

Section 1 - Section 1

Question No.1

4.00

Bookmark ☐

Name the microfossil in the above figure

- ☐ Foraminifera
- ☐ Radiolarian
- ☐ Pollen grain
- ☐ Conodonts

Question No.2

4.00

Bookmark ☐

When the bus was at full speed, its brakes failed and an accident was _____

- ☐ essential
- ☐ undeniable
- ☐ inevitable
- ☐ infallible

Question No.3

4.00

Bookmark ☐

Greywacke typically exhibits

- ☐ Herringbone cross-bedding
- ☐ Flaser bedding
- ☐ Graded bedding
- ☐ Torrential bedding

Question No.4

4.00

Bookmark ☐

Which was the warmest epoch of the Cenozoic?

- ☐ Eocene
- ☐ Paleocene
- ☐ Oligocene
- ☐ Miocene

Question No.5

4.00

Bookmark ☐

In contact metamorphism the source of increased temperature and pressure is _____

- ☐ a local intrusive heat source
- ☐ impact metamorphism
- ☐ the increase in temperature with increasing depth of burial
- ☐ due to increased rate of radioactive decay

Question No.6

4.00

Bookmark ☐

The specific gravity of a powdered mineral can be determined with the help of

- ☐ Walker's Steel Yard
- ☐ Pycnometer
- ☐ Chemical balance
- ☐ Jolly's spring balance

Question No.7

4.00

Bookmark ☐

We must always try to adapt ourselves _____ our circumstances.

- ☐ to
- ☐ in
- ☐ by
- ☐ with

Question No.8

4.00

Bookmark ☐

Diamond bearing conglomerates of central India underlie _____

- ☐ Bhandar series
- ☐ Kaladgi series
- ☐ Sakoli series
- ☐ Saline series

Question No.9

4.00

Bookmark ☐

Diagenesis of organic matter forms ----

- ☐ Dry Gas
- ☐ Gas
- ☐ Oil
- ☐ Kerogen

Question No.10

4.00

Bookmark ☐

The term pH stands to

- ☐ Pure Hydrogen
- ☐ Per Hydrogen ion
- ☐ Puissance de Hydrogen
- ☐ Potential Hydrogen

Question No.11

4.00

Bookmark ☐

A limestone composed entirely of organic detritus is referred as

- ☐ Encrinite
- ☐ Coquina
- ☐ Oolite
- ☐ Spargenite

Question No.12

4.00

Bookmark ☐

This pup is very naughty. It is always _____ some mischief or the other.

- ☐ out for
- ☐ up to
- ☐ in for
- ☐ up at

Question No.13

4.00

Bookmark ☐

The path finder element for exploration for gold deposits is _____

- ☐ Arsenic
- ☐ Silver
- ☐ Nickel
- ☐ Antimony

Question No.14

4.00

Bookmark ☐

Gravity fault are formed under ____ regime

- ☐ Shear
- ☐ Compressive force
- ☐ Effect of torsion forces
- ☐ Tensile stress

Question No.15

4.00

Bookmark ☐

_____ is a satellite sensor.

- ☐ AVIRIS
- ☐ HYPERION
- ☐ LISS IV
- ☐ LISS III

Question No.16

4.00

Bookmark ☐

Diamond in Kimberlite and Corundum in Nepheline syenite are examples of__

- ☐ Injected deposit.
- ☐ Disseminated deposit
- ☐ Segregated deposit
- ☐ Pegmatitic deposit

Question No.17

4.00

Bookmark ☐

Which type of pressure will result in the alignment of metamorphic minerals?

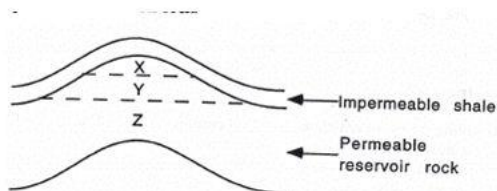
- ☐ contact pressure
- ☐ chemical pressure
- ☐ confining pressure
- ☐ directed pressure

Question No.18

4.00

Bookmark ☐

Reservoir rock containing _____ in the pore space of XYZ layers find the correct content in the pore spaces of XYZ layers



- ☐ X-Water/Y-gas/Z-Oil
- ☐ X-water/Y-Gas/Z-Oil

- ☐ X-Water/Y-Gas/Z-Oil
- ☐ X-Gas/Y-Oil/Z-Water
- ☐ X-Oil/Y-water/Z-Gas

Question No.19

4.00

Bookmark ☐

In the following question, the first two words (given in italics) have a definite relationship. Choose one word out of the given four alternatives which will fill the blank space and show the same relationship with the third word as between the first two.

Hear is to *Deaf* as *Speak* is to?.....

- ☐ Dumb
- ☐ Listen
- ☐ Talkative
- ☐ Silent

Question No.20

4.00

Bookmark ☐

In which type of formation, the capillary rise will be high?

- ☐ Medium sand.
- ☐ Clay
- ☐ Gravel
- ☐ Loam.

Question No.21

4.00

Bookmark ☐

Find the odd one out?

- ☐ Silkworm: Sericulture
- ☐ Fish : Pisciculture
- ☐ Birds : Horticulture
- ☐ Bees : Apiculture

Question No.22

4.00

Bookmark ☐

The magnitude of gravity on the earth's surface depends on

- ☐ density variations in the subsurface
- ☐ latitude, elevation and topography
- ☐ latitude, elevation, topography, earth tides and density variations in the subsurface
- ☐ latitude, elevation, topography and earth tides.

Question No.23

4.00

Bookmark ☐

Which of the following isotopes is NOT a radioisotope?

- ☐ Sulphur-35
- ☐ Carbon-14
- ☐ Carbon-13
- ☐ Tritium

Question No.24

4.00

Bookmark ☐

Correct the error in the italicized part of the sentence by choosing the most appropriate option.

Leaving aside little room for misinterpretation, the senior politician offered clarifications about his role in the party elections.

- ☐ Leaving less room for
- ☐ Leaving little room for
- ☐ Leaving for little room to
- ☐ Having left less room for

Question No.25

4.00

Bookmark ☐

Limestone and chalk beds are often derived from the shells of

- ☐ foraminifera.
- ☐ radiolarians
- ☐ dinoflagellates
- ☐ diatoms

Question No.26

4.00

Bookmark ☐

The thickest coal seam in India is;

- ☐ Jaharia
- ☐ Raniganj
- ☐ Bokaro
- ☐ Singrauli

Question No.27

4.00

Bookmark ☐

The tendency for variations in current velocity to segregate sediments based on particle size is called

- ☐ metamorphism
- ☐ compaction
- ☐ sorting
- ☐ lithification

Question No.28

4.00

Bookmark ☐

Which is the fundamental step in image processing?

- ☐ image enhancement
- ☐ image acquisition
- ☐ filtration
- ☐ image restoration

Question No.29

4.00

Bookmark ☐

The geochemical character of an element is governed by the----

- ☐ number of proton in the nucleus
- ☐ number of neutrons in the nucleus
- ☐ number of isotopes in nucleus
- ☐ electronic configuration of its atoms.

Question No.30

4.00

Bookmark ☐

Folds with a pair of converging axial surfaces and having a square hinge zone are known as

- ☐ Similar folds
- ☐ Box folds
- ☐ Parallel
- ☐ Overturn folds

Question No.31

4.00

Bookmark ☐

Which of the following sedimentary environments is characterized by sand, gravel and mud?

- ☐ deep marine
- ☐ alluvial fans
- ☐ active margin beach
- ☐ glacial

Question No.32

4.00

Bookmark ☐

Which of the wavelength is useful for imaging from a satellite in cloud-covered condition?

- ☐ 4 cm
- ☐ 4mm
- ☐ 0.4nm
- ☐ 4nm

Question No.33

4.00

Bookmark ☐

Incohesive rock containing angular rock fragments set in a fine grained matrix is referred as

- ☐ Cataclastics
- ☐ Breccia
- ☐ Gouges
- ☐ Mylonites

Question No.34

4.00

Bookmark ☐

Batholiths are always associated with

- ☐ Folds and faults
- ☐ Earth zones
- ☐ Orogenic belt
- ☐ Island arcs

Question No.35

4.00

Bookmark ☐

The altitude of LANDSAT satellite is

- ☐ 900Km
- ☐ 600Km
- ☐ 1200Km
- ☐ 800Km

Question No.36

4.00

Bookmark ☐

If Road is coded as WTFI, what is the code for BEAT

- ☐ GJFY
- ☐ HIGZ
- ☐ DEFG
- ☐ ABCD

Question No.37

4.00

Bookmark ☐

Which metals may be obtained from the stagnate ore mineral?

- ☐ Zinc and silver.
- ☐ Copper and Tin.
- ☐ Copper and zinc.
- ☐ Copper and Tungsten.

Question No.38

4.00

Bookmark ☐

Compressibility can be described as reciprocal of

- ☐ Young Modulus

- ☐ Young modulus
- ☐ Bulk modulus
- ☐ Poisson Ratio
- ☐ Rigidity modules

Question No.39

4.00

Bookmark ☐

Extremely large scale lithostratigraphic units bounded by transgressive-regressive unconformities are called

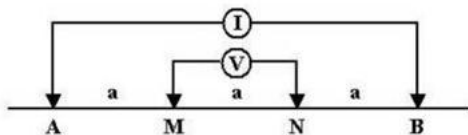
- ☐ facies
- ☐ cratonic sequences
- ☐ mobile belts
- ☐ Super groups

Question No.40

4.00

Bookmark ☐

Identify the type of geophysical method



- ☐ magnetic
- ☐ Schlumberger
- ☐ Gravity
- ☐ Wenner

Question No.41

4.00

Bookmark ☐

Which of the following metamorphic rocks forms in the forearc of a subduction zone?

- ☐ Gneiss
- ☐ Amphibolite
- ☐ Quartzite
- ☐ Blueschist

Question No.42

4.00

Bookmark ☐

The deposition of amorphous silica layer by layer produces

- ☐ Liesegang banding
- ☐ Cockade structure
- ☐ Comb structure
- ☐ Geodes

Question No.43

4.00

Bookmark ☐

Exhausted: Tired

- ☐ Depressed : Sad
- ☐ Arrogant: Docile
- ☐ Considerate: Rude
- ☐ Progressive: Regressive

Question No.44

4.00

Bookmark ☐

A man makes 150 pots per minute. If 30 pots are packed in a case how many cases will be made ready by the Man in one hour?

- ☐ 200
- ☐ 250
- ☐ 300

Question No.45

4.00

Bookmark ☐

Melange deposits are associated with

- ☐ transform boundaries
- ☐ Convergent boundaries
- ☐ subduction margins
- ☐ divergent boundaries

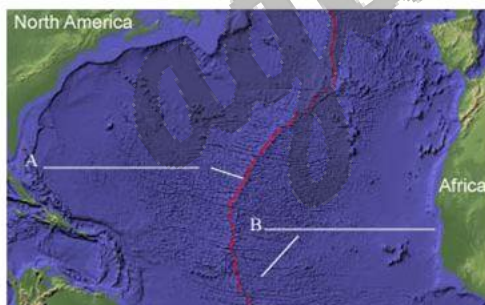
Question No.46

4.00

Bookmark ☐

On the following illustration identify the features A and B

On the following illustration identify the features A and B



- ☐ Mid-Atlantic Ridge
- ☐ Carls Ridge
- ☐ Mid Oceanic Ridge
- ☐ East Pacific Ridge

Question No.47

4.00

Bookmark ☐

What may be the maximum angle of wind ward slope and Leeward slope in a sand dune?

- ☐ 20° and 60°
- ☐ 5° and 30°
- ☐ 10° and 40°
- ☐ 15° and 50°

Question No.48

4.00

Bookmark ☐

A dendritic drainage pattern will tend to develop in regions

- ☐ along the flanks of isolated volcanoes
- ☐ of flat-lying sedimentary rocks
- ☐ Underlain by regularly spaced joints
- ☐ Of folded rocks

Question No.49

4.00

Bookmark ☐

In petroleum exploration, the Biosurfactant is -----

- ☐ variety of metabolic products
- ☐ Variety of Kerogen
- ☐ Types of sulfur
- ☐ Type of mud

Question No.50

4.00

Bookmark ☐

During the Cambrian, most of the continents were-----

- ☐ together in one landmass
- ☐ dispersed around polar regions
- ☐ dispersed in low latitude regions
- ☐ covered by ice

Question No.51

4.00

Bookmark ☐

Choose the synonym of the italicized word. Many cities were *incinerated* during the war.

- ☐ attacked
- ☐ burnt
- ☐ destroyed
- ☐ bombed

Question No.52

4.00

Bookmark ☐

Which type of geophysical prospecting method is used for direct exploration of chromite?

- ☐ Resistivity
- ☐ Magnetic
- ☐ Seismic
- ☐ Gravity

Question No.53

4.00

Bookmark ☐

The Isometric system is characterized by

- ☐ 3 axes of 4 fold symmetry
- ☐ 6 axes of 5 fold symmetry
- ☐ 2 axes of 4 fold symmetry
- ☐ 4 axes of 3 fold symmetry

Question No.54

4.00

Bookmark ☐

_____ is an example of a shoreline/transitional depositional environment

- ☐ Littoral
- ☐ Lagoon
- ☐ Delta
- ☐ Shelf

Question No.55

4.00

Bookmark ☐

_____ is a useful statistic to calculating goodness of fit

- ☐ Chi-square test
- ☐ Fourier analysis

- ☐ f-test
- ☐ Normal distribution

Question No.56

4.00

Bookmark ☐

Why do Mercury and the Moon lack an atmosphere?

- ☐ They are cold that all their gases have frozen into deposits below their surface.
- ☐ They are small that their gravity is too weak to retain an atmosphere.
- ☐ They formed after all the gas had been used up.
- ☐ They formed before the solar nebula had captured any gas.

Question No.57

4.00

Bookmark ☐

Statement: The Company has recently announced a series of incentives to the employees who are punctual and sincere.

Assumptions:

I.Those who are punctual will get motivated.

II. The Productivity of the company may increase.

- ☐ If only assumption I is implicit
- ☐ If only assumption II is implicit
- ☐ If both I and II are implicit
- ☐ If neither I nor II is implicit

Question No.58

4.00

Bookmark ☐

Find the odd one out?

- ☐ Flourish
- ☐ Renovate
- ☐ Thrive
- ☐ Blossom

Question No.59

4.00

Bookmark ☐

The bauxite deposits of central and western India have been formed from

- ☐ Basalt.
- ☐ Syenite.
- ☐ Granite
- ☐ Nepheline syenite

Question No.60

4.00

Bookmark ☐

Which of the option exhibits a distinctive texture called *Spinifex texture*?

- ☐ Spilites
- ☐ Tholeiites
- ☐ Picrites
- ☐ Komatiites

Question No.61

4.00

Bookmark ☐

Ocean island Basalt magmas are characterized by_____

- ☐ Enrichment in LREE and LILE
- ☐ Enrichment of LREE and LILE compare to continental crust
- ☐ Depletion in LILE and LREE compare to MORB
- ☐ Large scale contamination of continental crust

Question No.62

4.00

Question No.62 4.00 Bookmark ☐

On the toposheet; 4 cm= 2Km. What is scale of the map?

- ☐ 1:50
- ☐ 1:05
- ☐ 0.3888
- ☐ 1:50,000

Question No.63

4.00

Bookmark ☐

Statement: Warning: Cigarette smoking is injurious to Health

Assumptions:

I. Non-Smoking Promotes Health

II. This warning is not necessary

- ☐ If only assumption II is implicit
- ☐ If only assumption I is implicit
- ☐ If both I and II are implicit
- ☐ If neither I nor II is implicit

Question No.64

4.00

Bookmark ☐

A vertical dyke showing transverse veins is known as

- ☐ Vug
- ☐ Ladder vein
- ☐ Saddle reef
- ☐ Stock work

Question No.65

4.00

Bookmark ☐

Which color is having largest wavelength in visible spectrum?

- ☐ Yellow
- ☐ Red
- ☐ Green
- ☐ Blue

Question No.66

4.00

Bookmark ☐

Select the Pair that best represents the relationship that is given in the question:

Slapstick:Laughter

- ☐ Mimicry:Laughter
- ☐ Clown: Comical
- ☐ Satire: Sarcasm
- ☐ Horror:Fear

Question No.67

4.00

Bookmark ☐

Gossans is a

- ☐ ferruginous residue
- ☐ siliceous residue.
- ☐ calcareous residue.
- ☐ organic residue.

Question No.68

4.00

Bookmark ☐

Which of the following is released in large quantities from coal after it is burnt?

- ☐ Helium
- ☐ Hydrogen
- ☐ Nitrogen Dioxide
- ☐ Sulphur dioxide

Question No.69

4.00

Bookmark ☐

Flood hazards along a stream may be greatly reduced by the use of

- ☐ Retention ponds

- ☐ Deforestation
- ☐ Channelization
- ☐ Flood plains

Question No.70

4.00

Bookmark ☐

Igneous rocks owing their origin to the same parent magma are termed as

- ☐ Eutectic
- ☐ Paramagnetic
- ☐ Orthomagnetic
- ☐ Comagmatic

Question No.71

4.00

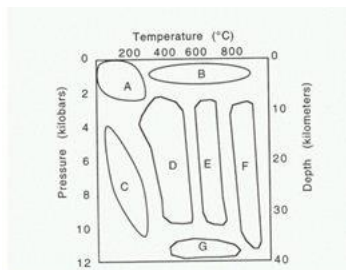
Bookmark ☐

Quartz wedge is always cut

- ☐ Parallel to b-axis
- ☐ Perpendicular to c-axis
- ☐ Parallel to c-axis
- ☐ Perpendicular to b-Axis

Question No.72

4.00

Bookmark ☐

The zeolite facies occur in _____ pressure-temperature regime

- ☐ Area "D"
- ☐ Area "C"
- ☐ Area "A"
- ☐ Area "B"

Question No.73

4.00

Bookmark ☐

Which of the following is NOT a type of silicate structure?

- ☐ sheet silicate
- ☐ double chain silicate
- ☐ single-chain silicate
- ☐ Mobius strip silicate

Question No.74

4.00

Bookmark ☐

The downward movement of wet soil along the slopes under the influence of gravity is ____

- ☐ Solifluction
- ☐ Plastic outflows
- ☐ Rock slides
- ☐ Debris flow

Question No.75

4.00

Bookmark ☐

In which of the following environments would you expect to find symmetrical ripples?

- ☐ Fluvial
- ☐ Glacial
- ☐ Beach
- ☐ Aeolian

Question No.76

4.00

Bookmark ☐

I don't care if she comes to my house or not.
The underlined word is a

- ☐ gerund
- ☐ conjunction
- ☐ verb
- ☐ pronoun

Question No.77

4.00

Bookmark ☐

The characteristic rocks of the Island-Arc Systems are

- ☐ Andesite
- ☐ Blue Schist
- ☐ Granodiorite
- ☐ Basalts

Question No.78

4.00

Bookmark ☐

Asphaltenes are molecular substances that are found in _____

- ☐ paraffin
- ☐ Resins
- ☐ Gas
- ☐ Crude Oil

Question No.79

4.00

Bookmark ☐

A potassic ultrabasic hybrid igneous rock containing macrocrysts of olivine, Cr-rich diopside, phlogopite and pyrope in a groundmass of serpentine, carbonate and perovskite can be named as

- ☐ Kimberlite
- ☐ Harzburgite
- ☐ Melilitolite
- ☐ Ijolite

Question No.80

4.00

Bookmark ☐

Cross bedding is a _____ property

- ☐ Scalar
- ☐ Either scalar or vector
- ☐ Vector
- ☐ Linear

Question No.81

4.00

Bookmark ☐

Which of the following is NOT a primary contributor to the greenhouse effect?

- ☐ carbon monoxide
- ☐ chlorofluorocarbons
- ☐ carbon dioxide
- ☐ methane gas

Question No.82

4.00

Bookmark ☐

Where are melts likely to be produced by the adiabatic rise of mantle?

- ☐ East pacific Ridge
- ☐ Atlantic ridge
- ☐ mid-oceanic ridges and hot spots

☐ M-discontinuity zone

Question No.83

4.00

Bookmark ☐

Which planets have retrograde rotation?

- ☐ Jupiter and Neptune
- ☐ Venus and Uranus
- ☐ Mercury and Pluto
- ☐ Saturn and Mars

Question No.84

4.00

Bookmark ☐

In India, Baryte deposits occurs in----- form

- ☐ vein type
- ☐ fissure type.
- ☐ stringer type
- ☐ bedded type

Question No.85

4.00

Bookmark ☐

Ptillophyllum flora is the characteristic of?

- ☐ Hot and dry climate
- ☐ Desert climate
- ☐ Cold climate
- ☐ Marine climate

Question No.86

4.00

Bookmark ☐

Cavities in lava formed by the evolution of volatiles are

- ☐ Amygdule
- ☐ Oolites
- ☐ Pumice
- ☐ Pisolites

Question No.87

4.00

Bookmark ☐

In olivine structure the layers consisting of octahedral cross linked by independent SiO_4 tetrahedra, lie parallel to

- ☐ -10
- ☐ -101
- ☐ -100
- ☐ -1

Question No.88

4.00

Bookmark ☐

When Uranium-238 emits α particles it decays in to

- ☐ Thorium-234
- ☐ Uranium-235
- ☐ Helium
- ☐ Carbon

Question No.89

4.00

Bookmark ☐

Choose the best antonym of the italicized word.

There has always been a feeling of *rancour* between the two families.

- ☐ friendliness
- ☐ suspicion
- ☐ competition
- ☐ rivalry

Question No.90

4.00

Bookmark ☐

The stress opposing a slope's shear stress is imparted by _____

- ☐ gravity
- ☐ running water
- ☐ earthquakes
- ☐ frost wedging

Question No.91

4.00

Bookmark ☐

Study the following information carefully and answer the question below it:

P, Q, R, S T went on a picnic. P is son of Q but Q is not the father of P. R is the son of S, who is the brother of P. T is the wife of S.

How is P related to S?

- ☐ Brother
- ☐ Father
- ☐ Nephew
- ☐ None of these

Question No.92

4.00

Bookmark ☐

We're late again for the test, _____?

- ☐ isn't it?
- ☐ are we?
- ☐ aren't we?
- ☐ is it?

Question No.93

4.00

Bookmark ☐

Chromium is a straggly lithophile element in the earth's crust, but it is found as Chalcophile in some meteorites because of ____

- ☐ Oxygen rich
- ☐ Hydrogen deficiency
- ☐ Oxygen deficiency
- ☐ Carbon deficiency

Question No.94

4.00

Bookmark ☐

Which of the following rocks is deposited only by non-biological, chemical precipitation?

- ☐ coal
- ☐ chert
- ☐ halite
- ☐ limestone

Question No.95

4.00

Bookmark ☐

People in the age group of 40 to 50 years are more likely to purchase ice cream and are more likely to purchase it in large amounts than are members of any other age group. The general perception that teenagers eat more ice cream than adults must, therefore, be incorrect.

The argument is flawed primarily because the author

- ☐ does not specify the precise amount of ice cream purchased by any demographic group
- ☐ fails to distinguish between purchasing and consuming
- ☐ discusses ice cream rather than more nutritious and healthful foods
- ☐ depends on popular belief rather than on documented research findings

Question No.96

4.00

Bookmark ☐

Horizontal access to ore body in the underground mines are-----

- ☐ Adit
- ☐ Stope
- ☐ Shaft
- ☐ Winze

Question No.97

4.00

Bookmark ☐

_____ type of logs used to measure the specific resistance of the geologic formation.

- ☐ Caliper
- ☐ Neutron
- ☐ Resistivity
- ☐ Gamma ray

Question No.98

4.00

Bookmark ☐

Study the following information carefully and answer the question below it

The Director of an MBA college has decided that six guest lectures on the topics of Motivation, Decision Making, Quality Circle, Assessment Centre, Leadership and Group Discussion are to be organised on each day from Monday to Sunday.

- (i) One day there will be no lecture (Saturday is not that day), just before that day Group Discussion will be organised.
- (ii) Motivation should be organised immediately after Assessment Centre.
- (iii) Quality Circle should be organised on Wednesday and should not be followed by Group Discussion
- (iv) Decision Making should be organised on Friday and there should be a gap of two days between Leadership and Group Discussion

On which day the lecture on Leadership will be organised?

- ☐ Saturday
- ☐ Tuesday
- ☐ Monday
- ☐ Thursday

Question No.99

4.00

Bookmark ☐

The evaporation through plants and from the surrounding soil together is known as

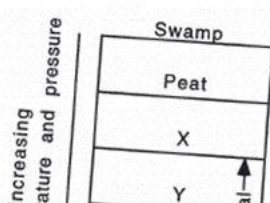
- ☐ Both a and b
- ☐ Evapo-transpiration
- ☐ Evaporation
- ☐ Transpiration

Question No.100

4.00

Bookmark ☐

Name the types of coals in X-Y-Z layers in an order





- ☐ Lignite-Bituminous-Anthracite
- ☐ Bituminous-Lignite-Anthracite
- ☐ Anthracite-Lignite-Bituminous
- ☐ Lignite-Anthracite-Bituminous

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Sr No.	MTech Exploration Geoscience
1	Which fraction comes next in the sequence
	$\frac{1}{2}, \frac{3}{4}, \frac{5}{8}, \frac{7}{16}, ?$
Alt1	9/32
Alt2	10/17
Alt3	11/34
Alt4	12/35

2	Choose the missing term out of the given options: Ac _ cab _ baca _ aba _ acac
Alt1	aacb
Alt2	acbc
Alt3	babb
Alt4	bcbb

3	Leaf is related to Sap in the same way as Bone is related.....?.....
Alt1	Fluid
Alt2	Blood
Alt3	Marrow
Alt4	Calcium

4	Select the lettered pair that has the same relationship as the original pair of words: Rotate: Gyrate
Alt1	Putrefy: Reject
Alt2	Anachronism: Cubism
Alt3	Accolade: Criticism
Alt4	Absolve: Exonerate

5	Choose the alternative, which is similar to the given words: Liver : Heart : Kidney
Alt1	Blood
Alt2	Nose
Alt3	Lung
Alt4	Urine

6	Spot the defective segment from the following:
Alt1	The more you read
Alt2	the more will you
Alt3	get to know
Alt4	about more things

7	Choose the meaning of the idiom/phrase from among the options given: A rainy day
Alt1	a holiday
Alt2	a difficult time
Alt3	a fine day
Alt4	a wet day

8	The villagers plan to ----- the elections in protest.
Alt1	avoid
Alt2	ignore
Alt3	neglect
Alt4	boycott

9	Choose the option closest in meaning to the given word: PUERILE
Alt1	vulgar
Alt2	perverse
Alt3	childish
Alt4	young

10	Choose the antonymous option you consider the best: OBTUSE
Alt1	fast
Alt2	sharp
Alt3	reliable
Alt4	lucid

11	In a Cricket tournament, each of the six teams will play every other team exactly once during the league phase. How many matches will be played during the league phase in total ?
Alt1	12
Alt2	36
Alt3	15
Alt4	24

12	A walks 10 metres in front and 10 metres to the right. The every time turning to his left, he waks 5, 15 and 15 metres respectively. How far is he now from the starting point ?
Alt1	15 metres
Alt2	5 metres
Alt3	10 metres
Alt4	30 metres

13	The sum of the income of A and B is more than that of C and D taken together. The sum of the income of A and C is the same as that of b and D taken together. Moreover, A earns half as much as the sum of the income of b and D. Whose income is he highest ?
Alt1	A
Alt2	B

Alt3	C
Alt4	D

14	Five boys A, B, C, D and E are seated on a bench. A is to the left of C. b is to the immediate right of D and there are two people between C and D. E is to the extreme right of the row. Who is exactly at the middle of this group ?
Alt1	A
Alt2	B
Alt3	C
Alt4	E

15	A man is facing south. He turns 1350 in the anticlockwise direction and then 1800 in the clockwise direction. Which direction is he facing now?
Alt1	North East
Alt2	North West
Alt3	South East
Alt4	South West

16	Find the number which when added to itself 17 times becomes 126.
Alt1	13
Alt2	7
Alt3	9
Alt4	18

17	Ravi is exactly 9999 days old today. How old is he?
Alt1	27
Alt2	28
Alt3	26
Alt4	29

18	A Maths teacher usually has 21 students in his class. A,B & C are asleep. D&E are in the bathroom and the teacher has sent F&G to the principal's office. How many students are left in the classroom?
Alt1	18
Alt2	19
Alt3	15
Alt4	17

19	JIPMER is coded as 589142; AIPMT is coded as 78910; Then JEE is coded as
Alt1	910
Alt2	544
Alt3	789
Alt4	914

20	Mr. Arvind drove 90 km at 30 kmph and then an additional 90 km at 45 kmph. What is his average speed over his 180 km ?
Alt1	37.5 kmph
Alt2	35 kmph
Alt3	36 kmph
Alt4	38 kmph

21	The region in a fold where the dip of the folded surface changes over small distance is
Alt1	Hinge zone
Alt2	Limb
Alt3	Axial plane
Alt4	Trough

22	Vein crustification is an example of
Alt1	Replacement type
Alt2	Cavity type
Alt3	Metamorphic type
Alt4	Sedimentary type.

23	Large bauxite deposits in India occur along
Alt1	Western ghats
Alt2	Eastern ghats
Alt3	West coast
Alt4	Indogangetic plains

24	Sensitive High Resolution ion probe (SHRIP) is
Alt1	Age determining method by Zircon crystal
Alt2	Type of remote sensing survey
Alt3	Type of film used for remote sensing survey
Alt4	Type of mineral exploration method

25	Which one is the main constituent of gaseous formations of petroleum?
Alt1	Methane
Alt2	Ethane
Alt3	Propane
Alt4	Butane

26	Secondary extraction of petroleum
Alt1	occurs immediately after primary extraction
Alt2	is less expensive than primary extraction
Alt3	uses solvents, water, or steam
Alt4	allows oil to be extracted to the last drop

27	Mark the correct statement:
Alt1	Anticlinal folds produce inlier and synclinal folds produce outlier
Alt2	Anticlinal folds produce outlier and synclinal folds produce inlier
Alt3	Inlier can be produced by both synclinal and anticlinal fold

Alt4	Outlier can be produced by both synclinal and anticlinal folds
------	--

28	In a stress-strain binary diagram where the ordinate represents the increasing stress and the abscissa represents the increasing strain, a line almost parallel to the abscissa is characteristic of
Alt1	Plastic material.
Alt2	Brittle material.
Alt3	Elastoplastic material.
Alt4	Ductile material.

29	The plunge and pitch are equal when the beds are:
Alt1	Horizontal
Alt2	Inclined
Alt3	Inclined at 45°.
Alt4	Vertical

30	When Uranium- 238 emits α particles it decays in to
Alt1	Helium
Alt2	Carbon
Alt3	Thorium-234
Alt4	Uranium-235

31	A good lubricant should have
Alt1	Pour point
Alt2	Volatility
Alt3	Viscosity index
Alt4	Cloud point

32	Gamma ray log measurements are used to quantify
Alt1	Hydrocarbon saturation
Alt2	Porosity of formation
Alt3	Volume of shale in the formation
Alt4	Density of the formation

33	Which of the following isotopes is most useful for dating very young wood and charcoal?
Alt1	Rb-87
Alt2	K-40
Alt3	C-14
Alt4	U-238

34	Which of the following mineral deposit is formed exclusively by surface geological processes?
Alt1	Asbestos
Alt2	Bauxite
Alt3	Corundum

Alt4	Wollastonite
------	--------------

35	We know that the outer core is liquid because
Alt1	P waves pass through it
Alt2	S waves pass through it
Alt3	P waves cannot pass through it
Alt4	S waves cannot pass through it

36	Non systematic method of sampling is
Alt1	Grab
Alt2	Chip
Alt3	Muck
Alt4	Channel

37	The refractive index of ocean water
Alt1	Increases with salinity
Alt2	Increases with salinity Decreases with salinity
Alt3	increases with temperature
Alt4	decreases with temperature

38	The spectral region of the electromagnetic radiation which passes through the atmosphere without much attenuation is known as
Alt1	Ozone hole
Alt2	Atmospheric window
Alt3	Ozone window
Alt4	Black hole

39	Corrections for diurnal variation in magnetic field is related to
Alt1	Temperature effect on magnetic system
Alt2	Rotation of the earth
Alt3	Changes in latitude and longitude
Alt4	Weather effects

40	Gravity corrections applied for differences in elevation of observation points is correction.
Alt1	Latitudinal
Alt2	Bouger
Alt3	Terrain
Alt4	Free air

41	The formula for estimation of ore reserves is
Alt1	Volume X Density
Alt2	Area X Thickness
Alt3	Volume X Thickness

Alt4	Area X Volume
------	---------------

42	An analytical concept where the analyzed data is either too high or too low compared to the expected composition is referred to as
Alt1	Sensitivity
Alt2	Drift
Alt3	Noise
Alt4	Bias

43	In the electromagnetic spectrum, lies between ultraviolet and gamma ray
Alt1	Infra-red
Alt2	Visible rays
Alt3	X-ray
Alt4	Microwave

44	Analysis involving chemical analysis of select areas of samples is done by
Alt1	XRF
Alt2	DTA
Alt3	EPMA
Alt4	Mass spectrometer

45	A group of geostatistical techniques to interpolate value of a random field is
Alt1	Simulation
Alt2	Krigging
Alt3	Ranging
Alt4	Annealing

46	Beta particles produced during radioactive decay consists of
Alt1	Neutrons
Alt2	Protons
Alt3	Electrons
Alt4	Electromagnetic radiation

47	In a normal distribution, the distribution curve is
Alt1	Bell shaped
Alt2	Positively skewed
Alt3	Negatively skewed
Alt4	Straight line

48	What is the most Appropriate Form of the measured value of the speed of an object given as $6051.78 \pm 30 \text{ m/s}$?
Alt1	6051.78 ± 30.00
Alt2	$(605178 \times 10^{\sup{-2}}) \pm (3 \times 10^{\sup{-1}})$
Alt3	6051.8 ± 30.0
Alt4	6052 ± 30

49	Everybody in the room shakes hand with everybody else. The total number of handshakes is 66. The total number of persons in the room is
Alt1	11
Alt2	12
Alt3	13
Alt4	14

50	Most of the Earth's bio-mass is provided by:
Alt1	Mammals
Alt2	Plants
Alt3	Planktons
Alt4	Fish

51	Which of these is a scale for measuring moisture in the atmosphere?
Alt1	Lactometer
Alt2	Barometer
Alt3	Hydrometer
Alt4	Hygrometer

52	The Earth's lithosphere is made up of
Alt1	Core and Mantle
Alt2	Crust and parts of Upper Mantle
Alt3	Entire Mantle
Alt4	Lower Mantle

53	What is the name given to the point on the Earth's surface directly above the focus of an earthquake?
Alt1	Hypocentre
Alt2	Ground Zero
Alt3	Epicentre
Alt4	Crust

54	When referring to earthquakes, what is a "Fault"?
Alt1	An existing weakness in the Earth's crust
Alt2	An area of the earth's crust least likely to be affected by an earthquake
Alt3	A large highly visible crack in the earth's crust
Alt4	A crater in the earth's crust caused by a previous earthquake

55	What is the name of India's only active volcano?
Alt1	Narcondum Island
Alt2	Deccan Traps
Alt3	Barren Island
Alt4	Reunion Island

56	An iceberg of density 0.9 g/cm^3 and weighing 6.4 ton is freely floating in the water with density 1 g/cm^3 . Approximately how much of the mass of iceberg will be above the water surface?
----	--

Alt1	6400 kg
Alt2	640 kg
Alt3	64 kg
Alt4	6.4 kg

57	If the earthquake A has a Richter magnitude of 7.0 as compared with earthquake B's 6.0, then which of the following statements is true?
Alt1	A has a 10 times larger shaking amplitude than B
Alt2	A has a 1000 times larger shaking amplitude than B
Alt3	B is 0.01 times as intense than A
Alt4	A has a deeper focus

58	Two important processes in the accumulation of free oxygen in the early atmosphere were:
Alt1	Photosynthesis and degassing
Alt2	Photochemical dissolution and phototropism
Alt3	Photochemical dissociation and photosynthesis
Alt4	Phototropism and photographic dissolution

59	Water lowers the melting point of rocks because:
Alt1	It generates heat from radioactive isotopes
Alt2	Its polar nature breaks bonds in mineral crystals
Alt3	It increases low-pressure effects
Alt4	It heats the rocks to melting

60	Seasons on Earth occur because of:
Alt1	Disproportionate distribution of land mass in northern and southern hemispheres
Alt2	Tilt of the Earth's axis of rotation
Alt3	Changes in the specific heat of water and land mass and the wind circulation that is a consequence of the changes in the temperature
Alt4	Changes in the circulation of Green house gases

61	Which of the following best describes the origin of ocean tides on Earth?
Alt1	Tides are caused on the side of the Earth nearest to the Moon because the Moon's gravity attracts water and so water (than the land) is pulled up as it is less dense than rock.
Alt2	Tides are caused by the 23.5° tilt of the rotation axis to the ecliptic plane
Alt3	Tides are caused by the difference in the force of gravity exerted by the Moon across the sphere of the Earth.
Alt4	Tides are caused primarily by the gravitational force of the Sun

62	Volcanic Island Arcs are associated with:
Alt1	Transform plate boundaries
Alt2	Divergent plate boundaries
Alt3	Ocean-continent convergent plate boundaries
Alt4	Ocean-ocean convergent plate boundaries

63	North Atlantic waters are warmer than South Atlantic because:
Alt1	Northern hemisphere gets more of Sun's energy than southern hemisphere
Alt2	Part of warm water Brazil Current gets deflected towards the northern hemisphere

Alt3	Of western intensification of North Atlantic sub-tropical gyre
Alt4	Most industrial nations are located around North Atlantic

64	The oldest continental crust found on Earth is about 3.8 Ga old, whereas the oldest oceanic crust found in the present day oceans is only 200 Ma old. Why is this so?
Alt1	Oceanic crust did not form prior to 200 Ma
Alt2	Older oceanic crust amalgamated with continental crust
Alt3	Older oceanic crust has subducted back into mantle
Alt4	A giant meteor impact in the ocean destroyed all the older crust

65	Carbonatites are rocks made up of more than 50% by volume of carbonate minerals. They are believed to have formed by
Alt1	Anatexis of marble
Alt2	Hydrothermal activity
Alt3	Metamorphism of limestone
Alt4	Melting of carbonate bearing mantle rocks

66	Which one the following combination of rocks is the best source and reservoir rocks for petroleum?
Alt1	Marl-Sandstone
Alt2	Shale-Carbonate
Alt3	Shale-Fractured basalt
Alt4	Shale-Sandstone

67	Although Zr and Mn have similar ionic radii, they do not replace each other in minerals. Why?
Alt1	Zr is divalent while Mn is trivalent
Alt2	Zr is tetravalent while Mn is divalent
Alt3	Zr is a non-metal whereas Mn is a metal
Alt4	Zr and Mn are not equally abundant in nature

68	Why does in a gneissic complex anatexis begin first in those layers with the higher albite content compared to those with higher anorthite content?
Alt1	Albite contains less water compared to anorthite
Alt2	Anorthite has higher silica content than albite
Alt3	Anorthite has a lower melting point than albite
Alt4	Albite has a lower melting point than anorthite

69	Match the geologic/topographic features of column A with the tectonic regimes given in column B.
----	--

	COLUMN A	COLUMN B
	a) The Himalaya	a) Accretionary Prism
	b) Barren Island	b) Hot Spot Track
	c) Hawaiian Islands	c) Strike-slip Fault
	d) Andaman and Nicobar Islands	d) Island Arc
	e) The San Andreas Fault	e) Collision zone
Alt1	a – a, b – b, c – c, d – d, e – e	
Alt2	a – e, b – d, c – b, d – a, e – c	
Alt3	a – c, b – a, c – d, d – e, e – b	
Alt4	a – a, b – d, c – b, d – c, e – e	

70	P-waves travel through solid, liquid and gas media, whereas S-waves do not travel through liquid and gas because of these media have
Alt1	Infinite compressibility
Alt2	Zero shear modulus
Alt3	Zero compressibility
Alt4	Very high shear modulus

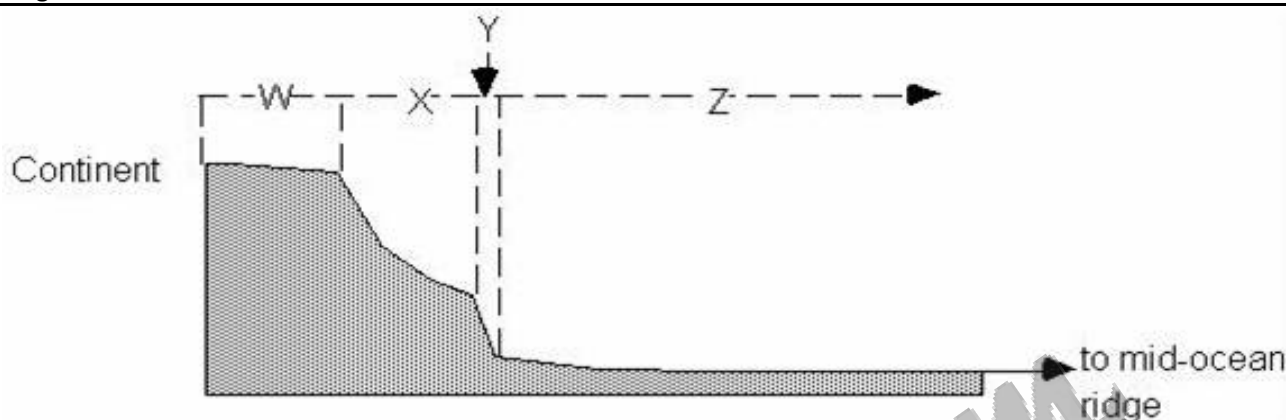
71	A basaltic melt completely crystallizes to become solid rock at about 800 ^o C. Just immediately after its crystallization, the polarity of the Earth's magnetic field changed. In what way would that affect the magnetization of the minerals like magnetite and hematite?
Alt1	They will record the old polarity
Alt2	They will record the new polarity
Alt3	They will have a mixed signature
Alt4	They will not get magnetized

72	Magnetic measurements have been made on a basalt flow at present at 47 ^o N, 20 ^o E. The angle of inclination of the remanent magnetization of this basalt is 30 ^o . What can we infer about the site with respect to its magnetic paleo-latitude? (Hint: Tangent of magnetic inclination is equal to twice of the Tangent of magnetic latitude)
Alt1	The site has not moved since the formation of the basalt.
Alt2	The site has moved 31 ^o southward to its present position
Alt3	The site has moved 31 ^o northward to its present position
Alt4	The above information is not sufficient

73	You are hiking east across a sequence of rock layers that are tilted 45 ^o to the east. At some point you cross a small linear depression and notice that there is a repetition of the layers that you just walked over. This repetition of rock layers provides evidence that you have crossed a:
Alt1	Strike-slip fault.
Alt2	Normal fault

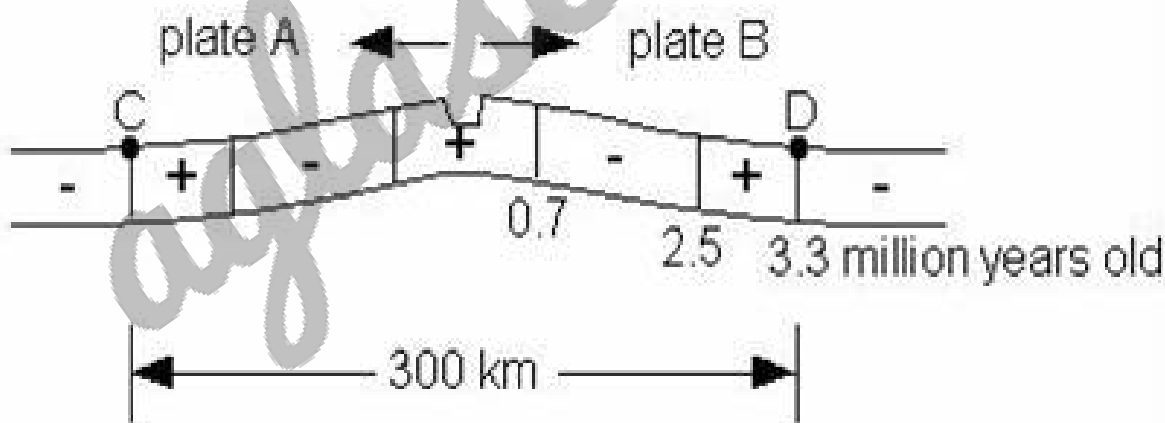
Alt3	Reverse fault
Alt4	Transform fault

74	The following figure is a schematic topographic profile of the Indian Ocean from South Africa to the mid-ocean ridge. The area labeled "Y" is called the:
----	---



Alt1	Ocean trough
Alt2	Ocean trench
Alt3	Continental slope
Alt4	Continental rise

75	The cross-section below depicts magnetized oceanic crust at a spreading center. The "+" symbol indicates normal magnetic bands; the "-" symbol indicates reversed magnetic bands. How fast are points C and D spreading apart from each other?
----	--



Alt1	2.27 centimeters/year
Alt2	4.54 centimeters/year
Alt3	9.09 centimeters/year
Alt4	18.18 centimeters/year

76	The following figure is a schematic illustration of three subduction zones A, B and C. Which of these subduction zones will have the widest arc-trench gap?
----	---

Alt1	Subduction Zone A
Alt2	Subduction Zone B
Alt3	Subduction Zone C
Alt4	Arc-Trench gap is independent of subduction angle.

77	<p>After examination of the geological cross-section below, give the chronological order, from oldest to youngest, of the events indicated by letters A through F. The events are: Sedimentary Rock Unit A; Sedimentary Rock Unit B; Granite Intrusion C; Dike D; Sedimentary Rock Unit E; Fault F; Sedimentary Rock Unit G. The inset depicts an enlarged portion of rock unit B showing graded beds.</p> <p>Oldest → Youngest</p>
Alt1	B, A, G, E, D, F, G
Alt2	A, B, C, D, E, G, F
Alt3	A, B, G, C, E, D, F
Alt4	B, A, G, E, D, C, F

78	Flat-topped types of seamounts are called as
Alt1	Submarine volcanoes
Alt2	Guyots
Alt3	Groynes

Alt4	Terraces
------	----------

79	The specific gravity of a powdered mineral can be determined with the help of
Alt1	Chemical balance
Alt2	Pycnometer
Alt3	Jolly's spring balance
Alt4	Walker's Steel Yard

80	Find the odd man out
Alt1	Lamination
Alt2	Slaty cleavage
Alt3	Schistosity
Alt4	Foliation

81	Stromatolites are
Alt1	Green algae
Alt2	Blue algae
Alt3	Organo-sedimentary structures
Alt4	Sedimentary structure

82	The most distributed sedimentary rock seen in the crust is
Alt1	Shale
Alt2	Sandstone
Alt3	Limestone
Alt4	Conglomerate

83	The average gravitational force of the earth is
Alt1	98 cm/s^2
Alt2	980 cm/s^2
Alt3	9800 cm/s^2
Alt4	980 cm/s

84	The total magnetic field strength is weakest at
Alt1	0° latitude
Alt2	90° latitude
Alt3	$30^\circ \text{ N} - 30^\circ \text{ S}$ latitude
Alt4	$60^\circ \text{ N} - 60^\circ \text{ S}$ latitude

85	Which of the following listed instruments is NOT used in geochemical prospecting
Alt1	Atomic Absorption Spectrophotometer
Alt2	Emission Spectrograph
Alt3	Flame photometer
Alt4	Optical microscope

86	The Geological Mapping undertaken by GSI is on the scale of
Alt1	1:50,000
Alt2	1:40,000

Alt3	1:65,000
Alt4	1:25,000

87	Minerals in which a country has total inadequacy and depend upon foreign sources for its needs are described as
Alt1	Strategic minerals
Alt2	Critical minerals
Alt3	Essential minerals
Alt4	Expendable minerals

88	The type of dam preferred where the river section is wide and the foundation is unsound is
Alt1	Gravity dam
Alt2	Embankment dam
Alt3	Arch dam
Alt4	Multiple arch dam

89	Exfoliation is a form of
Alt1	Physical weathering
Alt2	Chemical weathering
Alt3	Biochemical weathering
Alt4	Mass wasting

90	The most suitable environment for the preservation of fossils is described as
Alt1	Terrestrial
Alt2	Lacustrine
Alt3	Fluvial
Alt4	Marine

91	Andalusite and sillimanite crystallise in:
Alt1	Monoclinic system
Alt2	Triclinic system
Alt3	Orthorhombic system
Alt4	Hexagonal system

92	What are the most significant indicator of ancient climate:
Alt1	Radioactivity of the deposits.
Alt2	Type of cementing material.
Alt3	Order of superposition of beds.
Alt4	Type and distribution of fossils.

93	Metamorphism is described as a:
Alt1	Solid - State reconstitution
Alt2	Solid -liquid state reconstitution
Alt3	Solid -liquid - gas - state reconstitution.
Alt4	Liquid - state reconstitution

94	Mineralogical rearrangement of high temperature assemblage to a low temperature one takes place then the metamorphism is known as
Alt1	Puro metamorphism
Alt2	Contact metamorphism
Alt3	Retrograde metamorphism
Alt4	Plutonic metamorphism

95	In geological studies, a dome shaped intrusion is called a
Alt1	volcanic neck
Alt2	laccolith
Alt3	nueeardente
Alt4	caldera

96	Cirrus clouds are:
Alt1	rain clouds
Alt2	thick and fleecy
Alt3	made of ice crystals
Alt4	low cloud layers

97	In studies of the surface of the earth, a reverse fault having a dip between 10 and 45 degrees is known as a:
Alt1	thrust fault
Alt2	normal fault
Alt3	strike-slip fault
Alt4	neither of these

98	The B-horizon of a pedalfer soil is noted for its accumulation of
Alt1	carbonate
Alt2	nitrogen
Alt3	humus
Alt4	oxides

99	Which of the following is the most important chemically-active fluid involved in the formation of rocks?
Alt1	hydrochloric acid
Alt2	sulfuric acid
Alt3	water
Alt4	methane

100	On the Phanerozoic time scale, which of the following geologic periods occurred approximately 65 to 136 million years ago?
Alt1	Cambrian
Alt2	Ordovician
Alt3	Carboniferous
Alt4	Cretaceous

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Dimension of a boudin measured in transverse section and parallel to the layering is referred as:

- ☐ Thickness
- ☐ Separation
- ☐ Width
- ☐ Length

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108 PU-2016-306_E

A tonalite formed 2600 Ma ago is made up of quartz, plagioclase and biotite. $^{87}\text{Sr}/^{86}\text{Sr}$ ratios measured in these minerals will be:-

- ☐ equal in all the minerals
- ☐ biotite will have the highest and plagioclase lowest ratios
- ☐ plagioclase will have the highest and biotite lowest ratios
- ☐ plagioclase will have the highest and quartz lowest ratios

3 of 100

182 PU-2016-306_E

Which of the following is an example of continent-rifting:-

- ☐ Basin and Range Province of USA
- ☐ Isua province of Greenland
- ☐ Emperor-Hawaiin chain of islands
- ☐ Eastern Ghats of India

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194 PU-2016-306_E

Orthorhombic pyroxenes are similar to monoclinic pyroxenes in cell parameters except in the length of:-

- ☐ a axis which is higher in orthorhombic than in monoclinic
- ☐ a axis which is less in orthorhombic than in monoclinic
- ☐ c axis which is higher in orthorhombic than in monoclinic
- ☐ b axis which is higher in orthorhombic than in monoclinic

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154 PU-2016-306_E

Shadow zone for seismic S wave is:-

- ☐ $90^\circ - 180^\circ$
- ☐ $103^\circ - 180^\circ$
- ☐ $90^\circ - 120^\circ$

- ☐ 103° - 143°

6 of 100

173 PU-2016-306_E

Which of the following seismic waves has highest velocity:-

- ☐ S-wave
- ☐ P-wave
- ☐ Rayleigh waves
- ☐ love waves

7 of 100

125 PU-2016-306_E

Ganitic igneous rocks are generally characterized with following texture:-

- ☐ Allotriomorphic
- ☐ Hypidimorphic
- ☐ Ophitic
- ☐ Panidimorphic

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208 PU-2016-306_E

A basaltic andesite magma undergoes differentiation and gives rise to dacite magma. The dacite has strong negative Eu anomaly, whereas, basalt has no Eu anomaly. What is the cause of ve Eu anomaly in the dacite?

- ☐ Fractional crystallization of plagioclase
- ☐ Addition of plagioclase into dacite magma
- ☐ Fractional crystallization of pyroxene
- ☐ Fractional crystallization of olivine

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121 PU-2016-306_E

Majority of worlds petroleum resources are restricted to the following geological time period:-

- ☐ Neoproterozoic
- ☐ Mesozoic
- ☐ Permo-carboniferous
- ☐ Cambro-Ordovician

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130 PU-2016-306_E

Two adjacent vertical aerial photographs taken on a run, with 60% overlap is example of _____.

- ☐ sidelaping photos
- ☐ panoramic photos

- ☐ endlapping photos
- ☐ stereopairs

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215 PU-2016-306_E

The minerals glaucophane and jadeite are indicative of:-

- ☐ high-P and high-T
- ☐ low-P and high-T
- ☐ high-P and low-T
- ☐ low-P and low-T

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Chennai fall in seismic zone _____.

- ☐ IV
- ☐ II
- ☐ III
- ☐ V

13 of 100

174 PU-2016-306_E

According to Richter scale of magnitude, an increase of 2 in magnitude of earthquake causes the increase in release of energy by:-

- ☐ 100 times
- ☐ 10,000 times
- ☐ 1000 times
- ☐ 10 times

14 of 100

109 PU-2016-306_E

Half-life of ^{14}C decay is 5560 years. ^{14}C abundance in suitable geological samples can be used to date:-

- ☐ Events older than 5.56 million years
- ☐ Archean events
- ☐ Events older than 55.6 million years
- ☐ Events younger than 40,000 years

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101 PU-2016-306_E

Among the pyroxenes which one shows the highest order of interference color when observed under petrological microscope?

- ☐ hypersthene

- ☐ enstatite
- ☐ diopside
- ☐ augite

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117 PU-2016-306_E

Which of the following meteorite would more clearly show abundances of elements varying according to the condensation temperature?

- ☐ martian meteorites
- ☐ pallasites
- ☐ chondrites
- ☐ lunar meteorites

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133 PU-2016-306_E

The First type of remote sensing were:-

- ☐ sketches from a French Map Maker
- ☐ aerial photos
- ☐ paintings from an air balloon
- ☐ TV remote controls

18 of 100

169 PU-2016-306_E

In groundwater flow modeling triangular shaped discretization of cells is called as:-

- ☐ Finite difference method
- ☐ Finite element method
- ☐ Mesh centered method
- ☐ Node centered method

19 of 100

116 PU-2016-306_E

Which of the following statements is true regarding the cosmic abundance of the elements?

- ☐ Abundances of the first 50 elements increases exponentially
- ☐ Even atomic number elements are less abundant
- ☐ Hydrogen and helium are the most abundant elements
- ☐ Li, Be and B abundance is anomalously high

20 of 100

165 PU-2016-306_E

The flow with large viscous forces and with small velocities and momentum where no eddies are developed is termed as:-

- ☐ Stream flow
- ☐ Viscous flow
- ☐ Laminar flow
- ☐ Turbulent flow

21 of 100

146 PU-2016-306_E

Visibility of joint surface features increases with:

- ☐ Decreasing abundance of phyllosilicate
- ☐ Increasing grain size
- ☐ Increasing abundance of phyllosilicate
- ☐ Decreasing grain size

22 of 100

209 PU-2016-306_E

An olivine basalt undergoes fractional crystallization of olivine which results in tholeiite basalt. What are the elements that will be depleted in the tholeiite basalt relative to its parent?

- ☐ Ce and Fe
- ☐ Ni and Mg
- ☐ Cr and Zr
- ☐ Cr and Ce

23 of 100

190 PU-2016-306_E

Which one of the following mineral is uniaxial negative in optical properties?

- ☐ Zircon
- ☐ Quartz
- ☐ Nepheline
- ☐ Rutile

24 of 100

158 PU-2016-306_E

The presence of 85 East ridge in the bay of Bengal region is first identified based on the study of:-

- ☐ bathymetry
- ☐ magnetic
- ☐ gravity
- ☐ seismic

25 of 100

198 PU-2016-306_E

Identify the sequence of rocks arranged in the increasing order of density.

- ☐ gabbro, andesite, diorite
- ☐ basalt, andesite, diorite
- ☐ andesite, gabbro, basalt
- ☐ Andesite, basalt, gabbro

26 of 100

202 PU-2016-306_E

Kimberlite magmas are generated below:-

- ☐ Continental rift
- ☐ Mid-ocean ridge
- ☐ Continental lithosphere
- ☐ Island arc

27 of 100

162 PU-2016-306_E

The water that has been out of contact with the atmosphere is known as:-

- ☐ Juvenile water
- ☐ Metamorphic water
- ☐ Connate water
- ☐ Magmatic water

28 of 100

104 PU-2016-306_E

The upper continental crust higher rate of heat production than the lower crust. Why?

- ☐ Heat conductivity is higher in upper crust than lower crust
- ☐ The upper crust has higher concentrations of K, Rb, U and Th
- ☐ The upper crust receives heat from the Sun
- ☐ Heat conductivity is lower in upper crust than lower crust

29 of 100

178 PU-2016-306_E

Hawaiiin-Emperor chain of oceanic islands is a result of:-

- ☐ movement of Pacific oceanic plate over a hot-spot
- ☐ movement of Atlantic oceanic plate over a hot-spot
- ☐ subduction of pacific plate
- ☐ subduction of Atlantic oceanic plate

30 of 100

177 PU-2016-306_E

The rock-deformation is said to be Newtonian (viscous) when:-

- ☐ strain is not proportional to stress
- ☐ strain is independent of stress
- ☐ strain is linearly proportional to stress
- ☐ rate of strain is linearly proportional to stress

31 of 100

142 PU-2016-306_E

A hangingwall cut-off will be:

- ☐ footwall ramp over hangingwall ramp
- ☐ footwall ramp over hanging wall flat
- ☐ footwall flat over hangingwall ramp
- ☐ footwall flat over hangingwall flat

32 of 100

150 PU-2016-306_E

An increase in magnitude by two unit corresponds to _____ fold increase in amplitude of the seismic waves.

- ☐ 10
- ☐ 100
- ☐ 200
- ☐ 20

33 of 100

112 PU-2016-306_E

Sediments on the present ocean floor are not older than Jurassic because:-

- ☐ sediments were not deposited on ocean floor prior to Jurassic
- ☐ sediment production rate was inefficient prior to Jurassic
- ☐ dating of the older sediments is not possible
- ☐ oldest sea floor is of Jurassic age

34 of 100

138 PU-2016-306_E

How many GPS satellites currently orbit the earth?

- ☐ 12
- ☐ 224
- ☐ 32
- ☐ 24

35 of 100

134 PU-2016-306_E

Radar is very beneficial because it can penetrate thick:-

- ☐ sand and very dry objects
- ☐ clouds and moisture
- ☐ walls and concrete
- ☐ steel and wood

36 of 100

200 PU-2016-306_E

When enstatite is heated to its melting point it gives rise to:-

- ☐ melt of its composition
- ☐ melt of different composition and forsterite
- ☐ melt of different composition and quartz
- ☐ melt of different composition and periclase

37 of 100

100 PU-2016-306_E

Number of identi-points that belong to all face-centered orthorhombic unit cell is:-

- ☐ 2
- ☐ 3
- ☐ 6
- ☐ 4

38 of 100

157 PU-2016-306_E

Hydrothermal vents formed due to:-

- ☐ wind driven circulation
- ☐ ocean upwelling
- ☐ thermo haline circulation
- ☐ hydrothermal circulation

39 of 100

166 PU-2016-306_E

Hardness of water is due to the presence of which pair of ions.

- ☐ Cl and SO_4
- ☐ Ca and Mg
- ☐ Na and K
- ☐ NO_3 and PO_4

40 of 100

205 PU-2016-306_E

During partial melting of mantle which one of the following elements behave as incompatible element?

- ☐ Cr
- ☐ Ni
- ☐ Zr
- ☐ Co

41 of 100

213 PU-2016-306_E

Which of the following rocks is completely unfoliated?

- ☐ Schist
- ☐ Mylonite
- ☐ Slate
- ☐ granofels

42 of 100

189 PU-2016-306_E

Which one of the following mineral is optically biaxial?

- ☐ Dolomite
- ☐ Calcite
- ☐ Aragonite
- ☐ Siderite

43 of 100

170 PU-2016-306_E

The mean radius of the Earth is 6371 km. On taking a gravimeter 1 km up in a balloon you would expect the value of g to decrease by:-

- ☐ 1%
- ☐ 0.03%
- ☐ 3%
- ☐ 0.007%

44 of 100

105 PU-2016-306_E

Incongruent melting behavior is shown by:-

- ☐ albite
- ☐ enstatite
- ☐ nepheline
- ☐ olivine

45 of 100

181 PU-2016-306_E

Aulacogen type of sedimentary basins form due to:-

- ☐ Strike slip faulting along the margin of continent
- ☐ Subsidence due to normal faulting
- ☐ Thrusting in a collision related mountain building process
- ☐ Failing of one of the rifts of triple-rift junction

46 of 100

129 PU-2016-306_E

Bouma type beds are commonly associated with:-

- ☐ Shallow sea deposit
- ☐ Deep sea deposits
- ☐ Lacustrine deposits
- ☐ Fluvial deposits

47 of 100

193 PU-2016-306_E

An example of a Pyroxene in which more than two thirds of the M2 sites are occupied by Ca cations:-

- ☐ Jadeite
- ☐ Enstatite
- ☐ Diopside
- ☐ Aegirine

48 of 100

161 PU-2016-306_E

The volume of voids in a formation when interconnected and transmits flow is defined as:-

- ☐ Hydraulic conductivity
- ☐ Effective porosity
- ☐ Permeability
- ☐ Total porosity

49 of 100

218 PU-2016-306_E

What causes ice ages?

- ☐ no definite cause has been conclusively proven
- ☐ variations in sunlight reflected by the earth
- ☐ variations in sun's heat output
- ☐ variations in the earth's orbit

50 of 100

185 PU-2016-306_E

The number of space lattices and point groups present in all types of crystals are _____ and _____ respectively.

- ☐ 14 & 32
- ☐ 30 & 232
- ☐ 32 & 230
- ☐ 16 & 30

51 of 100

204 PU-2016-306_E

If melting point of a mineral is to be calculated using thermodynamic data then which one of the following is the correct equation ? (H= enthalpy, S= entropy, V= molar volume, G= Gibb's free energy)

- ☐ $T = \Delta H / \Delta V$
- ☐ $T = \Delta S / \Delta V$
- ☐ $T = \Delta G / \Delta S$
- ☐ $T = \Delta H / \Delta S$

52 of 100

113 PU-2016-306_E

The concentration of 10 ml solution taken out of 1 liter of 100ppm solution is:-

- ☐ 0.1 ppm
- ☐ 1000 ppm
- ☐ 100 ppm
- ☐ 10 ppm

53 of 100

141 PU-2016-306_E

Creep in a rock indicates the relation between:

- ☐ Strain and time
- ☐ Stress rate and time
- ☐ Strain rate and time
- ☐ Stress and time

54 of 100

145 PU-2016-306_E

If axial plane thickness ratio (T_{45°) of a fold is 2, then the corresponding orthogonal thickness ratio (t_{45°) will be:

- ☐ 1.6
- ☐ 1.4
- ☐ 1

☐ 1.2

55 of 100

120 PU-2016-306_E

Diamond deposits are associated with:-

- ☐ Granitic intrusions
- ☐ Conglomerate
- ☐ Ultramafic lava flows
- ☐ Kimberlite pipes

56 of 100

137 PU-2016-306_E

GIS Maps can:-

- ☐ Help us visualize information
- ☐ Help us compare information
- ☐ Tell us where something is
- ☐ All of the above

57 of 100

212 PU-2016-306_E

Both temperature and deviatoric stress are important agents in case of _____ metamorphism.

- ☐ Dynamic
- ☐ Dynamo-thermal
- ☐ Thermal
- ☐ Burial

58 of 100

186 PU-2016-306_E

A mineral gives X-ray diffraction peak at $2\theta=60^\circ$. Assuming that the X-ray wavelength is 1.5 \AA calculate the d-spacing.

- ☐ 3.0 \AA
- ☐ 0.5 \AA
- ☐ 0.75 \AA
- ☐ 1.5 \AA

59 of 100

197 PU-2016-306_E

What are the major minerals present in peridotite?

- ☐ pyroxene, biotite and quartz
- ☐ pyroxene, plagioclase and garnet

- ☐ amphibole, biotite and plagioclase
- ☐ olivine, pyroxene and spinel

60 of 100

126 PU-2016-306_E

Blue schist facies metamorphic rocks are product of:-

- ☐ High P high T regional metamorphism
- ☐ High P low T regional metamorphism
- ☐ Low P high T regional metamorphism
- ☐ Contact metamorphism

61 of 100

245 PU-2016-306_M

One of the following is a magmatic sulphide deposit.

- ☐ Climax-type molybdenum
- ☐ Cyprus-type copper-zinc
- ☐ Sudbury copper-nickel
- ☐ Kuroko-type lead-zinc

62 of 100

241 PU-2016-306_M

The 3 domains involved in all the ore forming processes are:-

- ☐ Partial melting-transportation-deposition
- ☐ Melting-migration-crystallisation
- ☐ Dissolution-transportation-precipitation
- ☐ Source-migration path-ore trap

63 of 100

229 PU-2016-306_M

Which is most likely to represent a deposit formed on dry land?

- ☐ Dolomite
- ☐ Black shale
- ☐ Mudrocks
- ☐ Red sandstone

64 of 100

257 PU-2016-306_M

One of the following metals does not form any mineral in which it is a constituent element.

- ☐ Niobium
- ☐ Rhenium

- ☐ Platinum
- ☐ Cerium

65 of 100

221 PU-2016-306_M

Lithification is the *primary* process in the formation of one of the following rocks.

- ☐ conglomerate
- ☐ gneiss
- ☐ schist
- ☐ marble

66 of 100

244 PU-2016-306_M

One of the following is not a silicate ore mineral.

- ☐ lepidolite
- ☐ braunite
- ☐ beryl
- ☐ leucoxene

67 of 100

232 PU-2016-306_M

Which of the following is a local base level?

- ☐ lake
- ☐ point bar
- ☐ ocean
- ☐ floodplain

68 of 100

236 PU-2016-306_M

Bays and headlands are generally found in shoreline of:-

- ☐ emergence
- ☐ submergence
- ☐ neutral
- ☐ faulted

69 of 100

249 PU-2016-306_M

The ore metal of one of the following deposits is derived from rocks of continental crust, transported by meteoric water and deposited in organic carbon-rich zones of fluvial sediments.

- ☐ Unconformity-type uranium

- ☐ Redbed-type copper
- ☐ Sandstone-type uranium
- ☐ Quartz-pebble-conglomerate type uranium

70 of 100

237 PU-2016-306_M

Which type of coiling is rare in gastropoda?

- ☐ trochospiral
- ☐ dextral
- ☐ armestral
- ☐ sinistral

71 of 100

253 PU-2016-306_M

Uranium deposit types are correctly arranged in decreasing order of age (that is old to young) in one of the following.

- ☐ Unconformity - QPC - Sandstone
- ☐ Sandstone - Unconformity - QPC
- ☐ QPC - Unconformity - Sandstone
- ☐ Unconformity - Sandstone - QPC

72 of 100

248 PU-2016-306_M

The ore metals of one of the following deposits are derived from MOR basalt, transported by and deposited from sea water- hydrothermal fluid, and forms massive sulphide deposits.

- ☐ Epithermal silver-lead
- ☐ Cyprus-type copper-zinc
- ☐ Sudbury-type nickel-copper
- ☐ Kuroko-type lead-zinc

73 of 100

240 PU-2016-306_M

Flat topped sea mounts are termed as:-

- ☐ monodnock
- ☐ inselberg
- ☐ guyots
- ☐ mesa

74 of 100

256 PU-2016-306_M

Metals in one of the following options are recovered from their ores by acid leaching.

- ☐ silver and uranium
- ☐ silver and molybdenum
- ☐ gold and zinc
- ☐ gold and molybdenum

75 of 100

224 PU-2016-306_M

Most limestones have a large component of calcite that was originally extracted from seawater by:-

- ☐ lithification
- ☐ chemical weathering
- ☐ inorganic chemical reactions
- ☐ evaporation

76 of 100

252 PU-2016-306_M

Boiling of fluid, mixing of fluids and fluid-rock interaction are the important processes responsible for:-

- ☐ deposition of ore from a hydrothermal fluid
- ☐ dispersion of metal in a rock
- ☐ leaching of metal from source rock
- ☐ transport of metal by a fluid phase

77 of 100

228 PU-2016-306_M

In a cliff, you see coal near the base, then sandstone above it, then limestone, then sandstone again, and finally coal near the top. This pattern most likely means:-

- ☐ The sea retreated and then advanced again
- ☐ The sea advanced and then retreated again
- ☐ Rainfall decreased and then increased again
- ☐ The climate changed from warm to cold and back

78 of 100

225 PU-2016-306_M

The superposition of offshore facies over nearshore facies occurs when there is a marine:-

- ☐ invasion
- ☐ regression
- ☐ transgression
- ☐ superposition

79 of 100

233 PU-2016-306_M

A stream can lengthen its channel by:-

- ☐ headward erosion
- ☐ hydraulic action
- ☐ downcutting
- ☐ runoff

80 of 100

220 PU-2016-306_M

Water from a certain source is shown to contain 10,000 ppm dissolved solids. This indicates that _____ percentage of the *particles* in this water are represented by the dissolved solids.

- ☐ 0.1%
- ☐ 10%
- ☐ 1%
- ☐ 0.001%

81 of 100

276 PU-2016-306_D

Which of the following magmas contain high water content?

- ☐ granite and granodiorite
- ☐ andesite and komatiite
- ☐ basalt and andesite
- ☐ basalt and anorthosite

82 of 100

289 PU-2016-306_D

Ni-Cu sulphide deposits are associated with mafic-ultramafic magma because of the following process:-

- ☐ Magmatic hydrothermal process
- ☐ Partial melting and filter pressing
- ☐ Segregation of early formed crystals
- ☐ Sulfide liquid immiscibility

83 of 100

264 PU-2016-306_D

In mineral processing plants, run-off mine is reduced in size by crushing and grinding for:-

- ☐ separation of gangue minerals
- ☐ classification of run-off mine according to size
- ☐ optimal liberation of ore minerals from gangue minerals
- ☐ concentration of ore minerals

84 of 100

292 PU-2016-306_D

Deep focus earthquakes are associated with one of the following sedimentary basins:-

- ☐ passive margin
- ☐ rift basin
- ☐ intracratonic basin
- ☐ foreland basin

85 of 100

288 PU-2016-306_D

Volcanogenic massive sulfide deposits are associated with following tectonic setting:-

- ☐ Spreading centres
- ☐ Collisional plate margin
- ☐ Conservative plate margin
- ☐ Plate interior

86 of 100

272 PU-2016-306_D

What is the thickness of a crystal plate of an uniaxial mineral cut parallel to its optic axis with $\epsilon = 1.685$ and $\omega = 1.670$ and path difference = 1500 nm.

- ☐ 0.10 mm
- ☐ 0.075 mm
- ☐ 0.03 mm
- ☐ 0.15 mm

87 of 100

265 PU-2016-306_D

Jigging is a process in which minerals are separated according to their:-

- ☐ magnetic susceptibility
- ☐ density
- ☐ size
- ☐ water-adhering or air-adhering character

88 of 100

284 PU-2016-306_D

One of the following is NOT a magmatic deposit.

- ☐ Sudbury nickel
- ☐ Podiform chromite
- ☐ Unconformity type uranium
- ☐ Titaniferous magnetite deposit in gabbro

89 of 100

277 PU-2016-306_D

Consider Ab-An-Di system at 1 atmospheric pressure in which melt is in equilibrium with diopside and plagioclase crystals. By fixing temperature what parameters can be varied?

- ☐ Composition of the melt and plagioclase
- ☐ Composition of melt only
- ☐ Composition of plagioclase only
- ☐ None of the parameters can be varied

90 of 100

281 PU-2016-306_D

One of the following is NOT a kimberlite field.

- ☐ Lattavaram
- ☐ Lambapur
- ☐ Panna
- ☐ Wajrakarur

91 of 100

299 PU-2016-306_D

Geothermal gradient is lowest in following tectonic setting:-

- ☐ Continental shields
- ☐ Transform faults
- ☐ Subduction zones
- ☐ Mid oceanic ridge

92 of 100

293 PU-2016-306_D

In a longitudinal geological cross sections of fluvial deposits, sands are encompassed by muds and the sandbodies have sheet like geometry. The probable depositional environment would be:-

- ☐ alluvial fan deposit
- ☐ braided river deposit
- ☐ meandering river deposit
- ☐ anastomosed river deposit

93 of 100

260 PU-2016-306_D

The asbestos mined from Pulivendla area of Cuddapah basin is a:-

- ☐ chiasolite
- ☐ cristobalite
- ☐ chrysolite

- ☐ chrysotile

94 of 100

273 PU-2016-306_D

K⁺ ions occupy which site in K-rich amphibole?

- ☐ A site
- ☐ M2 site
- ☐ M1 site
- ☐ M3 site

95 of 100

296 PU-2016-306_D

The average thickness of the continental crust is about:-

- ☐ 35-40 km
- ☐ 100-200 km
- ☐ 1000-2000 km
- ☐ 5-10 km

96 of 100

261 PU-2016-306_D

"Green marble" mined from Rishabdev area of Aravalli fold belt is:-

- ☐ serpentinitised peridotite
- ☐ actinolite-bearing dolomitic marble
- ☐ diopside-bearing dolomitic marble
- ☐ epidote-bearing dolomitic marble

97 of 100

269 PU-2016-306_D

Dolostone hosted uranium deposit occurs at:-

- ☐ Tummalapalle
- ☐ Gogi
- ☐ Jaduguda
- ☐ Domiasiat

98 of 100

280 PU-2016-306_D

Fractional crystallization of which one of the following minerals will result in depletion of Cr in mafic and ultramafic magmas?

- ☐ plagioclase
- ☐ pyroxene

- ☐ rutile
- ☐ ilmenite

99 of 100

285 PU-2016-306_D

What would be the pressure at the base of 35 km thick granitic crust of a constant density of 2.8 g/cm^3 ?

- ☐ 1 GPa
- ☐ 3.5 GPa
- ☐ 0.96 GPa
- ☐ 9.6 GPa

100 of 100

268 PU-2016-306_D

One of the following mineral deposits does not occur in skarn:-

- ☐ Cu-Pb-Zn
- ☐ Wollastonite
- ☐ Cr-Ni-Ti
- ☐ Fe-Sn-W

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1 of 100

147 PU_2015_306_New

Khondalites are characteristic rocks of:-

- ☐ Greenschist facies
- ☐ Amphibolite facies
- ☐ Granulite facies
- ☐ Eclogite facies

2 of 100

104 PU_2015_306_New

According to Richter scale of magnitude, an increase of 2 in magnitude of earthquake causes the increase in release of energy by:-

- ☐ 1000 times
- ☐ 10,000 times
- ☐ 10 times
- ☐ 100 times

3 of 100

106 PU_2015_306_New

Epicentral distance of 180° equals to approximately how many kilometers on the surface of the earth. (radius of the earth is 6371 km)

- ☐ 18000 km
- ☐ 40010 km
- ☐ 20005 km
- ☐ 180 km

4 of 100

117 PU_2015_306_New

The unit cell parameter for rutile is $a:c = 1:0.64$. If $d_{(100)} = 4.6 \text{ \AA}$ what is the unit cell volume (in cubic \AA)?

- ☐ 97.336
- ☐ 31.1
- ☐ 21.16
- ☐ 62.3

5 of 100

149 PU_2015_306_New

Glacial striations on an outcrop trend NE-SW. The direction of ice movement was:-

- ☐ NW to SE
- ☐ NE to SW
- ☐ SW to NE
- ☐ could be either NE or SW

6 of 100

110 PU_2015_306_New

Suture Zone present in an orogenic belt is characterized by:-

- ☐ Normal faults
- ☐ Horst and graben structures
- ☐ Oceanic crustal rocks and arc-trench sediments
- ☐ Molasse sediments

7 of 100

150 PU_2015_306_New

Water from a certain source is shown to contain 10,000 ppm dissolved solids. This indicates that _____ percentage of the *particles* in this water are represented by the dissolved solids.

- ☐ 0.001%
- ☐ 10%
- ☐ 1%
- ☐ 0.1%

8 of 100

141 PU_2015_306_New

The difference between Bingham magma and Newtonian magma is that:-

- ☐ Bingham magma requires to be provided a yield stress to initiate flow
- ☐ Bingham magma flows turbulently
- ☐ Stress is linearly proportional to strain in Bingham magma
- ☐ Bingham magma is less viscous

9 of 100

101 PU_2015_306_New

The isostatic gravity anomaly over a topographic high is positive. It means:-

- ☐ Isostatic overcompensation
- ☐ Isostatic undercompensation
- ☐ presence of deep root zone
- ☐ complete isostatic compensation

10 of 100

123 PU_2015_306_New

An example of a Pyroxene in which more than two thirds of the M2 sites are occupied by Ca cations:-

- ☐ Jadeite
- ☐ Diopside
- ☐ Aegirine
- ☐ Enstatite

11 of 100

151 PU_2015_306_New

Lithification is the *primary* process in the formation of one of the following rocks.

- ☐ schist
- ☐ marble
- ☐ conglomerate
- ☐ gneiss

12 of 100

126 PU_2015_306_New

Glaucophane is:-

- ☐ a calcic amphibole
- ☐ an alkali amphibole
- ☐ a magnesium amphibole
- ☐ a white mica

13 of 100

113 PU_2015_306_New

The interfacial angle between the faces of tetrahedron is:-

- ☐ 90°
- ☐ 109° 28' 16"
- ☐ 54° 44' 8"
- ☐ 45°

14 of 100

120 PU_2015_306_New

Which one of the following mineral is uniaxial negative in optical properties?

- ☐ Zircon
- ☐ Nepheline
- ☐ Rutile
- ☐ Quartz

15 of 100

144 PU_2015_306_New

Which one of the following minerals indicates low-P condition?

- ☐ Sillimanite
- ☐ Garnet
- ☐ Cordierite
- ☐ Kyanite

16 of 100

139 PU_2015_306_New

An olivine basalt undergoes fractional crystallization of olivine which results in tholeiite basalt. What are the elements that will be depleted in the tholeiite basalt relative to its parent?

- ☐ Ni and Mg
- ☐ Cr and Ce
- ☐ Cr and Zr
- ☐ Ce and Fe

17 of 100

142 PU_2015_306_New

Both temperature and deviatoric stress are important agents in case of _____ metamorphism.

- ☐ Burial
- ☐ Thermal
- ☐ Dynamic
- ☐ Dynamo-thermal

18 of 100

133 PU_2015_306_New

Which one of the following minerals is suitable for Rb-Sr method of dating?

- ☐ Biotite
- ☐ Pyrope
- ☐ Plagioclase
- ☐ Diopside

19 of 100

102 PU_2015_306_New

Which of the following statements is Not true?

- ☐ Each planet is roughly twice as far from the Sun as its closest neighbor
- ☐ Great planets away from Sun have low densities
- ☐ The Sun has almost 99.9 % of the angular momentum of the solar system while the planets account for more than 99% of the mass
- ☐ The planets revolve around the Sun in same directional sense

20 of 100

125 PU_2015_306_New

The group of clay minerals having 1:1 ratio of tetrahedral and octahedral components is:-

- ☐ Illite
- ☐ Smectite
- ☐ Kaolinite
- ☐ Vermiculite

21 of 100

105 PU_2015_306_New

Seismic stations around the world have recorded a 'push' as the first motion. It means:-

- ☐ a double-couple source
- ☐ an underground explosion
- ☐ strong P-wave arrival
- ☐ a single-couple source

22 of 100

115 PU_2015_306_New

The number of space lattices and point groups present in all types of crystals are _____ and _____ respectively.

- ☐ 30 & 232
- ☐ 32 & 230
- ☐ 14 & 32
- ☐ 16 & 30

23 of 100

111 PU_2015_306_New

Aulacogen type of sedimentary basins form due to:-

- ☐ Thrusting in a collision related mountain building process
- ☐ Subsidence due to normal faulting
- ☐ Strike slip faulting along the margin of continent
- ☐ Failing of one of the rifts of triple-rift junction

24 of 100

121 PU_2015_306_New

Refractive indices of olivine increase:-

- ☐ with increase in Fayalite content
- ☐ with increase in size
- ☐ with decrease in Fayalite content
- ☐ with increase in zoning

25 of 100

155 PU_2015_306_New

The superposition of offshore facies over nearshore facies occurs when there is a marine:-

- ☐ invasion
- ☐ superposition
- ☐ regression
- ☐ transgression

26 of 100

122 PU_2015_306_New

Out of the three polymorphs of aluminum silicates:-

- ☐ Sillimanite is the high temperature polymorph while andalusite is high pressure
- ☐ Kyanite is the high temperature polymorph while sillimanite is high pressure
- ☐ Andalusite is the high temperature polymorph while sillimanite is high pressure
- ☐ Sillimanite is the high temperature polymorph, while Kyanite is high pressure

27 of 100

127 PU_2015_306_New

What are the major minerals present in peridotite?

- ☐ amphibole, biotite and plagioclase
- ☐ olivine, pyroxene and spinel
- ☐ pyroxene, biotite and quartz
- ☐ pyroxene, plagioclase and garnet

28 of 100

154 PU_2015_306_New

Most limestones have a large component of calcite that was originally extracted from seawater by:-

- ☐ chemical weathering
- ☐ inorganic chemical reactions
- ☐ evaporation
- ☐ lithification

29 of 100

129 PU_2015_306_New

What is the temperature of crystallization of tholeiite basalt at 1 atm. P.?

- ☐ 700°C
- ☐ 900°C
- ☐ 1200°C
- ☐ 1700°C

30 of 100

114 PU_2015_306_New

Which one of the following forms does NOT belong to the isometric system?

- ☐ tetrahedron
- ☐ diploid
- ☐ octahedron
- ☐ pyramid

31 of 100

158 PU_2015_306_New

In a cliff, you see coal near the base, then sandstone above it, then limestone, then sandstone again, and finally coal near the top. This pattern most likely means:-

- ☐ The sea advanced and then retreated again
- ☐ The sea retreated and then advanced again
- ☐ The climate changed from warm to cold and back
- ☐ Rainfall decreased and then increased again

32 of 100

159 PU_2015_306_New

Which is most likely to represent a deposit formed on dry land?

- ☐ Mudrocks
- ☐ Black shale
- ☐ Dolomite
- ☐ Red sandstone

33 of 100

100 PU_2015_306_New

The mean radius of the Earth is 6371 km. On taking a gravimeter 1 km up in a balloon you would expect the value of g to decrease by:-

- ☐ 0.03%
- ☐ 0.007%
- ☐ 1%
- ☐ 3%

34 of 100

130 PU_2015_306_New

When enstatite is heated to its melting point it gives rise to:-

- ☐ melt of different composition and periclase
- ☐ melt of its composition
- ☐ melt of different composition and forsterite
- ☐ melt of different composition and quartz

35 of 100

116 PU_2015_306_New

A mineral gives X-ray diffraction peak at $2\theta = 60^\circ$. Assuming that the X-ray wavelength is 1.5 \AA calculate the d-spacing.

- ☐ 0.75 \AA
- ☐ 3.0 \AA
- ☐ 0.5 \AA
- ☐ 1.5 \AA

36 of 100

157 PU_2015_306_New

A mature sedimentary rock would exhibit which of these features?

- ☐ A wide variety of particle sizes
- ☐ Angular mineral fragments
- ☐ Stable mineral fragments
- ☐ Unstable mineral fragments

37 of 100

108 PU_2015_306_New

Hawaiin-Emperor chain of oceanic islands is a result of:-

- ☐ subduction of Atlantic oceanic plate
- ☐ movement of Atlantic oceanic plate over a hot-spot
- ☐ subduction of pacific plate
- ☐ movement of Pacific oceanic plate over a hot-spot

38 of 100

134 PU_2015_306_New

If melting point of a mineral is to be calculated using thermodynamic data then which one of the following is the correct equation? (H= enthalpy, S= entropy, V= molar volume, G= Gibb's free energy)

- ☐ $T = \Delta H / \Delta V$
- ☐ $T = \Delta G / \Delta S$
- ☐ $T = \Delta S / \Delta V$
- ☐ $T = \Delta H / \Delta S$

39 of 100

136 PU_2015_306_New

During partial melting of basalt under granulite facies name the minerals that will be left in the residue?

- ☐ Pyroxene and plagioclase
- ☐ Hornblende and plagioclase
- ☐ Hornblende and garnet
- ☐ Pyroxene and quartz

40 of 100

148 PU_2015_306_New

What causes ice ages?

- ☐ no definite cause has been conclusively proven
- ☐ variations in sun's heat output
- ☐ variations in the earth's orbit
- ☐ variations in sunlight reflected by the earth

41 of 100

118 PU_2015_306_New

What is the appropriate crystal section to determine the extinction angle of a monoclinic crystal?

- ☐ (110)
- ☐ (111)
- ☐ (010)
- ☐ (100)

42 of 100

140 PU_2015_306_New

Pyroclastic rocks are formed as a result of explosive volcanism. What are the factors responsible for explosive volcanism?

- ☐ Less viscous magma with high volatile content
- ☐ Less viscous magma low with volatile content
- ☐ Viscous magma and poor in volatile content
- ☐ Viscous magma with high % of volatile content

43 of 100

128 PU_2015_306_New

Identify the sequence of rocks arranged in the increasing order of density.

- ☐ basalt, andesite, diorite
- ☐ andesite, gabbro, basalt
- ☐ andesite, basalt, gabbro
- ☐ gabbro, andesite, diorite

44 of 100

146 PU_2015_306_New

The 'Buchan-type' metamorphism is characterized by the following metamorphic zones with increasing grade:-

- ☐ Chlorite zone-Biotite zone-Cordierite zone-Andalusite zone-Sillimanite zone
- ☐ Chlorite zone-Biotite zone-Garnet zone-Staurolite zone-Kyanite zone-Sillimanite zone
- ☐ Chlorite zone- Cordierite zone-Biotite zone- Andalusite zone-Sillimanite zone
- ☐ Chlorite zone-Biotite zone-Staurolite zone-Garnet zone -Kyanite zone-Sillimanite zone

45 of 100

156 PU_2015_306_New

Well-sorted sediments contain:-

- ☐ a wide size range of particles
- ☐ abundant clay minerals
- ☐ a limited size range of particles
- ☐ only pebbles

46 of 100

103 PU_2015_306_New

Which of the following seismic waves has highest velocity?

- ☐ S-wave
- ☐ P-wave
- ☐ love waves
- ☐ Rayleigh waves

47 of 100

112 PU_2015_306_New

Which of the following is an example of continent-rifting?

- ☐ Eastern Ghats of India
- ☐ Emperor-Hawaiiin chain of islands
- ☐ Isua province of Greenland
- ☐ Basin and Range Province of USA

48 of 100

124 PU_2015_306_New

Orthorhombic pyroxenes are similar to monoclinic pyroxenes in cell parameters except in the length of:-

- ☐ b axis which is higher in orthorhombic than in monoclinic
- ☐ a axis which is higher in orthorhombic than in monoclinic
- ☐ c axis which is higher in orthorhombic than in monoclinic
- ☐ a axis which is less in orthorhombic than in monoclinic

49 of 100

137 PU_2015_306_New

Partial melting of an Olivine basalt at granulite facies gives rise to granodiorite magma. The concentration of Ce in the basalt is 6 ppm and in granodiorite magma is 60 ppm. Calculate the extent of partial melting in % assuming that Ce is an incompatible element with $D=0.001$.

- ☐ 10%
- ☐ 0.1%
- ☐ 6%
- ☐ 1%

50 of 100

152 PU_2015_306_New

Which of these would indicate the former presence of a glacial lake?

- ☐ Out wash sands
- ☐ Till
- ☐ Varved clay
- ☐ Loess

51 of 100

107 PU_2015_306_New

The rock-deformation is said to be Newtonian (viscous) when:-

- ☐ strain is independent of stress
- ☐ strain is not proportional to stress
- ☐ strain is linearly proportional to stress
- ☐ rate of strain is linearly proportional to stress

52 of 100

145 PU_2015_306_New

The minerals glaucophane and jadeite are indicative of:-

- ☐ high-P and low-T
- ☐ low-P and high-T
- ☐ high-P and high-T
- ☐ low-P and low-T

53 of 100

143 PU_2015_306_New

Which of the following rocks is completely unfoliated?

- ☐ Slate
- ☐ Schist
- ☐ Mylonite
- ☐ Granofels

54 of 100

153 PU_2015_306_New

A medial moraine is developed:-

- ☐ in the middle of two coalesced glaciers
- ☐ on the side of a glacier
- ☐ at the end of the glacier
- ☐ in the bergschrund

55 of 100

135 PU_2015_306_New

During partial melting of mantle which one of the following elements behave as incompatible element?

- ☐ Ni
- ☐ Co
- ☐ Cr
- ☐ Zr

56 of 100

131 PU_2015_306_New

Which one of the following rocks is made up of > 90% of cumulate minerals?

- ☐ harzburgite
- ☐ tonalite
- ☐ lherzolite
- ☐ dunite

57 of 100

132 PU_2015_306_New

Kimberlite magmas are generated below:-

- ☐ Continental lithosphere
- ☐ Continental rift
- ☐ Mid-ocean ridge
- ☐ Island arc

58 of 100

138 PU_2015_306_New

A basaltic andesite magma undergoes differentiation and gives rise to dacite magma. The dacite has strong negative Eu anomaly, whereas, basalt has no Eu anomaly. What is the cause of - ve Eu anomaly in the dacite?

- ☐ Fractional crystallization of pyroxene
- ☐ Addition of plagioclase into dacite magma
- ☐ Fractional crystallization of olivine
- ☐ Fractional crystallization of plagioclase

59 of 100

109 PU_2015_306_New

Igneous rocks usually associated with a mature Island-arc are:-

- ☐ tholeiitic
- ☐ carbonatites
- ☐ calc-alkaline
- ☐ peralkaline

60 of 100

119 PU_2015_306_New

Which one of the following mineral is optically biaxial?

- ☐ Siderite
- ☐ Dolomite
- ☐ Aragonite
- ☐ Calcite

61 of 100

179 PU_2015_306_New

The ore metal of one of the following deposits is derived from rocks of continental crust, transported by meteoric water and deposited in organic carbon-rich zones of fluvial sediments.

- ☐ Quartz-pebble-conglomerate type uranium
- ☐ Sandstone-type uranium
- ☐ Unconformity-type uranium
- ☐ Redbed-type copper

62 of 100

164 PU_2015_306_New

Which factor does not directly influence the shape of a delta?

- ☐ strength and height of tides
- ☐ volume of sediment carried by the river
- ☐ intensity of wave action on the shore
- ☐ none of the above

63 of 100

162 PU_2015_306_New

Which of the following is a local base level?

- ☐ point bar
- ☐ floodplain
- ☐ lake
- ☐ ocean

64 of 100

177 PU_2015_306_New

The ore metal of one of the following deposits is derived from silicate magma of intermediate composition, transported by and deposited from magmatic-hydrothermal fluid, and forms very large deposits of low grade ore.

- ☐ SEDEX lead-zinc
- ☐ Skarn tungsten
- ☐ Porphyry copper
- ☐ Greisen tungsten

65 of 100

165 PU_2015_306_New

A stream that has more sediment to move than it can carry at one time is likely to be:-

- ☐ mature
- ☐ youthful
- ☐ meandering
- ☐ braided

66 of 100

172 PU_2015_306_New

PGE refers to a group of six precious metals including:-

- ☐ Pt-Pd-Rh-Ru-Ir-Os
- ☐ Pt-Pd-Re-Os-Au-Ag
- ☐ Pt-Pd-Rh-Ru-Re-Os
- ☐ Pt-Pd-Re-Os-Rh-Ru

67 of 100

176 PU_2015_306_New

Magmatic sulphide deposits are hosted by:-

- ☐ anorthosite
- ☐ nepheline syenite-carbonatite
- ☐ granite-granodiorite
- ☐ mafic-ultramafic rocks

68 of 100

169 PU_2015_306_New

The Ordovician period is known as the age of:-

- ☐ corals
- ☐ brachiopoda
- ☐ crinoids
- ☐ graptolites

69 of 100

173 PU_2015_306_New

One of the following group is called as rare metals:-

- ☐ Ce-Nd-Sm
- ☐ Sn-W-Mo
- ☐ Cu-Pb-Zn
- ☐ Li-Be-Nb

70 of 100

168 PU_2015_306_New

When did the Trilobite disappear from the Earth?

- ☐ End of Permian
- ☐ Devonian
- ☐ End of Cretaceous
- ☐ Carboniferous

71 of 100

161 PU_2015_306_New

Which of the following controls flow velocity in streams?

- ☐ gradient
- ☐ depth
- ☐ channel shape
- ☐ all of these

72 of 100

160 PU_2015_306_New

Trellis drainage is most likely to develop on:-

- ☐ horizontal layers of volcanic rocks
- ☐ granite
- ☐ natural levees
- ☐ tilted sedimentary rock layers

73 of 100

174 PU_2015_306_New

One of the following is not a silicate ore mineral:-

- ☐ leucoxene
- ☐ lepidolite
- ☐ braunite
- ☐ beryl

74 of 100

167 PU_2015_306_New

Which type of coiling is rare in gastropoda?

- ☐ sinistral
- ☐ trochospiral
- ☐ dextral
- ☐ armestral

75 of 100

170 PU_2015_306_New

Flat topped sea mounts are termed as:-

- ☐ guyots
- ☐ mesa
- ☐ monodnock
- ☐ inselberg

76 of 100

171 PU_2015_306_New

The 3 domains involved in all the ore forming processes are:-

- ☐ Source-migration path-ore trap
- ☐ Partial melting-transportation-deposition
- ☐ Melting-migration-crystallisation
- ☐ Dissolution-transportation-precipitation

77 of 100

163 PU_2015_306_New

A stream can lengthen its channel by:-

- ☐ hydraulic action
- ☐ headward erosion
- ☐ downcutting
- ☐ runoff

78 of 100

178 PU_2015_306_New

The ore metals of one of the following deposits are derived from MOR basalt, transported by and deposited from sea water-hydrothermal fluid, and forms massive sulphide deposits.

- ☐ Sudbury-type nickel-copper
- ☐ Kuroko-type lead-zinc
- ☐ Cyprus-type copper-zinc
- ☐ Epithermal silver-lead

79 of 100

175 PU_2015_306_New

One of the following is a magmatic sulphide deposit:-

- ☐ Climax-type molybdenum
- ☐ Sudbury copper-nickel
- ☐ Cyprus-type copper-zinc
- ☐ Kuroko-type lead-zinc

80 of 100

166 PU_2015_306_New

Bays and headlands are generally found in shoreline of:-

- ☐ neutral
- ☐ faulted
- ☐ emergence
- ☐ submergence

81 of 100

180 PU_2015_306_New

A basic assumption in the interpretation of fluid inclusions is that these are:-

- ☐ isobaric
- ☐ isothermal
- ☐ isochoric
- ☐ isochemical

82 of 100

187 PU_2015_306_New

One of the following metals does not form any mineral in which it is a constituent element.

- ☐ Cerium
- ☐ Platinum
- ☐ Niobium
- ☐ Rhenium

83 of 100

192 PU_2015_306_New

A world class wollastonite deposit occurs in southern part of Delhi fold belt at:-

- ☐ Belka Pahar and Khera Tarla
- ☐ Balda and Dewa-ka-bera
- ☐ Basantgarh and Pipela
- ☐ Deri and Ambamata

84 of 100

196 PU_2015_306_New

One of the following is a hydrothermal deposit:-

- ☐ Greisen tungsten
- ☐ Podiform chromite
- ☐ Gondite type manganese
- ☐ BIF hosted iron ore

85 of 100

183 PU_2015_306_New

Uranium deposit types are correctly arranged in decreasing order of age (that is old to young) in one of the following:-

- ☐ Unconformity - QPC - Sandstone
- ☐ Unconformity - Sandstone - QPC
- ☐ QPC - Unconformity - Sandstone
- ☐ Sandstone - Unconformity - QPC

86 of 100

181 PU_2015_306_New

Degree of fill of a fluid inclusion refers to the relative proportion of:-

- ☐ liquid + vapour phases to the total volume of fluid inclusion
- ☐ vapour phase to the total volume of fluid inclusion
- ☐ liquid phase to the total volume of fluid inclusion
- ☐ daughter crystal to the total volume of fluid inclusion

87 of 100

193 PU_2015_306_New

In the process of froth flotation for concentrating sulphide ores, pine oil and oleic acid are used as:-

- ☐ modifier
- ☐ collector
- ☐ frother and collector respectively
- ☐ frother

88 of 100

182 PU_2015_306_New

Boiling of fluid, mixing of fluids and fluid-rock interaction are the important processes responsible for:-

- ☐ transport of metal by a fluid phase
- ☐ leaching of metal from source rock
- ☐ deposition of ore from a hydrothermal fluid
- ☐ dispersion of metal in a rock

89 of 100

197 PU_2015_306_New

One of the following is the characteristic mineral assemblage of greisen:-

- ☐ Quartz-muscovite-topaz-fluorite
- ☐ Quartz-microcline-sodic plagioclase
- ☐ Quartz-orthoclase- sodic plagioclase
- ☐ Quartz-microcline-sodic plagioclase-fluorite

90 of 100

195 PU_2015_306_New

Jigging is a process in which minerals are separated according to their:-

- ☐ density
- ☐ size
- ☐ water-adhering or air-adhering character
- ☐ magnetic susceptibility

91 of 100

188 PU_2015_306_New

Apart from lode gold deposits, gold is produced in India from:-

- ☐ copper concentrate
- ☐ lead concentrate
- ☐ chromite
- ☐ uranium ore

92 of 100

198 PU_2015_306_New

One of the following mineral deposits does not occur in skarn:-

- ☐ Fe-Sn-W
- ☐ Cr-Ni-Ti
- ☐ Wollastonite
- ☐ Cu-Pb-Zn

93 of 100

190 PU_2015_306_New

The asbestos mined from Pulivendla area of Cuddapah basin is a:-

- ☐ chialtolite
- ☐ chrysolite
- ☐ chrysotile
- ☐ cristobalite

94 of 100

184 PU_2015_306_New

One of the following ore minerals is not common in beach placer deposits:-

- ☐ rutile
- ☐ chromite
- ☐ ilmenite
- ☐ monazite

95 of 100

189 PU_2015_306_New

Asbestos deposits in Pulivendla area of Cuddapah basin occur:-

- ☐ within dolostone
- ☐ at the contact zone between shale and basic dyke
- ☐ at the contact zone between dolostone and basic dyke
- ☐ within shale

96 of 100

194 PU_2015_306_New

In mineral processing plants, run-off mine is reduced in size by crushing and grinding for:-

- ☐ classification of run-off mine according to size
- ☐ optimal liberation of ore minerals from gangue minerals
- ☐ separation of gangue minerals
- ☐ concentration of ore minerals

97 of 100

185 PU_2015_306_New

Typical profile of a lateritic bauxite deposit consists of:- (from top to bottom)

- ☐ laterite-bauxite-lithomarge-partially weathered bed rock-bed rock
- ☐ bauxite-laterite-lithomarge-partially weathered bed rock-bed rock
- ☐ lithomarge-bauxite-laterite-partially weathered bed rock-bed rock
- ☐ lithomarge-laterite-bauxite-partially weathered bed rock-bed rock

98 of 100

191 PU_2015_306_New

"Green marble" mined from Rishabdev area of Aravalli fold belt is:-

- ☐ serpentinised peridotite
- ☐ diopside-bearing dolomitic marble
- ☐ actinolite-bearing dolomitic marble
- ☐ epidote-bearing dolomitic marble

99 of 100

186 PU_2015_306_New

Metals in one of the following options are recovered from their ores by acid leaching.

- ☐ gold and molybdenum
- ☐ silver and uranium
- ☐ silver and molybdenum
- ☐ gold and zinc

100 of 100

199 PU_2015_306_New

Dolostone hosted uranium deposit occurs at:-

- ☐ Gogi
- ☐ Jaduguda
- ☐ Tummalapalle
- ☐ Domiasiat