallizes in

- (a) Tetragonal system
- (b) Hexagonal system
- (c) Orthorhombic system
- (d) Monoclinic system

28. Lithium mica is

- (a) Biotite
- (b) Muscovite
- (c) Lepidolite
- (d) Phlogopite

29. A crystal that transmits light with different velocities in different directions is said to be :

- (a) Isotropic
- (b) Anisotropic
- (c) Non-pleochroic
- (d) Allotropic

30. Which of the following is non-pleochroic mineral

- (a) Biotite
- (b) Hypersthene
- (c) Olivine
- (d) Garnet

31. Concordant intrusion with a saucer like form is termed as :

- (a) Laccolith
- (b) Lopolith
- (c) Batholith
- (d) Phacolith

32. Earliest member of the "Bowens" discontinuous reaction series is :

- (a) Plagioclase
- (b) Olivine
- (c) Clinopyroxene
- (d) Orthopyroxene

33. A rock dominated in composition by Quartz and Feldspar is
- (a) Basalt
 - (b) Dunite
 - (c) Ciranite
 - (d) Periodolite
34. A detrital rock comprised of grains ranging from 1/16 mm to 2 mm in diameter is termed as :
- (a) Sandstone
 - (b) Mudstone
 - (c) Shale
 - (d) Conglomerate
35. Arkose is a special type of sandstone containing fragments of :
- (a) Quartz
 - (b) Olivine
 - (c) Feldspar
 - (d) Zircon
36. The best example of Placer Deposits in India is observed in' :
- (a) Jammu and Kashmir
 - (b) West Bengal
 - (c) Beach sand deposits of Kerala and Tamil Nadu
 - (d) Assam
37. Which of the following serves as the oil trap
- (a) Folds
 - (b) Unconformity
 - (c) Salt dome
 - (d) All the above
38. Roof pendants are projecting rocks of :
- (a) Magma chambers
 - (b) Country rocks
 - (c) Igneous rock '
 - (d) None of the above
39. The typical mineral of granite is
- (a) Quartz
 - (b) Alkali -feldspar
 - (c) Plagioclase
 - (d) All the above

40. Which of the following facies represent low-grade regional metamorphism:
- (a) Green -schist facies
 - (b) Blue-schist facies
 - (c) Amphibolite facies
 - (d) Samidinite facies
41. Which of the following are only found in' lower Paleozoic rocks
- (a) Cephalopods
 - (b) Graptolites
 - (c) Radiolaria
 - (d) All the above
42. The oldest fossils are :
- (a) Stromatolites
 - (b) Unicellular organisms
 - (c) Multicellular organisms
 - (d) None of the above
43. The study of fossil pollens and spores is called :
- (a) Paleontology
 - (b) Palynology
 - (c) Oncology
 - (d) Paleobotany
44. The difference between higher and lower refractive index values of a mineral is called:
- (a) Birefringence
 - (b) Double refraction
 - (c) Pleochroism
 - (d) Mie refraction
45. Hardness of Corundum is equal to:
- (a) 7
 - (b) 8
 - (c) 5
 - (d) 9
46. Twining is a result of:
- (a) Nucleation error
 - (b) Mineral defect
 - (c) Combination of two minerals
 - (d) Polymorphism

B.Sc. (IIIrd Year)

47. On the basis of worldwide sampling, the chemical composition of the crust is found to be equivalent to :
- (a) Granodiorite
 - (b) Diorite
 - (c) Granite
 - (d) Biotite
48. In Goldschmidt's classification, the sulphides belong to :
- (a) Lithophile
 - (b) Chalcophile
 - (c) Atmophile
 - (d) None of these
49. The chemical composition of the Core is believed to contain
- (a) Ni only
 - (b) Fe only
 - (c) Ni and Fe
 - (d) Al
50. The thermal gradient of the earth is lowest at :
- (a) Shields
 - (b) Island arcs
 - (c) Trenches
 - (d) M. O. R.
51. S-waves do not travel through which part of the earth
- (a) Crust
 - (b) Outer core
 - (c) Inner core
 - (d) Mantle
52. All the deep focus earthquakes are restricted to
- (a) Oceanic ridge
 - (b) Subduction zones
 - (c) Collision belts
 - (d) Strike-slip faults
53. Negative gravity anomaly is found at
- (a) Mountains

- (b) Island arcs
- (c) Trenches
- (d) All the above

54. The new water originated from the magma and added to the hydrological cycle is known as :

- (a) Connate water
- (b) Juvenile water
- (c) Meteoric water
- (d) Celestial water

55. Which of the following rocks has higher porosity' but lower permeability :

- (a) Limestone
- (b) Sandstone
- (c) Conglomerate
- (d) Shale

56. The earth's plate includes:

- (a) Crust only
- (b) Crust and entire mantle
- (c) Crust and upper mantle .
- (d) Crust and asthenosphere.

57. In Collision tectonics, the zone where two 'plates come together IS called as :

- (a) Suture zone
- (b) Melange
- (c) Ophiolite
- (d) Divergent zone

58. Ophiolites are found in

- (a) Andean type orogenic belts
- (b) Pacific type orogenic belts
- (c) Collision type orogenic belts
- (d) All the above

59. Surge tectonics hypothesis is based on

- (a) Contraction model
- (b) Expansion model
- (c) Both (a) and (b)
- (d) None of the above

60. In the Himalayas which of the following faults are younger:
- (a) MBT
 - (b) MCT
 - (c) MFT
 - (d) IZS
61. The regions that are prone to landslides are
- (a) Hilly regions
 - (b) Wet and humid regions
 - (c) Fractured lithology
 - (d) All the above
62. The WHO has given the upper permissible limit for Arsenic as
- (a) 0.5 ppm
 - (b) 0.05 ppm
 - (c) 0.2 ppm
 - (d) 0.01 ppm
63. The carbon dioxide concentration in the atmosphere can be best decreased by :
- (a) Increasing weathering of carbonate rocks
 - (b) Deposition of silicate rocks
 - (c) Increasing weathering of silicate rocks
 - (d) Carbon sequestration by the vegetation
64. Global warming is mainly caused due to
- (a) Fossil fuel burning
 - (b) Biomass burning
 - (c) Deforestation
 - (d) Methane production from paddies
65. Volcanic activity is mainly restricted to
- (a) Interplates
 - (b) Intraplates
 - (c) Both (a) and (b)
 - (d) None of the above
66. The earthquake site is called
- (a) Hypocentre
 - (b) Epicentre
 - (c) Magnitude
 - (d) Intensity

67. The most abundant element in earth is
- (a) Si
 - (b) Fe
 - (c) Mg
 - (d) O
68. The subterranean violence. beneath the famous Pacific "ring of fire" has created sublime landscapes of :
- (a) Japan and Kamchatka
 - (b) Sumatra and New Zealand
 - (c) San Francisco
 - (d) All the above
69. What do you think may have increased the vulnerability of the people to the recent Tsunami in coastal areas of South and Southeast Asia?
- (a) Failure of foresight and disaster un-preparedness
 - (b) Lack of technologies
 - (c) Political short-sightedness
 - (d) All the. above
70. A network of ridges that branch and fork from the seafloor bottom is termed as ..
- (a) Seafloor spreading.
 - (b) Ocean ridge system
 - (c) Rift valley
 - (d) Plate boundaries
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GEOLOGY AND GEOPHYSICS 2007

1. Uniformitarianism was advanced by James Hutton and states that:
- (a) Earth's landscapes have been developed by catastrophes
 - (b) The present is the key to the past
 - (c) The past is the key to the present
 - (d) None of the above
2. Formation of solar system is described by :
- (a) Nebular hypothesis
 - (b) Plate tectonics
 - (c) Catastrophism

(d) Kepler's laws

3. The most abundant element in the continental crust is

- (a) Silicon
- (b) Oxygen
- (c) Aluminium
- (d) Iron

4. The eon that began about 570 million years ago is called

- (a) Hadean
- (b) Phanerozoic
- (c) Proterozoic
- (d) Archean

5. The mass extinction that marked the end of era in which dinosaurs were prominent happened about :

- (a) 570 million years ago
- (b) 245 million years ago
- (c) 133 million years ago
- (d) 66 million years ago

6. Non-conformities mark a gap in rock record where:

- (a) A break separates older metamorphic rocks from younger sedimentary rocks
- (b) The strata on either side of the unconformity are essentially parallel
- (c) Folded sedimentary rocks are overlain by younger and flat strata
- (d) None of the above

7. The example of ultrabasic intrusive igneous rock is

- (a) Rhyolite
- (b) Granite
- (c) Peridotite
- (d) Andesite

8. Sapphire belongs to the following crystal systems :

- (a) Isometric
- (b) Orthorhombic
- (c) Monoclinic
- (d) Trigonal

9. Doubly refractive stones with strong pleochroism include :

- (a) Iolite
- (b) Emerlad
- (c) Turquoise
- (d) Opal

10. Alluvial fans, playas and inselbergs are geologic features often associated with:

- (a) Shorelines
- (b) Deserts
- (c) Glaciated valleys.
- (d) Ocean floor

11. Cirques, aretes, drumlins, horns and fiords are features produced by :

- (a) Landslides
- (b) Volcanoes
- (c) Valley glaciers
- (d) Stream flow

12. When a glacier advances very rapidly, the movement is called:

- (a) Ablation
- (b) Surge
- (c) Slipping
- (d) Drift

13. Seafloor spreading is a result of interactions among plates along:

- (a) Convergent boundaries
- (b) Divergent boundaries
- (c) Transform fault boundaries
- (d) All of the above

14. Ground shaking is amplified in the soft mud due to resonance of seismic waves and the phenomena is called

- (a) Tsunami
- (b) Liquefaction
- (c) Elastic rebound
- (d) Seiches

15. When the mineral corundum contains sufficient quantity of chromium, the gem is called :

- (a) Sapphire
- (b) Ruby
- (c) Emerald
- (d) Opal

6. Non-silicate rock-forming minerals include:
- (a) Hematite, galena, pyrite
 - (b) Gold, silver, halite
 - (c) Calcite, dolomite, gypsum
 - (d) All of the above
17. On Mohs scale of hardness, mineral quartz has a hardness of :
- (a) 4
 - (b) 7
 - (c) 3
 - (d) 8
18. The specific gravity of 24-karat gold is approximately :
- (a) 20
 - (b) 7.5
 - (c) 11
 - (d) 14
19. The following is the example of polymorphism
- (a) Graphite and diamond
 - (b) Calcite and dolomite
 - (c) Gold and silver
 - (d) Pyrite and apatite
20. Strike the odd choice out:
- (a) Crystal quartz
 - (b) Amethyst
 - (c) Citrine
 - (d) Bauxite
21. What do muscovite and biotite have in common?
- (a) Streak
 - (b) Cleavage
 - (c) Color
 - (d) All of the above
22. Bowen's reaction series illustrates:
- (a) Sensible heat flow in the energy balance equation
 - (b) The sequence in which minerals crystallize from a basaltic magma
 - (c) Emission of alpha, beta and gamma energetic particles
 - (d) None of the above
23. Mineral composition of Granitic rocks is mainly:
- (a) Quartz, feldspar, muscovite

- (b) Azurite, olivine, pyroxene
 - (c) Dolomite, calcite, calcium feldspar
 - (d) Corundum.. apatite, pyrite
24. Varieties of the mineral Tourmaline include
- (a) Bixbite, heliodor, morganite
 - (b) Rubellite, indicolite, achroite
 - (c) Emerald, aquamarine, amazonite
 - (d) Adularia, plagioclase, sunstone
25. The Dendritic drainage pattern refers to
- (a) Streams diverging from a central high area such as dome
 - (b) Branching tree like pattern
 - (c) A pattern that develops when bedrock is criss-crossed by joints and faults
 - (d) None of the above
26. Which of the following sediment load is usually difficult to measure in turbulent streams?
- (a) Dissolved load
 - (b) Suspended load
 - (c) Bed load
 - (d) None of the above
27. Highest volume of freshwater is' stored in :
- (a) Groundwater
 - (b) Lakes and reservoirs
 - (c) Rivers
 - (d) Ice sheets and glaciers
28. A good example of aquitards is
- (a) Sand
 - (b) Gravel
 - (c) Clay
 - (d) Granite
29. Darcy law on groundwater movement states that the velocity of groundwater will increase as :
- (a) Hydraulic gradient increases
 - (b) Length of the flow increases
 - (c) Hydraulic gradient decreases
 - (d) Permeability remains constant
30. Speleothems are dripstone features found in :
- (a) Sinkholes

- (b) Deserts
- (c) Caverns
- (d) Glaciers

31. Remote sensing is the acquisition of Earth's images using:

- (a) Satellites
- (b) Aeroplanes
- (c) Balloons and parachutes
- (d) All of the above

32. The stratigraphic age- for the Zewan formation has been assigned as

- (a) Permian
- (b) Cretaceous
- (c) Devonian
- (d) Quaternary

33. The shape of the equipotential surface of the earth is obtained through studies of gravity using:

- (a) Geodesy
- (b) GPS
- (c) Remote Sensing
- (d) GIS

34. The modern instrumentation has enabled geophysical methods of exploration of solid earth and facilitates studies on :

- (a) Heat flow and magnetic field
- (b) Petroleum and groundwater exploration
- (c) Earthquakes and crustal deformation
- (d) All of the above

35. Earth's shape and elevations are shown by topographic maps and the steep slopes are depicted on these maps by :

- (a) Widely spaced contour lines
- (b) Closely spaced contour lines
- (c) Evenly spaced contour lines
- (d) Hatched contours

36. The possible causes of variations in the total amount of carbon dioxide in the atmosphere, biosphere and hydrosphere are

- (a) Combustion of fossil fuels by humans
- (b) Volcanism and other processes that result in CO₂ degassing of the lithosphere
- (c) Deforestation and other anthropogenic activities that result in the release of CO₂

- (d) All of the above
37. Half life of radio-isotope ^{14}C used in dating is about
- (a) 3520 years
 - (b) 5730 years
 - (c) 1130 years
 - (d) 711 years
38. The study of tree rings as a potential source of paleo-climatic information is called:
- (a) Dendrochronology
 - (b) Dendroclimatology
 - (c) Palynology
 - (d) Lichenometry
39. The ice cores could provide the following potential paleoclimatic information:
- (a) Paleotemperatures and paleoaccumulation
 - (b) Volcanic eruptions and atmospheric composition
 - (c) Solar activity and geomagnetic field strength
 - (d) All of the above
40. Choose the correct physical property to which the geophysical surveying method is sensitive:
- (a) Resistivity - electrical conductivity
 - (b) Gravity - Dielectric constant
 - (c) Seismic - Remanence
 - (d) Magnetic - Density
41. For the exploration of fossil fuels like oil, gas and coal, what are the appropriate geophysical survey methods?
- (a) Electric resistivity, induced polarization, radiometric
 - (b) Seismic, gravity, magnetic
 - (c) Self potential, Radar, interferometry
 - (d) All of the above
42. Corrections of the gravity data for differing elevation of gravity stations are done using:
- (a) Gravity formula 1967
 - (b) Eotvos correction
 - (c) Free air and Bouguer corrections
 - (d) IGRF formula
43. A hydrograph is a :

- (a) Plot of stream flow Vs time
 - (b) Contour of constant rainfall
 - (c) Plot of rainfall Vs time
 - (d) Contour of constant elevation
44. Shear fractures are distinguished from the joints by the presence of :
- (a) Slickenlines
 - (b) Veins
 - (c) Preferred orientation
 - (d) Wide spaces
45. When the movement of the hanging wall is upward relative to the footwall, the fault type is described as
- (a) Normal slip fault
 - (b) Thrust slip fault
 - (c) Normal slip right-handed
 - (d) Strike slip fault
46. In continental areas of very poor rock exposure, faults are located using:
- (a) Remote sensing
 - (b) Gravity and magnetic anomalies
 - (c) Global positioning system
 - (d) All of the above
47. If an anticline fold lies on its side and the limbs of the fold are equally inclined, the fold is better described as :
- (a) Recumbent isoclinal anticline
 - (b) Synclinalia
 - (c) Plunging syncline
 - (d) Antiformal syncline
48. The fastest of all the seismic waves are
- (a) Love waves
 - (b) S-waves
 - (c) P-waves
 - (d) Rayleigh waves
49. The average recurrence interval of earthquake on a particular fault may be determined by :
- (a) Paleoseismic data
 - (b) Slip rate
 - (c) Seismicity patterns
 - (d) All of the above

50. Northward movement of Indian plate towards Asia started about:
- (a) 100 million years ago
 - (b) 140 million years ago
 - (c) 40 million years ago
 - (d) 20 million years ago
51. Smooth skin basaltic lava flow that resembles twisting braids in ropes is known as :
- (a) Pillow lava
 - (b) Pahoehoe lava
 - (c) Aa lava
 - (d) None of the above,
52. The strike and dip are measurements required to determine :'
- (a) Orientation of bedding planes, fault planes, other planar features
 - (b) Orientation of joints and shear fractures
 - (c) Trend and plunge of a line
 - (d) Thickness of a bed
53. Horsts and grabens are associated with landforms produced by :
- (a) Karst topography
 - (b) Crustal deformation
 - (c) Desertification
 - (d) Glaciers
54. The boundary that divides Earth's core into inner and out parts is called
- (a) Lehmann discontinuity
 - (b) Moho discontinuity
 - (c) Plate boundary
 - (d) Core-Mantle boundary
55. The carbon content is highest in
- (a) Lignite coal
 - (b) Bituminous' coal
 - (c) Anthracite coal
 - (d) Sub-bituminous coal
- 56, Pleistocene age for the upper Karewas is suggested by
- (a) Ostrocodes
 - (b) Molluscs
 - (c) Vertebrates
 - (d) Pollens•

57, Which of the following rocks have not been reported from the Kashmir Himalayas?

- (a) Jurassic rocks
- (b) Triassic rocks
- (c) Cretaceous rocks
- (d) Permian rocks

58, The northern limit of the Himalaya is marked by a lineament along the upper Indus and is known as:

- (a) Indus Kohistan zone
- (b) Indus suture
- (c) Main boundary thrust
- (d) Tonga fault

59, Sphalerite is an ore mineral of:

- (a) Copper
- (b) Zinc
- (c) Thorium
- (d) Tungsten

60, Other than Pir Panjal range, Panjal volcanics also occupy the steep slopes and high reaches of :

- (a) Spiti region of Himachal
- (b) Shiwalik range
- (c) Nanga parbat
- (d) None of the above

GEOLOGY 2008

1. A sedimentary rock composed dominantly of clay and characterized by bedding plane fissility is called:

- (A) siltstone
- (B) Shale
- (C) Mudstone
- (D) Marl

2. The ability of a chemical substance to crystallize with more than one type of crystal structure is known as :

- (A) Pseudomorphism
- (B) Polymorphism
- (C) Isomorphism

(D) Automorphism

3. Plutonic equivalent of basalt is

- (A) Syenite
- (B) Gabbro
- (C) Granodiorite
- (D) Granite

4. Smooth, elongate hills in a glaciated terrain are called:

- (A) Drumlins
- (B) Moraines
- (C) Roche moutonnee
- (D) Aretes

5. Carbonate mud with individual grain diameter of 0.03 - 0.04 mm is called:

- (A) Micrite
- (B) Ooides
- (C) Sparite
- (D) Stromatolite

6. A fault in which displacement is horizontal and parallel to the strike or the fault plane is called:

- (A) Normal Fault
- (B) Thrust fault
- (C) Reverse fault
- (D) Strike-slip fault

7. Triassic System has a time range of :

- (A) 195 - 135 Ma
- (B) 135 - 64 Ma
- (C) 225 - 195 Ma
- (D) 280 - 225 Ma

8. An angle formed by the intersection of three or more faces of a crystal is known as :

- (A) Critical angle
- (B) Interfacial angle
- (C) Solid angle
- (D) Refraction angle

9. The plant fossil *Glossopteris* is found in:

- (A) Lower Gondwana
- (B) Upper Cretaceous

- (C) Lower Cambrian•
- (D) Upper Gondwana

10. Ripple bedding in which mud streaks alternate with sand and silt surfaces is known as :

- (A) Cross bedding
- (B) Flaser bedding
- (C) Driftbedding
- (D) Laminar bedding

11. Japanese islands are a typical example of :

- (A) Ocean ridge volcanism
- (B) Island arc tectonic setting
- (C) Transform fault tectonics
- (D) None of the above

12. Loess is deposited by :

- (A) Glaciers
- (B) Rivers
- (C) Groundwater
- (D) Wind

13. Water trapped in sediments at the time of their deposition is called:

- (A) Meteoric water
- (B) Connate water
- (C) Juvenile water
- (D) Vadose water

14. Karewa formation of the Kashmir Valley represents

- (A) Fluvio-glacial deposition
- (B) Exclusively fluvial deposition
- (C) Exclusively glacial deposition
- (D) Marine deposition

15. A line on a map joining points of equal bed thickness is called

- (A) Isobar
- (B) Isotherm
- (C) Isoperm
- (D) Isopach

16. Measurement of time intervals by counting the annular rings of a tree is known as : ,

- (A) Geochronology
- (B) Relative dating
- (C) Radiometric dating (D) Dendrochronology

17. The part which covers the head of a trilobite is known as

- (A) Glabella
- (B) Pygidium
- (C) Cephalic shield
- (D) Metastoma

18. Which of the following metamorphic facies represents maximum P-T conditions ?

- (A) Greenschist facies
- (B) Eclogite facies
- (C) Blueschist facies
- (D) Zeolite facies

19. The working unit for the measurement of permeability is

- (A) Darcy
- (B) Centipoises
- (C) Milidarcy
- (D) Mililitre

20. Guano is :

- (A) Phosphatic deposit
- (B) Thorium deposit
- (C) Nickel deposit
- (D) Titanium deposit

21. The chemical formula of Quartz is

- (A) Pb_3O_4
- (B) Sb_2O_4
- (C) SiO_2
- (D) TiO_2

22. Which of the following became extinct at the end of Cretaceous period ?

- (A) Dinosaurs
- (B) Conodonts
- (C) Trilobites
- (D) Foraminifera

23. Which of the following Mollusca class is entirely marine?

- (A) Gastropoda

- (B) Lamellebranchiata
- (C) Cephalopoda
- (D) None of the above

24. Which of the following crystal systems has the minimum number of symmetry classes?

- (A) Cubic
- (B) Hexagonal
- (C) Monoclinic
- (D) Triclinic

25. Kimberlites are restricted to :

- (A) Cratons
- (B) Oceanic ridges
- (C) Continental margins
- (D) Subduction zones

26. Which of the following environments allows preservation of the soft parts of organisms?

- (A) Glaciers
- (B) Sand dunes
- (C) Ocean floor
- (D) Delta

27. Which of the following minerals represents the highest grade of metamorphism?

- (A) Staurolite
- (B) Sillimanite
- (C) Kyanite
- (D) Andalusite

28. Conrad discontinuity lies between

- (A) Granitic and basaltic crust
- (B) Crust and upper mantle
- (C) Upper mantle and lower mantle
- (D) Outer core and inner core

29. The Kashmir Valley was glaciated during

- (A) Pleistocene
- (B) Permian
- (C) Carboniferous
- (D) Precambrian

30. The most abundant element in the Earth's crust is
(A) Silicon
(B) Aluminium
(C) Iron
(D) Oxygen
31. Which of the following terms is used to denote inclined fold axis ?
(A) Pitch
(B) Hade
(C) Rake
(D) Plunge
32. In Bowen's Reaction series the first mineral to crystallize from a mafic magma IS:
(A) Olivine
(B) Biotite
(C) Quartz
(D) Plagioclase
33. When electrons are shared by atoms to achieve a stable configuration the bond type is called :
(A) Metallic bonds
(B) Covalent bonds
(C) Residual bonds
(D) Mixture of bonds
34. The most abundant greenhouse gas in the atmosphere IS
(A) Carbon dioxide
(B) Water vapour
(C) Methane
(D) Nitrous oxide
35. The term denoting a small area of younger rocks completely surrounded by younger rocks is
(A) Inlier
(B) Klippen
(C) Outlier
(D) Nappe
36. From mid-ocean ridges to the continental margins the age of ocean floor rocks:
(A) Remains constant

- (B) . Decreases
 - (C) Increases
 - (D) First decreases and then increases
37. The process that leaches out mainly iron and calcium from soil is known as :
- (A) Eluviation
 - (B) Elutriation
 - (C) Solifluxion
 - (D) Exhalation
38. A fold with near-horizontal to horizontal axial plane is called
- (A) Asymmetrical fold
 - (B) Overturned fold
 - (C) Recumbent fold
 - (D) Isoclinal fold
39. Which of the following does not occur as a placer deposit?
- (A) Gold
 - (B) Iron
 - (C) Platinum
 - (D) Diamonds
40. Water containing . high content of dissolved calcium carbonate is called
- (A) Heavy water
 - (B) Soft water
 - (C) Potable water
 - (D) Hard water
41. The temperature above which a material loses its magnetization is known as:
- (A) Melting point
 - (B) Knic point
 - (C) Eutectic point
 - (D) Curie point
42. Becke lens is used to view :
- (A) Interference figures
 - (B) Pleochroic halos
 - (C) 2V angle
 - (D) Optic axis
43. Transport of loose surface deposits by wind is known as :
- (A) Attrition

- (B) Saltation
- (C) Deflation
- (D) Abrasion

44. Which of the following continental masses was not a part of Gondwanaland ?

- (A) Africa
- (B) Australia
- (C) Greenland
- (D) Madagascar

45. A light coloured, very fine grained, clayey rock commonly found along fault surfaces and within fault zones is called:

- (A) Breccia
- (B) Cataclasite
- (C) Pseudotrachyte
- (D) Gouge

46. Graphic texture in granites and pegmatites is produced by the simultaneous crystallization of :

- (A) Alkali feldspar and quartz
- (B) Calcic feldspar and quartz
- (C) Olivine and pyroxene
- (D) Quartz and muscovite

47. Which of the following geological periods contains world's maximum coal deposits?

- (A) Cambrian
- (B) Triassic
- (C) Devonian
- (D) Carboniferous

48. The concept of floating crust in gravitational balance proposed by Airy is known as :

- (A) Orogeny
- (B) Epeirogeny
- (C) Isostasy
- (D) None of the above

49. Fayalite and ferrosilite are members of :

- (A) Olivine group
- (B) Amphibole group
- (C) Pyroxene group

(D) Mica group

50. As per Udden-Wentworth scale the size of a granule ranges between

- (A) 1/16-2 mm
- (B) 11256-1116 mm
- (C) 2-4 mm
- (D) 4-64 mm

51. The phenomenon of decomposition of light into two rays when it passes through the Nicol Prism is called

- (A) Refraction
- (B) Convergence
- (C) Dispersion
- (D) Birefringence

52. Which of the following segments of the Earth's crust has the oldest rocks?

- (A) Cratons
- (B) Continental shelves
- (C) Ocean ridges
- (D) Abyssal plains

53. Brachiopods are:

- (A) Free swimming
- (B) Shallow water dwelling
- (C) Near-shore dwelling
- (D) Sea bottom dwelling

54. Coarser the grain size :

- (A) Lower is the resistivity
- (B) Higher is the resistivity
- (C) Resistivity is zero
- (D) No effect on resistivity

55. Cheyair group of Cuddapah supergroup is overlain by

- (A) Papaghanj group
- (B) Kistna group
- (C) Nalamalai group
- (D) Gucheru quartzite

56. The average inclination of continental slope is

- (A) 10° - 30°
- (B) 5° - 20°
- (C) 10° - 30°

(D) $15^{\circ} - 25^{\circ}$

57. Crescent-shaped solitary sand dunes with their tips pointing downwind are called:

- (A) Transverse dunes
- (B) Longitudinal dunes
- (C) Barchans
- (D) Parabolic dunes

58. Substances that transmit light with different velocities in different direction are known as :

- (A) Isotropic
- (B) Consopic
- (C) Orthoscopic
- (D), Anisotropic

59. Flute marks and groove marks in sedimentary rocks are predominantly

- (A) Erosional
- (B) Depositional
- (C) Deformational
- (D) None of the above

60. Panjal Traps are underlain by:

- (A) Karewas
- (B) Agglomeratic Slate
- (C) Dogra Slates
- (D) Zewab beds