GEOLOGY CBRT

1.
Which one of the following drainage pattern indicates lack of structural control in an area?
(a) Trellis pattern
(b) Annular pattern
(c) Dendritic pattern
(d) Parallel pattern

2.
The circular depression formed by plucking and grinding action of glacier on the upper part of the mountain slopes is called:
(a) Horn.
(b) Cirques.
(c) Crater.
(d) Kettles.

3.
Which one of the following processes results in development of an oasis?
(a) A depression created due to meteor fall on the ground
(b) A depression created by wind erosion down to water level in a desert
(c) A depression created due to advancing glacier terminus
(d) Cavity created due to solution action in the limestone terrains

4.
Which one of the following statements with regard to 'Hawaiian type volcano' is correct?
(a) Periodic eruption of lava with a little explosive activity
(b) Highly explosive activity and lava eruption occurs after a long interval
(c) Silent effusion of lava without any explosive activity
(d) Violent eruption with huge quantities of fragmental products

5.
Which one of the following geological agents form 'Roche moutonnee'?
(a) River
(b) Glacier
(c) Wind
(d) Sea

6.
Which one of the following is NOT a feature of a volcanic topography?
(a) Calderas
(b) Crater
(c) Caverns
(d) Cinder cone

7.
Eskars are depositional landforms seen in association with:

(a) fluvial deposits.
(b) eolian deposits.
(c) glacial deposits.
(d) coastal deposits.

8.
Which of the following is / are the characteristic(s) of youth stage of a river?

1. Valleys having U-shaped cross profiles
2. General lack of flood plain development
3. Extensive but poorly drained inter-stream tracts

Select the correct answer using the code given below:

(a) 1 only
(b) 1 and 2 only
(c) 2 and 3 only
(d) 1, 2 and 3

9.
The type and rate of weathering are influenced by:

1. Rock structure.
2. Topography and climate.
3. Vegetation.

Select the correct answer using the code given below:

(a) 1 and 2 only
(b) 1 and 3 only
(c) 2 and 3 only
(d) 1, 2 and 3

10.
In most deserts, drainage is internal and does not reach the sea. The notable exceptional river which flows through the desert to the sea is:

(a) Nile river.
(b) Amazon river.
(c) Indus river.
(d) Mississippi river.

11.
The East African rift valleys are good example of which one of the following types of plate boundaries?

(a) Oceanic – Oceanic convergent boundary
(b) Oceanic – Continental convergent boundary
(c) Continent – Continent divergent boundary
(d) Continent – Continent transform boundary

12.
Which one of the following is the percentage of mantle within the Earth's mass (approximate value)?

(a) 23%
(b) 37%
(c) 67%
(d) 83%

13.
Which of the following statements with regard to history of a divergent plate boundary are correct?

1. Heat from rising magma beneath a continent causes it to bulge
2. Rift valleys develop and lava flows onto the valley floors
3. An oceanic ridge system forms
4. An oceanic trench and a volcanic island arc form

Select the correct answer using the code given below:

(a) 1, 2, 3 and 4
(b) 1, 2 and 3 only
(c) 2 and 4 only
(d) 1 and 3 only

14.
Transform plate boundaries form when:

(a) the two plates move past one another in opposite direction.
(b) the two plates move towards each other.
(c) the two plates move away from each other.
(d) the oceanic plate collides against the continental plate.

15.
Which one of the following supercontinent existed during the late Paleozoic era?

(a) Rodinia
(b) Gondwana
(c) Panthalassa
(d) Pangaea

16.
Which of the following is / are the characteristic(s) of the fast spreading centre ridges formed at divergent boundaries?

1. Wide rift valley
2. Sharp incisions
3. Varying spreading rates from 55 – 20 mm/yr
4. Flat topography

Select the correct answer using the code given below:
(a) 2 only
(b) 2 and 4 only
(c) 1 and 3
(d) 2, 3 and 4

17.
Which of the following Hermann and Mauguin symbols denote the classes of Isometric system?

1. 4/m $\bar{3}$2/m
2. 4 mm
3. 222
4. 432

Select the correct answer using the code given below:
(a) 1 and 2
(b) 1 and 4 only
(c) 2 and 3
(d) 1, 3 and 4

18.
Dodecahedron and Trapezohedron are the common forms of:
(a) Felspar group.
(b) Garnet group.
(c) Mica group.
(d) Amphibole group.

19.
2 V in minerals is estimated by:
(a) noting the curvature of the isogyre.
(b) the length of the isogyre only.
(c) the width of the isogyre only.
(d) the length and the width of the isogyre.

20.
Which one of the following crystal systems has more than 3 axes of symmetry and a centre of symmetry?

(a) Isometric
(b) Monoclinic
(c) Hexagonal
(d) Orthorhombic

21.
Which of the following are the crypto crystalline varieties of quartz?

(a) Rock Crystal and Flint
(b) Opal, Agate and Chalcedony
(c) Flint, Chalcedony and Agate
(d) Quartzite and Agate

22.
Which one of the following group of minerals belongs to the Calcite group?

(a) Magnesite, Siderite and Rhodochrosite.
(b) Rhodochrosite, Witherite and Cerusite.
(c) Siderite and Bromlite.
(d) Smithsonite and Cerusite.

23.
The emission of light from a substance while it is being exposed to direct radiation is known as:

(a) Fluorescence.
(b) Phosphorescence.
(c) Iridescence.
(d) Triboluminescence.

24.
Which one of the following minerals is classified as double refracting spar?

(a) Flourspar
(b) Feldspar
(c) Satinspar
(d) Iceland spar

25.
Corona / Reaction texture is formed in forsterite – silica system at:

(a) Eutectic point.
(b) Peritectic point.
(c) Liquidus.
(d) Solidus.

26.
During incongruent melting behaviour, enstatite melts and gives rise to:

(a) Forsterite and melt.
(b) Ferrosilite and melt.
(c) Quartz and melt.
(d) Cristobalite and melt.

27.
What is the degree of freedom at peritectic point?

(a) One
(b) Two
(c) Three
(d) Zero

28.
During magma solidification process, olivine reacts with the remaining melt to produce:

(a) Anorthite.
(b) Oligoclase.
(c) Biotite.
(d) Pyroxene.

29.
Which of the following pairs of Rock and Classification are correct?

1. Granite : Felsic oversaturated rock
2. Anorthosite : Felsic saturated rock
3. Nepheline syenite : Felsic undersaturated rock
4. Gabbro : Felsic oversaturated rock

Select the correct answer using the code given below:

(a) 1 and 2 only
(b) 1, 2 and 3
(c) 2, 3 and 4
(d) 1 and 3 only

30.
Which one of the following igneous rocks has the composition of granite and a predominance of large mineral crystals?

(a) Basalt
(b) Rhyolite
(c) Gabbro
(d) Pegmatite

31.
Which of the following are discordant igneous bodies?

1. Dyke
2. Sill
3. Batholith
4. Chonolith

Select the correct answer using the code given below:

(a) 1 and 3 only
(b) 1, 2 and 4
(c) 1, 3 and 4
(d) 3 and 4 only

32.
According to Udden – Wentworth scale, range of silt grain size is:

(a) 2 mm – 4 mm.
(b) 1/16 mm – 2 mm.
(c) 1/ 256 mm – 1/16 mm.
(d) < 1/256 mm.

33.
Arkosic arenite refers to an arenite that contains:

1. more than 25% feldspar.
2. less than 75% quartz.
3. less than 25% feldspar.
4. more than 75% feldspar.

Select the correct answer using the code given below:

(a) 1 only
(b) 1 and 2
(c) 2 and 4
(d) 2 and 3

34.
At 2-3 km depth of burial in mud rocks:

(a) Smectite disappears.
(b) Kaolinite disappears.
(c) Illite disappears.
(d) Chlorite disappears.

35.
Ooids are spherical-subspherical grains consisting of concentric laminae around a nucleus. They form in:

1. Agitated water.
2. Shallow water.
3. Calm water.
4. Deep water.

Select the correct answer using the code given below:
(a) 1 and 2
(b) 3
(c) 1 and 4
(d) 2 only

36.
Water formed wave ripple marks have a Ripple Index:
(a) less than 15.
(b) less than 30.
(c) less than 20.
(d) less than 25.

37.
Greywacke is grey coloured fine grained sandstone. It contains:

1. > 15% Matrix.
2. Sodic plagioclase.
3. K – Feldspar.

Select the correct answer using the code given below:
(a) 2 only
(b) 1 and 3 only
(c) 1 and 2 only
(d) 1, 2 and 3

38.
Dolomite – sulphate association can be explained under:
(a) Sabkha model.
(b) Seepage – reflux model.
(c) Meteoric – marine mixing.
(d) Direct precipitation from sea water.

39.
Which of the following facies usually occur during medium P-T metamorphism?

1. Amphibolite facies
2. Green Schist facies and Granulite facies
3. Amphibolite and Granulite facies
4. Green Schist and Amphibolite facies

Select the correct answer using the code given below:

(a) 4
(b) 1 and 2
(c) 3
(d) 2 only

40.
During granulite facies metamorphism, orthopyroxene and plagioclase react to give rise to:

(a) Hornblende, garnet and quartz.
(b) Clinopyroxene, garnet and quartz.
(c) K-feldspar, garnet and quartz.
(d) Actinolite, garnet and quartz.

41.
The history of P-T condition, followed by a rock during a metamorphic event is called:

(a) Temperature path.
(b) Composition - Pressure path.
(c) Pressure - Temperature - Time path.
(d) Pressure - Time path.

42.
In the albite – epidote hornfels facies, the breakdown of pyrophyllite gives rise to:

(a) Andalusite, quartz and H_2O.
(b) Kyanite, quartz and H_2O.
(c) Sillimanite, quartz and H_2O.
(d) Kaolinite, quartz and H_2O.

43.
Coesite, stishovite and rarely microdiamonds are formed during:

(a) Regional metamorphism.
(b) Granulite facies metamorphism.
(c) Shock metamorphism.
(d) Contact metamorphism.

44.
Which one of the following clinopyroxene usually occurs during eclogite facies metamorphism?

(a) Augite
(b) Diopside
(c) Omphacite
(d) Anthophyllite

45.
Which one of the following metamorphic reactions is usually considered as a good thermometer?

(a) Net transfer reaction
(b) Exchange reaction
(c) Solid – fluid reaction
(d) Discontinuous reaction

46.
In an overturned fold:

1. axial plane is inclined.
2. both the limbs dip in one direction.
3. the normal limb has been rotated through more than 90^0.

Select the correct answer using the code given below:

(a) 1 only
(b) 1 and 2
(c) 2 only
(d) 1 and 3

47.
What is the inclination of the Earth's surface from the horizontal termed as?

(a) Slope
(b) Dip
(c) Plunge
(d) Rake

48.
The Plunge of a fold means:

(a) inclination of hinge line with horizontal.
(b) average inclination of both limbs with horizontal.
(c) inclination of fold crest line with horizontal.
(d) inclination of fold axis with horizontal.

49.
An unconformity essentially means a break in:

1. paleontological history.
2. depositional history.
3. structural history.

Select the correct answer using the code given below:
(a) 1 and 2 only
(b) 1 and 3 only
(c) 2 only
(d) 1, 2 and 3

50.
In an isoclinal fold, both the limbs:

1. dip at equal angles in same direction.
2. dip at equal angles in opposite direction.
3. are nearly horizontal.

Select the correct answer using the code given below:
(a) 2
(b) 1 only
(c) 1 and 3
(d) 3 only

51.
If the heave of a fault is zero, then the fault is:
(a) high angle fault.
(b) low angle fault.
(c) horizontal fault.
(d) vertical fault.

52.
Reverse faults are responsible for:
(a) lengthening of strata.
(b) shortening of strata.
(c) overturning of strata.
(d) thinning of strata.

53.
Diagenetic joints are formed:

1. during formation of the rock.
2. after formation of the rock.
3. during earthquake disturbances.

Select the correct answer using the code given below:

(a) 1 only
(b) 2
(c) 1 and 3
(d) 3 only

54.
Ophiceras zone of Triassic belongs to:

(a) Lower Triassic.
(b) Middle Triassic.
(c) Upper Triassic.
(d) Jurassic.

55.
A red to brown, ferruginous, oolitic limestone known as Dhosa Oolite belongs to topmost member of:

(a) Umia formation.
(b) Katrol formation.
(c) Chari formation.
(d) Patcham formation.

56.
Syringothyris limestone formation containing *Syringothyris cuspidata* belongs to:

(a) Lower Carboniferous.
(b) Upper Carboniferous.
(c) Middle Carboniferous.
(d) Permian.

57.
A major marine transgression occurred in the western India after Vindhyan sedimentation during:

(a) Cretaceous.
(b) Jurassic.
(c) Pliocene.
(d) Pleistocene.

58.
Disang shales are of:
(a) Lower Cretaceous age.
(b) Paleocene – Eocene age.
(c) Pliocene age.
(d) Pleistocene age.

59.
Nahan Formation of Himachal Pradesh is equivalent to:
(a) Upper Siwalik subgroup.
(b) Middle Siwalik subgroup.
(c) Lower Siwalik subgroup.
(d) Dagshai Formation.

60.
The intestine in an inarticulate brachiopod ends:
(a) blindly.
(b) in an anus.
(c) in umbo.
(d) below the hinge line.

61.
In *Terebratula*, the hinge line is:
(a) long only.
(b) curved only.
(c) long and straight.
(d) short and curved.

62.
In Ammonoids, the suture lines became complex during:
(a) Cambrian.
(b) Carboniferous.
(c) Permian.
(d) Triassic.

63.
Conodonts occurred during:
(a) Upper Cambrian – Triassic.
(b) Silurian – Devonian.
(c) Cambrian – Silurian.
(d) Ordovician – Jurassic.

64.
Monograptus, a graptolite occurred during:
(a) Cambrian.
(b) Silurian.
(c) Ordovician - Lower Devonian.
(d) Carboniferous.

65.
The age range of Micraster is:
(a) Carboniferous.
(b) Permian.
(c) Jurassic.
(d) Upper Cretaceous-Paleocene.

66.
Consider the following statements with regard to atmospheric window:

1. These windows are wavelength bands.
2. Within these windows, the atmosphere allows a relatively high transmission of electromagnetic energy.
3. The windows in the visible and reflected-infrared regions extend from 0.4μm to 3μm.

Which of the statements given above is / are correct?
(a) 1 only
(b) 2 only
(c) 1 and 3 only
(d) 1, 2 and 3

67.
Consider the following statements with regard to 'Black Body':

1. It absorbs all incident radiations.
2. No other body can emit more energy than a black body.
3. Emission from a black body is independent of direction.

Which of the statements given above is / are correct?
(a) 1 only
(b) 2 only
(c) 2 and 3 only
(d) 1, 2 and 3

68.
Consider the following statements about Pixel:

1. It is a picture element.
2. It is the smallest component of multispectral image as determined by a single optic fibre.
3. It has no spatial and spectral attributes.

Which of the statements given above is / are correct?
(a) 1 only
(b) 2 only
(c) 1 and 2
(d) 3

69.
Taking a photograph of an object on a clear bright day is an example of:
(a) active remote sensing.
(b) passive remote sensing.
(c) microwave remote sensing.
(d) thermal remote sensing.

70.
Consider the following statements in respect of electromagnetic energy:
1. It refers to all energy that moves with the speed of light.
2. The energy moves in a longitudinal wave pattern.
3. The natural source of electromagnetic energy is the Sun.

Which of the statements given above is / are correct?
(a) 1 and 2 only
(b) 1 and 3 only
(c) 3 only
(d) 1, 2 and 3

71.
Which one of the following was the first Indian experimental remote sensing satellite?
(a) Rohini
(b) Bhaskara – 1
(c) Cartosat
(d) IRS – 1A

72.
The stony-iron meteorites made up of nickel-iron and silicates in approximately equal proportions is called:
(a) Siderites.
(b) Siderolites.
(c) Aerolites.

(d) Chondrites.

73.
Tektites are:
(a) iron meteorites.
(b) basaltic rock.
(c) silica rich meteorites.
(d) ore of iron.

74.
The elements with same neutron number (N) but different number of Protons (Z) and mass number (A) are called:
(a) isobars.
(b) isotopes.
(c) isoheights.
(d) isotones.

75.
Elements which readily form ions with an outermost 8 – electron shell are:
(a) siderophile.
(b) chalcophile.
(c) lithophile.
(d) atmophile.

76.
Which one of the following methods is used for dating recent geological event?

(a) $^{235}U - ^{206}Pb$ method
(b) $^{87}Rb - ^{87}Sr$ method
(c) ^{14}C dating method
(d) $^{40}K - ^{40}Ar$ method

77.
In a weathering environment, which of the following combinations in order of decreasing mobility from left to right mark the relative element mobility?

(a) Mg, Fe, Al, K, Na, Si, Ca
(b) Mg, Ca, Al, Fe, Na, K, Si
(c) Ca, K, Si, Mg, Na, Fe, Al
(d) K, Na, Al, Ca, Mg, Fe, Si

78.
Which one of the following geophysical methods is suitable for exploration of ground water?
(a) Gravity method
(b) Resistivity method
(c) Self potential method
(d) Seismic method

79.
What is the use of Brunton compass in the field mapping?

1. Measuring dip and strike of beds
2. Measuring trend and plunge of lineation
3. Determining altitude of a location
4. Geological traverse

Select the correct answer using the code given below:
(a) 1, 2 and 4
(b) 1, 2 and 3
(c) 1 and 4 only
(d) 2, 3 and 4

80.
For acquiring remotely sensed data, satellites use:

1. reflected sunlight.
2. reflected electromagnetic radiation.
3. Charged Couple Device (CCD).
4. photographic cameras.

Select the correct answer using the code given below:
(a) 1 and 3
(b) 2 and 3
(c) 1 and 4
(d) 2 only

81.
Shotcrete is a:
(a) type of concrete used in building masonry dams.
(b) metal screen with 4 inch openings used in anchor bolts.
(c) fibre reinforced spray that prevents small rock fragments from falling.
(d) standard rock bolt usually 10 – 25 metres long and grouted with a cement grout.

82.
Gossans or cap rocks are NOT good indicators of which of the following types of deposits?

1. Hydrothermal deposits
2. Placer deposits
3. Residual deposits
4. Secondary sulphide deposits

Select the correct answer using the code given below:

(a) 1, 2 and 3
(b) 1, 3 and 4
(c) 2 and 3 only
(d) 1, 2 and 4

83.
Which one of the following exploration drilling methods is suitable for geochemical sampling in upper few metres of unconsolidated material?

(a) Power auger drilling
(b) Rotary air blast drilling
(c) Diamond drilling
(d) Hand auger drilling

84.
Which of the following are NOT used as gemstone?

1. Graphite
2. Asbestos
3. Corundum
4. Dolomite

Select the correct answer using the code given below:

(a) 1 and 4 only
(b) 1, 2 and 4
(c) 1, 2 and 3
(d) 2, 3 and 4

85.
Copper deposits of Singhbhum are NOT examples of:

1. Fissure vein deposits.
2. Shear zone deposits.
3. Saddle reef deposits.
4. Ladder vein deposits.

Select the correct answer using the code given below:

(a) 1, 2 and 4
(b) 3 and 4 only
(c) 1, 2 and 3

(d) 1, 3 and 4

86.
Which of the following is / are ores of Tungsten?

1. Scheelite
2. Azurite
3. Wolframite
4. Psilomelane

Select the correct answer using the code given below:
(a) 3 only
(b) 2 and 4
(c) 3 and 4
(d) 1 and 3

87.
The petroleum deposits of Digboi oil field occur in the rock sequences of:
(a) Eocene age.
(b) Miocene age.
(c) Oligocene age.
(d) Palaeocene age.

88.
The largest deposit of sillimanite in India is found at:
(a) Pohra in Bhandara district, Maharashtra.
(b) Sonapahar in Meghalaya.
(c) Keonjhar in Odisha.
(d) Bastar district in Chattisgarh.

89.
Proterozoic Banded Iron Formations (BIF) are:

1. Sedimentary deposits.
2. Metamorphic deposits.
3. Hydrothermal deposits.
4. Magmatic deposits.

Select the correct answer using the code given below:
(a) 1 and 2
(b) 4
(c) 1 only
(d) 2 and 3

90.
Which of the following are ores of aluminium?

1. Gibbsite
2. Pyrolusite
3. Bauxite
4. Malachite

Select the correct answer using the code given below:
(a) 1, 2 and 3
(b) 3 only
(c) 1 and 3 only
(d) 2 and 4

91.
Which of the following pairs of metal and ore mineral are correctly matched?

1. Copper : Chalcopyrite
2. Zinc : Sphalerite
3. Lead : Bornite

Select the correct answer using the code given below:
(a) 1 only
(b) 2 and 3 only
(c) 1 and 2 only
(d) 1, 2 and 3

92.
Which of the following raw materials are used in the production of cement?

1. Gypsum
2. Limestone
3. Clay
4. Silica

Select the correct answer using the code given below:
(a) 1 and 2 only
(b) 1, 2 and 3
(c) 1, 3 and 4
(d) 2, 3 and 4

93.
In contact metasomatic deposits, which one of the following rock types is the best host rock?
(a) Calcareous rock
(b) Argillaceous rock
(c) Arenaceous rock

(d) Alkaline rock

94.
The tooth like projections in a spillway bucket is known as:
(a) Chutes.
(b) Penstocks.
(c) Training walls.
(d) Dentates.

95.
The reservoir of which of the following dams is named as Govind Sagar?
(a) Tehri dam
(b) Bhakra dam
(c) Koyna dam
(d) Periyar dam

96.
A horizontal or near horizontal underground excavation open to the surface at one end only is known as:
(a) tunnel.
(b) adit.
(c) raise.
(d) shaft.

97.
A dam will always have a:

1. spillway.
2. penstock.
3. power house.
4. reservoir.

Select the correct answer using the code given below:
(a) 1 only
(b) 2 and 3
(c) 3 and 4
(d) 1 and 4

98.
Some rock testing procedures are given below:
1. Brazilian test.
2. Schmidt Hammer test.
3. Point load test.

Which of the above tests is / are known as index test(s)?
(a) 1 only
(b) 1, 2 and 3
(c) 1 and 3 only

(d) 2 and 3 only

99.
Tehri dam is situated on the confluence of two rivers; one is Bhagirathi, and the other is:
(a) Mandakini
(b) Alaknanda
(c) Bhilangana
(d) Tons

100.
The love waves generated during earthquake are:
(a) compressional waves.
(b) shear waves.
(c) longitudinal waves.
(d) transverse waves.

101.
The 'Aerosols' produced during volcanic eruptions mostly consist of:
(a) hydrochloric acid droplets.
(b) sulphuric acid droplets.
(c) carbonic acid droplets.
(d) phosphoric acid droplets.

102.
The water table is the top surface of the:
(a) vadose zone.
(b) phreatic zone.
(c) subduction zone.
(d) shadow zone.

103.
Consider the following statements with reference to confined aquifer:

1. A confined aquifer is bounded above and below by impermeable rocks.
2. Water in a confined aquifer is remaining under confined pressure.
3. Water table is related with confined aquifer.

Which of the statements given above is / are correct?
(a) 1 only
(b) 2 only
(c) 1 and 2
(d) 3

104.

If Q = discharge, A = cross sectional area, K = hydraulic conductivity and $\frac{\Delta h}{\Delta l}$ is the hydraulic gradient, then the Darcy's law is:

(a) $K = Q.A. \frac{\Delta h}{\Delta l}$

(b) $Q = K.A. \frac{\Delta h}{\Delta l}$

(c) $Q = \frac{\Delta h}{\Delta l} . \frac{K}{A}$

(d) $K = \frac{\Delta h}{\Delta l} . \frac{A}{Q}$

105.

Gasohol is a:

(a) toxic gas.
(b) alcohol bio-fuel.
(c) waste material.
(d) acidic water.

106.

Tsunami waves have:

(a) a high amplitude offshore and a very long wavelength.
(b) a small amplitude offshore and a very long wavelength.
(c) a high amplitude offshore and a normal wave length.
(d) a small amplitude offshore and a normal wavelength.

107.

Pear drop structures and flame structures are:

(a) Seismites.
(b) Penecontemporaneous structures.
(c) Syndepositional structures.
(d) Fluvial structures.

108.

Soil liquefaction is commonly observed in:

(a) saturated, uncompacted sandy soils.
(b) poorly saturated, uncompacted sandy soils.
(c) saturated, moderately compacted muddy soils.
(d) saturated, uncompacted clay rich soils.

109.
Consider the following with regard to swarm type earthquake pattern:

1. Deep seated earthquakes.
2. Spreading centre ridges.
3. Shallow crustal magmatic activity.
4. Buried seismically active ridges.

Which of the above describe the possible scenario for generation of swarm earthquakes?

(a) 1 and 2
(b) 2 and 3 only
(c) 1, 3 and 4
(d) 2, 3 and 4

110.
Consider the following statements regarding tectonically active terrain characterized by the presence of an active fault:

1. Offset streams are evident.
2. Headless valleys are present.
3. Sag ponds are aligned along the active fault trace.
4. The terrain is Precambrian and represented by Banded Gneissic Complex.

Which of the above are correct with respect to an active terrain set up?

(a) 1 and 2 only
(b) 2 and 3 only
(c) 1, 2 and 3
(d) 1 and 4

111.
The continuous distance that the wind blows over a water surface to generate waves is known as:

(a) Fetch.
(b) Baymouth bar.
(c) Wave period.
(d) Tombolo.

112.
A flat topped seamount rising more than 1 km above the seafloor is known as:

(a) a guyot.
(b) an atoll.
(c) submarine fan.
(d) continental rise.

113.
Which one of the following is generated by waves approaching a shoreline at an angle?

(a) Flood tides
(b) Longshore currents
(c) Deposition of sea stacks
(d) Coastal emergence

114.
Which of the following statements with regard to reef formation are correct?

1. Fringing reefs grow around the perimeter of an island
2. Fringing reef becomes separated from the island by a lagoon, forming a barrier reef
3. An atoll forms as the island sinks beneath the sea
4. An atoll forms as the island and the reef continue to grow upward

Select the correct answer using the code given below:

(a) 1, 2 and 3
(b) 1 and 4
(c) 2, 3 and 4
(d) 2 and 3 only

115.
Which of the following are the effects of the rise in sea temperature on marine life?

1. The photosynthesis by phytoplankton in the marine ecosystem would be markedly reduced
2. There would be loss of fish population
3. Coral bleaching would result in mass destruction of corals
4. The population of micro-phytoplankton would grow due to exposure to ultraviolet radiation

Select the correct answer using the code given below:

(a) 1, 2 and 3
(b) 2, 3 and 4
(c) 1 and 4
(d) 2 and 3 only

116.
Consider the following statements with regard to Triangular Irregular Network (TIN) Model:

1. TIN model represents a set of contiguous, overlapping triangles.
2. The triangles are made from a set of points called mass points.
3. Mass points are best located where there is a major change in the shape of the surface.
4. These models fail to describe the surface at different levels of resolution.

Which of the statements given above are correct?

(a) 1 and 2
(b) 2 and 3 only
(c) 2, 3 and 4
(d) 1 and 4

117.
A non-essential component of a digital terrain model is:

(a) height data of terrain.
(b) spatial data of natural features.
(c) spatial data of towns and cities.
(d) spatial data of population distribution.

118.
Fault lines, river channels and roads are best represented in GIS by:

(a) Vector data models.
(b) Raster data models.
(c) TIN models.
(d) Georelational data models.

119.
Consider the following statements regarding Raster Data Model:

1. Raster model divides the area into grid cells or pixels.
2. Raster models are useful for storing discrete data.
3. The model divides the world using points, lines and polygons.
4. The geographic location of each cell is implied by its position in the cell matrix.

Which of the statements given above is / are correct?

(a) 1 only
(b) 2 and 3
(c) 1 and 4
(d) 2 and 4

120.
GPS, the world's most utilized satellite navigation system developed by the United States, comprises:

(a) 4 medium Earth orbit satellites in each of the 6 different orbital planes.
(b) 4 medium Earth orbit satellites in each of the 5 different orbital planes.
(c) 6 medium Earth orbit satellites in each of the 4 different orbital planes.
(d) 7 medium Earth orbit satellites in each of the 5 different orbital planes.