

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
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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
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Alt1	Plastic material.
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Alt2	Brittle material.
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Alt3	Elastoplastic material.
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Alt4	Ductile material.
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29	The plunge and pitch are equal when the beds are:
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Alt1	Horizontal
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Alt2	Inclined
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Alt3	Inclined at 45°.
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Alt4	Vertical
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30	When Uranium- 238 emits α particles it decays in to
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Alt1	Helium
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Alt2	Carbon
------	--------

Alt3	Thorium-234
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Alt4	Uranium-235
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31	A good lubricant should have
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Alt1	Pour point
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Alt2	Volatility
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Alt3	Viscosity index
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Alt4	Cloud point
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32	Gamma ray log measurements are used to quantify
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Alt1	Hydrocarbon saturation
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Alt2	Porosity of formation
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Alt3	Volume of shale in the formation
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Alt4	Density of the formation
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33	Which of the following isotopes is most useful for dating very young wood and charcoal?
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Alt1	Rb-87
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Alt2	K-40
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Alt3	C-14
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Alt4	U-238
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34	Which of the following mineral deposit is formed exclusively by surface geological processes?
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Alt1	Asbestos
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Alt2	Bauxite
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Alt3	Corundum
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Alt4	Wollastonite
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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
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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	Electomagnetic 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 ± 30 m/s?
Alt1	6051.78 ± 30.00
Alt2	$(605178 \times 10^{\sup>-2\sup>}) \pm (3 \times 10^{\sup>-1\sup>})$
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?
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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	Aorthite 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.
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	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

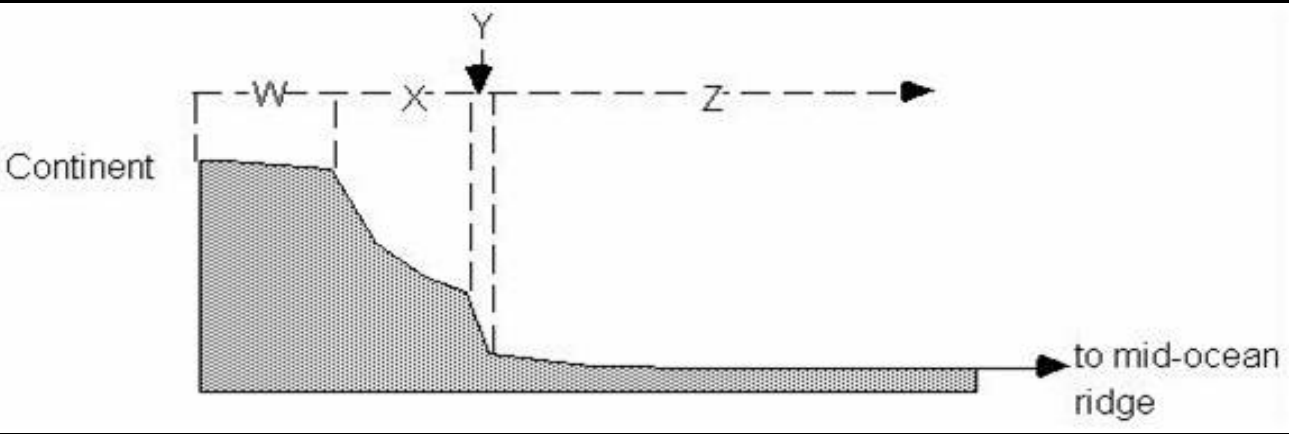
71	A basaltic melt completely crystallizes to become solid rock at about 800 ^o C. Just immediately after its crystallization, the polarity of the Earth's magnetic field changed. In what way would that affect the magnetization of the minerals like magnetite and hematite?
Alt1	They will record the old 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

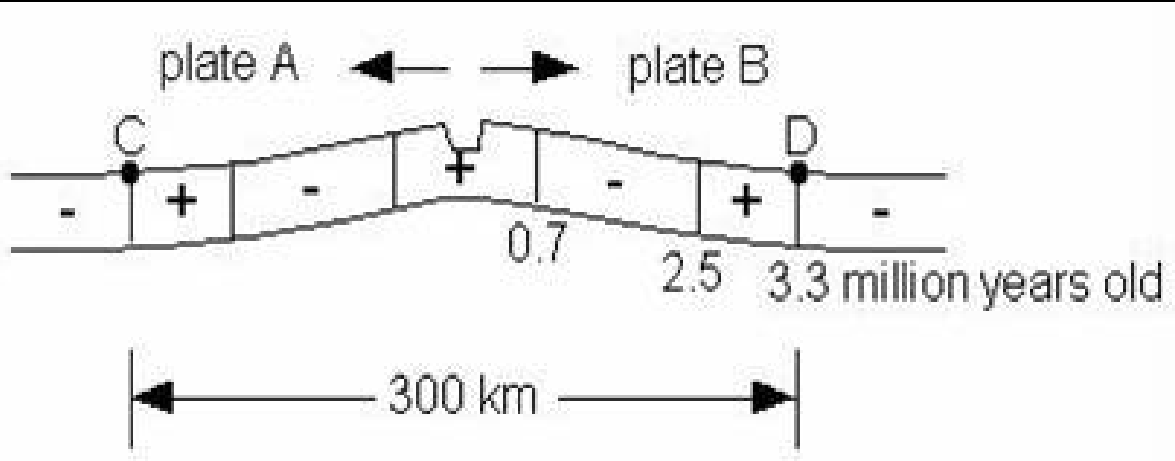
Alt3	Reverse fault
Alt4	Transform fault

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:



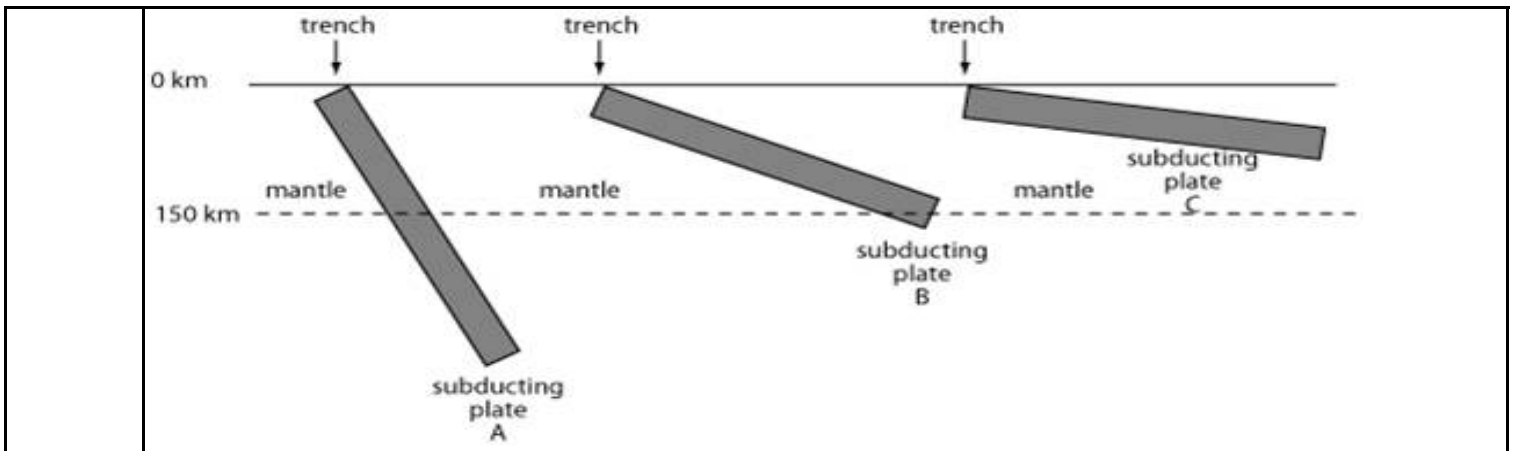
Alt1	Ocean trough
Alt2	Ocean trench
Alt3	Continental slope
Alt4	Continental rise

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

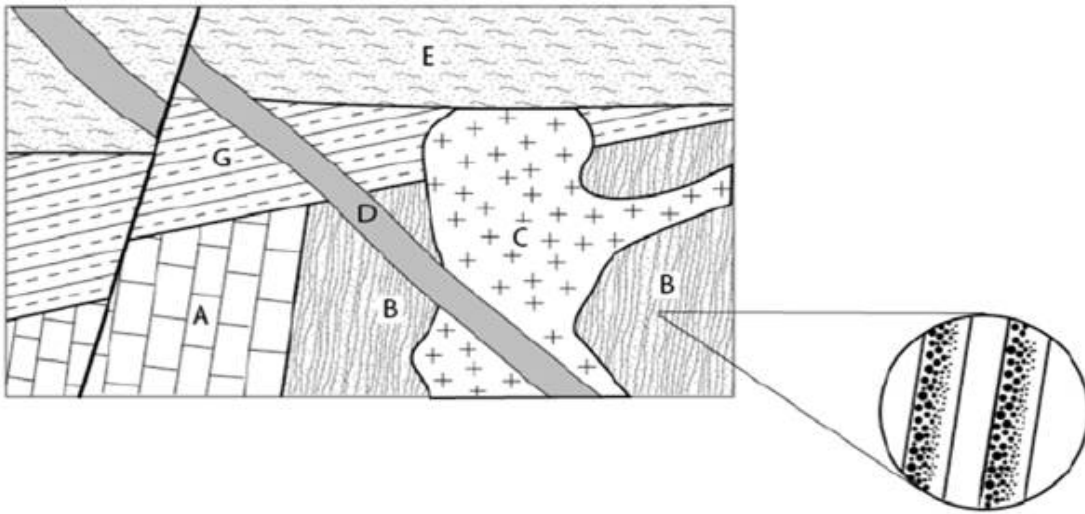
76 The following figure is a schematic illustration of three subduction zones A, B and C. Which of these subduction zones will have the widest arc-trench gap?



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

77 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.

Oldest ☐ Youngest



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
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79	The specific gravity of a powdered mineral can be determined with the help of
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Alt1	Chemical balance
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Alt2	Pycnometer
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Alt3	Jolly's spring balance
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Alt4	Walker's Steel Yard
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80	Find the odd man out
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Alt1	Lamination
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Alt2	Slaty cleavage
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Alt3	Schistosity
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Alt4	Foliation
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81	Stromatolites are
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Alt1	Green algae
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Alt2	Blue algae
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Alt3	Organo-sedimentary structures
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Alt4	Sedimentary structure
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82	The most distributed sedimentary rock seen in the crust is
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Alt1	Shale
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Alt2	Sandstone
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Alt3	Limestone
------	-----------

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

Alt3	9800 cm/s^2
------	-----------------------

Alt4	980 cm/s
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84	The total magnetic field strength is weakest at
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Alt1	0° latitude
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Alt2	90° latitude
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Alt3	$30^\circ \text{ N} - 30^\circ \text{ S}$ latitude
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Alt4	$60^\circ \text{ N} - 60^\circ \text{ S}$ latitude
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85	Which of the following listed instruments is NOT used in geochemical prospecting
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Alt1	Atomic Absorption Spectrophotometer
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Alt2	Emission Spectrograph
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Alt3	Flame photometer
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Alt4	Optical microscope
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86	The Geological Mapping undertaken by GSI is on the scale of
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Alt1	1:50,000
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Alt2	1:40,000
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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 - stare 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