

CSIR 15th Dec 2019

Application No	
Candidate Name	
Roll No.	
Test Date	15/12/2019
Test Time	9:30 AM - 12:30 PM
Subject	Earth Sciences

Section : Part A Earth Sciences

Q.1 In a college admission where applicants have to choose only one subject, $\frac{1}{4}$ th of the applicants opted for Biology, $\frac{1}{6}$ th for Chemistry, $\frac{1}{8}$ th for Physics and $\frac{1}{12}$ th for Maths. 18 applicants did not opt for any of the above four subjects. How many applicants were there?

- (1) 22
- (2) 24
- (3) 36
- (4) 48

Options 1. 1

- 2. 2
- 3. 3
- 4. 4

Question Type : **MSQ**

Question ID : **1879801256**

Option 1 ID : **1879805021**

Option 2 ID : **1879805022**

Option 3 ID : **1879805023**

Option 4 ID : **1879805024**

Status : **Not Answered**

Chosen Option : --

Q.2 What day of the week will it be 61 days from a Friday?

- (1) Saturday
- (2) Sunday
- (3) Friday
- (4) Wednesday

Options 1. 1

- 2. 2
- 3. 3

Question Type : **MSQ**
 Question ID : **1879801270**
 Option 1 ID : **1879805077**
 Option 2 ID : **1879805078**
 Option 3 ID : **1879805079**
 Option 4 ID : **1879805080**
 Status : **Not Answered**
 Chosen Option : --

Q.3 In a very old, stable forest, a particular species of plants grows to a maximum height of 3 m. In a large survey, it is found that 30% of the plants have heights less than 1 m, and 50% have heights more than 2 m. From these observations we can say that the height of the plants increases

- (1) at the slowest rate when they are less than 1 m tall.
- (2) at the fastest rate when they are between 1 m and 2 m tall.
- (3) at the fastest rate when they are more than 2 m tall.
- (4) at the same rate at all stages.

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**
 Question ID : **1879801263**
 Option 1 ID : **1879805049**
 Option 2 ID : **1879805050**
 Option 3 ID : **1879805051**
 Option 4 ID : **1879805052**
 Status : **Answered**
 Chosen Option : **2**

Q.4 Given that $K! = 1 \times 2 \times 3 \times \dots \times K$, which is the largest among the following numbers?

- (1) $(2!)^{1/2}$
- (2) $(3!)^{1/3}$
- (3) $(4!)^{1/4}$
- (4) $\frac{(3!)}{2}$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : 1879801260

Option 1 ID : 1879805037

Option 2 ID : 1879805038

Option 3 ID : 1879805039

Option 4 ID : 1879805040

Status : Not Answered

Chosen Option : --

Q.5

An ice cube of volume 10 cm^3 is floating over a glass of water of 10 cm^2 cross-section area and 10 cm height. The level of the water is exactly at the brim of the glass. Given that the density of ice is 10% less than that of water, what will be the situation when ice melts completely?

- (1) The level falls by 10% of the side of the cube.
- (2) The level falls by 10% of the original height of the water column.
- (3) The level increases by 10% of the side of the cube and water spills out.
- (4) There is no change in the level of the water.

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MSQ

Question ID : 1879801265

Option 1 ID : 1879805057

Option 2 ID : 1879805058

Option 3 ID : 1879805059

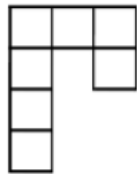
Option 4 ID : 1879805060

Status : Not Answered

Chosen Option : --

Q.6

How many non-square rectangles are there in the following figure, consisting of 7 squares?



- (1) 8
- (2) 9
- (3) 10
- (4) 11

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MSQ

Question ID : 1879801254

Option 1 ID : 1879805013

Option 2 ID : 1879805014

Option 3 ID : 1879805015

Option 4 ID : 1879805016

Status : Answered

Chosen Option : 2

Q.7 The mean of a set of 10 numbers is M . By combining with it a second set of M numbers, the mean of the combined set becomes 10. What is the sum of the second set of numbers?

(1) $10M-1$

(2) $10M+1$

(3) 20

(4) 100

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MSQ

Question ID : 1879801252

Option 1 ID : 1879805005

Option 2 ID : 1879805006

Option 3 ID : 1879805007

Option 4 ID : 1879805008

Status : Answered

Chosen Option : 1

Q.8 In a race five drivers were in the following situation. M was following V, R was just ahead of T, and K was the only one between T and V. Who was in the second place at that instant?

(1) V

(2) R

(3) T

(4) K

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MSQ

Question ID : 1879801257

Option 1 ID : 1879805025

Option 2 ID : 1879805026

Option 3 ID : 1879805027

Option 4 ID : 1879805028

Q.9 Which of the following 7-digit numbers CANNOT be perfect squares?
A = 45xyz26, B = 2xyz175, C = xyz3310

- (1) Only A.
- (2) Only B.
- (3) Only C.
- (4) All three.

- Options**
- 1. 1
 - 2. 2
 - 3. 3
 - 4. 4

Question Type : **MSQ**
Question ID : **1879801259**
Option 1 ID : **1879805033**
Option 2 ID : **1879805034**
Option 3 ID : **1879805035**
Option 4 ID : **1879805036**
Status : **Not Answered**
Chosen Option : --

Q.10 A cyclist covers a certain distance at a constant speed. If a jogger covers half the distance in double the time as the cyclist, the ratio of the speed of the jogger to that of the cyclist is

- (1) 1:4
- (2) 4:1
- (3) 1:2
- (4) 2:1

- Options**
- 1. 1
 - 2. 2
 - 3. 3
 - 4. 4

Question Type : **MSQ**
Question ID : **1879801268**
Option 1 ID : **1879805069**
Option 2 ID : **1879805070**
Option 3 ID : **1879805071**
Option 4 ID : **1879805072**
Status : **Answered**
Chosen Option : **1**

Q.11

Of three children, Uma plays all three of cricket, football and hockey. Iqbal plays cricket but not football, and Tarun plays hockey but neither football nor cricket. The number of games played by at least two of the children is

- (1) one.
- (2) two.
- (3) three.
- (4) zero.

Options 1. 1

- 2. 2
- 3. 3
- 4. 4

Question Type : **MSQ**

Question ID : **1879801262**

Option 1 ID : **1879805045**

Option 2 ID : **1879805046**

Option 3 ID : **1879805047**

Option 4 ID : **1879805048**

Status : **Not Answered**

Chosen Option : --

Q.12 The result of a survey to find the most preferred leader among A, B, C is shown in the table.

Votes	A	B	C
1 st preference	13	54	33
2 nd preference	24	37	39
3 rd preference	63	9	28

First, second and third preferences are given weights 3, 2, 1, respectively. Statistically, which of the following can be said to represent the preferences of the voters?

- (1) A and C are within 10% of each other.
- (2) B is the most preferred.
- (3) B and C are within 10% of each other.
- (4) C is the most preferred.

Options 1. 1

- 2. 2
- 3. 3
- 4. 4

Question Type : **MSQ**

Question ID : **1879801264**

Option 1 ID : **1879805053**

Option 2 ID : **1879805054**

Option 3 ID : **1879805055**

Option 4 ID : **1879805056**

Status : **Not Answered**

Chosen Option : --

Q.13 A four-wheeled cart is going around a circular track. Which of the following statements is correct, if the four wheels are free to rotate independent of each other, and the cart negotiates the track stably?

- (1) All wheels rotate at the same speed.
- (2) The four wheels have different speeds each.
- (3) The wheels closer to the inside of the track move slower than the outer-side wheels.
- (4) The wheels closer to the inside of the track move faster than the outer-side wheels.

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801266**

Option 1 ID : **1879805061**

Option 2 ID : **1879805062**

Option 3 ID : **1879805063**

Option 4 ID : **1879805064**

Status : **Answered**

Chosen Option : **3**

Q.14 What is the ratio of the surface area of a cube with side 1 cm to the total surface area of the cubes formed by breaking the original cube into identical cubes of side 1 mm?

- (1) $1/6$
- (2) $1/10$
- (3) $1/100$
- (4) $1/36$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801251**

Option 1 ID : **1879805001**

Option 2 ID : **1879805002**

Option 3 ID : **1879805003**

Option 4 ID : **1879805004**

Status : **Answered**

Chosen Option : **3**

Q.15

A multiple choice exam has 4 questions, each with 4 answer choices. Every question has only one correct answer. The probability of getting all answers correct by independent random guesses for each one is

- (1) $1/4$
- (2) $(1/4)^4$
- (3) $(3/4)$
- (4) $(3/4)^4$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801253**

Option 1 ID : **1879805009**

Option 2 ID : **1879805010**

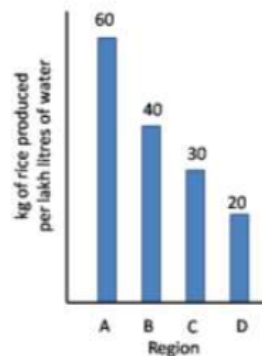
Option 3 ID : **1879805011**

Option 4 ID : **1879805012**

Status : **Not Answered**

Chosen Option : --

Q.16 Based on the bar chart shown here, which of the following inferences is correct?



- (1) Region A uses maximum water per kg of rice.
- (2) Average water consumption of the four regions is 37.5 lakh litres.
- (3) Region D uses thrice the amount of water used by region A per kg of rice.
- (4) Region B uses 20 lakh litres of less water than region A.

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801269**

Option 1 ID : **1879805073**

Option 2 ID : **1879805074**

Option 3 ID : **1879805075**
Option 4 ID : **1879805076**
Status : **Marked For Review**
Chosen Option : **2**

Q.17 Karan's house is 20 m to the east of Rahul's house. Mehul's house is 25 m to the North-East of Rahul's house. With respect to Mehul's house in which direction is Karan's house?

- (1) East
- (2) South
- (3) North-East
- (4) West

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MSQ**
Question ID : **1879801258**
Option 1 ID : **1879805029**
Option 2 ID : **1879805030**
Option 3 ID : **1879805031**
Option 4 ID : **1879805032**
Status : **Answered**
Chosen Option : **2**

Q.18 A bag contains 8 red balls, 10 blue balls, 17 green balls. What is the minimum number of balls that needs to be taken out from the bag to ensure getting at least one ball of each colour?

- (1) 19
- (2) 18
- (3) 28
- (4) 27

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MSQ**
Question ID : **1879801255**
Option 1 ID : **1879805017**
Option 2 ID : **1879805018**
Option 3 ID : **1879805019**
Option 4 ID : **1879805020**
Status : **Not Answered**
Chosen Option : **--**

Q.19

A two-digit number is such that if the digit 4 is placed to its right, its value would increase by 490. Find the original number.

- (1) 48
- (2) 54
- (3) 64
- (4) 56

Options 1. 1

- 2. 2
- 3. 3
- 4. 4

Question Type : **MSQ**

Question ID : **1879801267**

Option 1 ID : **1879805065**

Option 2 ID : **1879805066**

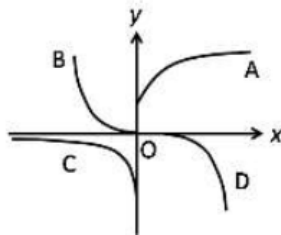
Option 3 ID : **1879805067**

Option 4 ID : **1879805068**

Status : **Answered**

Chosen Option : **2**

Q.20 Which is the curve in the figure whose points satisfy the equation $y = \text{const} \times e^x$?



- (1) A
- (2) B
- (3) C
- (4) D

Options 1. 1

- 2. 2
- 3. 3
- 4. 4

Question Type : **MSQ**

Question ID : **1879801261**

Option 1 ID : **1879805041**

Option 2 ID : **1879805042**

Option 3 ID : **1879805043**

Option 4 ID : **1879805044**

Status : **Answered**

Chosen Option : **3**

Q.1 Which one of the followings evolved earliest on the Earth?

- (1) Amphibians
- (2) Birds
- (3) Mammals
- (4) Prokaryotes

Options 1. 1

- 2. 2
- 3. 3
- 4. 4

Question Type : **MSQ**
Question ID : **1879801314**
Option 1 ID : **1879805253**
Option 2 ID : **1879805254**
Option 3 ID : **1879805255**
Option 4 ID : **1879805256**
Status : **Answered**
Chosen Option : **4**

Q.2 Stratified circulation in peninsular Indian estuaries occurs during

- (1) tropical cyclones
- (2) higher river discharge
- (3) peak summer
- (4) peak winter

Options 1. 1

- 2. 2
- 3. 3
- 4. 4

Question Type : **MSQ**
Question ID : **1879801307**
Option 1 ID : **1879805225**
Option 2 ID : **1879805226**
Option 3 ID : **1879805227**
Option 4 ID : **1879805228**
Status : **Not Answered**
Chosen Option : **--**

Q.3 Which one of the following is the correct sequence of organisms benefitting from upwelling of nutrient-rich deep water towards the surface?

- (1) Mangroves → Urchins → Seaweeds
- (2) Gastropods → Crabs → Seagrasses
- (3) Dinoflagellates → Kelps → Otters
- (4) Diatoms → Copepods → Anchovies

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801306**

Option 1 ID : **1879805221**

Option 2 ID : **1879805222**

Option 3 ID : **1879805223**

Option 4 ID : **1879805224**

Status : **Not Answered**

Chosen Option : --

Q.4 Which one of the following seismic phases is the earliest to reach a station at an epicentral distance of 120° ?

- (1) P_{diff}
- (2) P_cP
- (3) PKP
- (4) PPP

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801293**

Option 1 ID : **1879805169**

Option 2 ID : **1879805170**

Option 3 ID : **1879805171**

Option 4 ID : **1879805172**

Status : **Not Answered**

Chosen Option : --

Q.5

Which of the following is a semi-conservative element in seawater?

- (1) Ca
- (2) Cl
- (3) Fe
- (4) CO₂

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801304**

Option 1 ID : **1879805213**

Option 2 ID : **1879805214**

Option 3 ID : **1879805215**

Option 4 ID : **1879805216**

Status : **Not Answered**

Chosen Option : --

Q.6 Which one of the following statements is NOT true for Chondrites?

- (1) contain olivine, pyroxene and metallic iron
- (2) composed of three main components: Chondrules, CAIs, Matrix
- (3) subdivided into carbonaceous (C), Ordinary (O), and Enstatite (E)
- (4) come from a parent body which has been fractionated since its aggregation early in the history of the solar system

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801272**

Option 1 ID : **1879805085**

Option 2 ID : **1879805086**

Option 3 ID : **1879805087**

Option 4 ID : **1879805088**

Status : **Answered**

Chosen Option : 1

Q.7

Which one of the following DOES NOT apply to a baroclinic atmosphere?

- (1) density depends only on pressure
- (2) density depends on both temperature and pressure
- (3) geostrophic wind has vertical shear
- (4) vertical shear depends on horizontal thermal gradient

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801278**

Option 1 ID : **1879805109**

Option 2 ID : **1879805110**

Option 3 ID : **1879805111**

Option 4 ID : **1879805112**

Status : **Not Answered**

Chosen Option : --

Q.8 Which one of the following is a high nutrient and low chlorophyll (HNLC) region?

- (1) Bay of Bengal
- (2) Equatorial Indian Ocean
- (3) Subarctic North Pacific Ocean
- (4) Mediterranean Sea

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801302**

Option 1 ID : **1879805205**

Option 2 ID : **1879805206**

Option 3 ID : **1879805207**

Option 4 ID : **1879805208**

Status : **Not Answered**

Chosen Option : --

Q.9

Relative vorticity is defined as the curl of

- (1) absolute velocity
- (2) relative velocity
- (3) difference of absolute and relative vorticity
- (4) sum of absolute and relative vorticity

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801280**

Option 1 ID : **1879805117**

Option 2 ID : **1879805118**

Option 3 ID : **1879805119**

Option 4 ID : **1879805120**

Status : **Not Answered**

Chosen Option : --

Q.10 Conditional instability in the atmosphere is observed when

- (1) the environmental lapse rate is lower than the saturated adiabatic lapse rate
- (2) the environmental lapse rate is greater than the dry adiabatic lapse rate
- (3) the environmental lapse rate is greater than the saturated adiabatic lapse rate but lower than the dry adiabatic lapse rate
- (4) the environmental lapse rate is greater than the dry adiabatic lapse rate but lower than the saturated adiabatic lapse rate

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801284**

Option 1 ID : **1879805133**

Option 2 ID : **1879805134**

Option 3 ID : **1879805135**

Option 4 ID : **1879805136**

Status : **Not Answered**

Chosen Option : --

Q.11

On transport-limited slopes, the rate of

- (1) erosion is higher
- (2) weathering is higher
- (3) denudation higher
- (4) mass movement is higher

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801290**

Option 1 ID : **1879805157**

Option 2 ID : **1879805158**

Option 3 ID : **1879805159**

Option 4 ID : **1879805160**

Status : **Not Answered**

Chosen Option : --

Q.12 Which one of the following is the cause of magmatism in the collision zone?

- (1) decompression
- (2) accumulation of radioactive heat
- (3) seismicity
- (4) increased erosion

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801286**

Option 1 ID : **1879805141**

Option 2 ID : **1879805142**

Option 3 ID : **1879805143**

Option 4 ID : **1879805144**

Status : **Marked For Review**

Chosen Option : **2**

Q.13

Which one of the following statements is NOT true given that the salinity distribution with depth over mid-latitude ocean shows a decrease with depth?

- (1) Evaporation exceeds precipitation
- (2) Density increases with depth
- (3) Temperature decreases with depth
- (4) Precipitation exceeds evaporation

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801309**

Option 1 ID : **1879805233**

Option 2 ID : **1879805234**

Option 3 ID : **1879805235**

Option 4 ID : **1879805236**

Status : **Not Answered**

Chosen Option : --

Q.14

In the atmospheric boundary layer

- (1) viscous force cannot be neglected
- (2) pressure gradient force can be neglected
- (3) inertial force can be neglected
- (4) gravitational force can be neglected

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801310**

Option 1 ID : **1879805237**

Option 2 ID : **1879805238**

Option 3 ID : **1879805239**

Option 4 ID : **1879805240**

Status : **Not Answered**

Chosen Option : --

Q.15

Rocks in the upper crust and lower mantle are

- (1) both ferromagnetic
- (2) both paramagnetic
- (3) ferromagnetic and paramagnetic, respectively
- (4) paramagnetic and ferromagnetic, respectively

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801289**

Option 1 ID : **1879805153**

Option 2 ID : **1879805154**

Option 3 ID : **1879805155**

Option 4 ID : **1879805156**

Status : **Answered**

Chosen Option : **3**

Q.16 Which one of the following astronomical objects is more massive than the Earth?

- (1) Neptune
- (2) Pluto
- (3) Venus
- (4) Mars

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801271**

Option 1 ID : **1879805081**

Option 2 ID : **1879805082**

Option 3 ID : **1879805083**

Option 4 ID : **1879805084**

Status : **Marked For Review**

Chosen Option : **1**

Q.17

Equatorial Current Systems in the global ocean are produced by

- (1) rotation of the Earth
- (2) surface wind forcing over the equatorial region of the global ocean
- (3) changes in temperature and salinity in the polar regions
- (4) high solar radiation and heavy precipitation over the equatorial region

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801301**

Option 1 ID : **1879805201**

Option 2 ID : **1879805202**

Option 3 ID : **1879805203**

Option 4 ID : **1879805204**

Status : **Not Answered**

Chosen Option : --

Q.18 Which one of the following does NOT belong to Volcanic Massive Sulphide (VMS) deposit?

- (1) Cyprus type
- (2) Besshi type
- (3) Kuroko type
- (4) SEDEX type

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801313**

Option 1 ID : **1879805249**

Option 2 ID : **1879805250**

Option 3 ID : **1879805251**

Option 4 ID : **1879805252**

Status : **Not Answered**

Chosen Option : --

Q.19

A geological cross-section, drawn through strike line of uniformly dipping beds, shows the bedding traces as a set of lines that are

- (1) horizontal
- (2) inclined at true dip angle
- (3) inclined at apparent dip angle $> 0^\circ$
- (4) vertical

Options 1. 1

- 2. 2
- 3. 3
- 4. 4

Question Type : **MSQ**

Question ID : **1879801319**

Option 1 ID : **1879805273**

Option 2 ID : **1879805274**

Option 3 ID : **1879805275**

Option 4 ID : **1879805276**

Status : **Not Answered**

Chosen Option : --

Q.20 The coldest part of the Earth's atmosphere is

- (1) tropopause
- (2) stratopause
- (3) mesopause
- (4) upper thermosphere

Options 1. 1

- 2. 2
- 3. 3
- 4. 4

Question Type : **MSQ**

Question ID : **1879801295**

Option 1 ID : **1879805177**

Option 2 ID : **1879805178**

Option 3 ID : **1879805179**

Option 4 ID : **1879805180**

Status : **Answered**

Chosen Option : **3**

Q.21

Mantle plumes are

- (1) linked to plate-tectonics
- (2) not able to explain ocean island chains
- (3) able to explain volcanic arc magmatism
- (4) used to calculate absolute plate motion

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801292**

Option 1 ID : **1879805165**

Option 2 ID : **1879805166**

Option 3 ID : **1879805167**

Option 4 ID : **1879805168**

Status : **Answered**

Chosen Option : **4**

Q.22 Electrical discharge suddenly heats the conducting air channel in the Earth's atmosphere, which expands and generates shock waves. These waves spread as

- (1) Inertia-gravity wave
- (2) Seismic wave
- (3) Rossby wave
- (4) Sound wave

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801297**

Option 1 ID : **1879805185**

Option 2 ID : **1879805186**

Option 3 ID : **1879805187**

Option 4 ID : **1879805188**

Status : **Not Answered**

Chosen Option : **--**

Q.23

Geostrophic approximation is the balance between

- (1) viscous and inertial forces
- (2) pressure gradient and Coriolis forces
- (3) pressure gradient and inertial forces
- (4) inertial and Coriolis forces

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MSQ

Question ID : 1879801281

Option 1 ID : 1879805121

Option 2 ID : 1879805122

Option 3 ID : 1879805123

Option 4 ID : 1879805124

Status : Not Answered

Chosen Option : --

Q.24

Which of the following symmetry operations is identical to the $\bar{6}$ operations?

- (1) $3 + i$
- (2) $3/m$
- (3) $6/m$
- (4) $6 + i$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MSQ

Question ID : 1879801317

Option 1 ID : 1879805265

Option 2 ID : 1879805266

Option 3 ID : 1879805267

Option 4 ID : 1879805268

Status : Answered

Chosen Option : 2

Q.25

Ozone in stratosphere protects us from UV radiation by

- (1) reflecting it back to space
- (2) absorbing it and decomposing
- (3) refracting it to lower altitude
- (4) scattering it back to space

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801311**

Option 1 ID : **1879805241**

Option 2 ID : **1879805242**

Option 3 ID : **1879805243**

Option 4 ID : **1879805244**

Status : **Answered**

Chosen Option : **2**

Q.26 Which ions are the most abundant in rain water, river water and sea water, respectively?

- (1) Na^+ , Cl^- , Na^+
- (2) Cl^- , HCO_3^- , Cl^-
- (3) Cl^- , Na^+ , Cl^-
- (4) Na^+ , Ca^{2+} , Na^+

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801315**

Option 1 ID : **1879805257**

Option 2 ID : **1879805258**

Option 3 ID : **1879805259**

Option 4 ID : **1879805260**

Status : **Answered**

Chosen Option : **2**

Q.27

The microwave region of the electromagnetic spectrum is mostly absorbed by which of the following components of the atmosphere?

- (1) CO₂ only
- (2) O₃ only
- (3) O₂ and H₂O
- (4) O₃ and CO₂

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801274**

Option 1 ID : **1879805093**

Option 2 ID : **1879805094**

Option 3 ID : **1879805095**

Option 4 ID : **1879805096**

Status : **Not Answered**

Chosen Option : --

Q.28

A depositional feature attached at one end to the mainland and backed by a lagoon or marshland is known as

- (1) Beach ridge
- (2) Beach cusp
- (3) Spit
- (4) Tidal flat

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801318**

Option 1 ID : **1879805269**

Option 2 ID : **1879805270**

Option 3 ID : **1879805271**

Option 4 ID : **1879805272**

Status : **Not Answered**

Chosen Option : --

Q.29

Which one of the following minerals is characterised by a lack of cleavage?

- (1) Calcite
- (2) Fluorite
- (3) Quartz
- (4) Feldspar

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801282**

Option 1 ID : **1879805125**

Option 2 ID : **1879805126**

Option 3 ID : **1879805127**

Option 4 ID : **1879805128**

Status : **Answered**

Chosen Option : **3**

Q.30

Flux Richardson number is ratio of

- (1) transport and pressure force
- (2) buoyant production and mechanical production
- (3) buoyant production and pressure force
- (4) mechanical production and transport force

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801279**

Option 1 ID : **1879805113**

Option 2 ID : **1879805114**

Option 3 ID : **1879805115**

Option 4 ID : **1879805116**

Status : **Not Answered**

Chosen Option : **--**

Q.31

Which one of the following sets of processes best exemplifies the key functions of heterotrophic bacteria in the marine environment?

- (1) Autotrophic production, organic matter production
- (2) New production, secondary production, chemolithotrophy
- (3) Remineralisation, respiration, organic matter oxidation
- (4) Chemoheterotrophy, chemolithotrophy, chemosynthesis

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801305**

Option 1 ID : **1879805217**

Option 2 ID : **1879805218**

Option 3 ID : **1879805219**

Option 4 ID : **1879805220**

Status : **Not Answered**

Chosen Option : --

Q.32 If surface heatflows of oceanic and continental lithospheres are same, which one of the following is true?

- (1) Both oceanic and continental lithospheres have same mantle heatflow
- (2) Continental lithosphere has lower mantle heatflow than oceanic lithosphere
- (3) Oceanic lithosphere has lower mantle heatflow than continental lithosphere
- (4) Oceanic lithosphere has more radiogenic heat source concentration than continental lithosphere

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801288**

Option 1 ID : **1879805149**

Option 2 ID : **1879805150**

Option 3 ID : **1879805151**

Option 4 ID : **1879805152**

Status : **Not Answered**

Chosen Option : --

Q.33

Which one of the following geomorphological features is a proven crater created by meteorite impact?

- (1) Ramgarh Lake , Rajasthan
- (2) Lonar Lake, Maharashtra
- (3) Chilka Lake, Odisha
- (4) Tso Moriri Lake, Laddakh

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801312**

Option 1 ID : **1879805245**

Option 2 ID : **1879805246**

Option 3 ID : **1879805247**

Option 4 ID : **1879805248**

Status : **Answered**

Chosen Option : **2**

Q.34 Stream competence denotes the transport of sediment of

- (1) average size
- (2) smallest size
- (3) largest size
- (4) all sizes

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801308**

Option 1 ID : **1879805229**

Option 2 ID : **1879805230**

Option 3 ID : **1879805231**

Option 4 ID : **1879805232**

Status : **Answered**

Chosen Option : **1**

Q.35

How old are the oldest fossils recorded on the Earth?

- (1) < 1 Ga
- (2) 1 – 2 Ga
- (3) 2 – 3 Ga
- (4) > 3 Ga

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801296**

Option 1 ID : **1879805181**

Option 2 ID : **1879805182**

Option 3 ID : **1879805183**

Option 4 ID : **1879805184**

Status : **Answered**

Chosen Option : **4**

Q.36 Which one of the following is NOT a major ingredient of photochemical smog?

- (1) NO_x
- (2) hydrocarbons
- (3) SO_x
- (4) Carbon monoxide

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801300**

Option 1 ID : **1879805197**

Option 2 ID : **1879805198**

Option 3 ID : **1879805199**

Option 4 ID : **1879805200**

Status : **Not Answered**

Chosen Option : **--**

Q.37

The travel time taken by a P wave for a surface focus earthquake to travel along a straight line path through the earth and be recorded at the antipodal point is approximately

- (1) 100 s
- (2) 1200 s
- (3) 2400 s
- (4) 3600 s

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MSQ**
Question ID : **1879801276**
Option 1 ID : **1879805101**
Option 2 ID : **1879805102**
Option 3 ID : **1879805103**
Option 4 ID : **1879805104**
Status : **Not Answered**
Chosen Option : --

Q.38 Extension joints develop perpendicular to the

- (1) minimum principal stress
- (2) intermediate principal stress
- (3) maximum principal stress
- (4) plane of maximum shear stress

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MSQ**
Question ID : **1879801299**
Option 1 ID : **1879805193**
Option 2 ID : **1879805194**
Option 3 ID : **1879805195**
Option 4 ID : **1879805196**
Status : **Answered**
Chosen Option : **3**

Q.39

Mid oceanic ridges are characterised by

- (1) shallow and small magnitude earthquakes
- (2) shallow and intermediate depth, small magnitude earthquakes
- (3) deep and small magnitude earthquakes
- (4) intermediate depth, large magnitude earthquakes

Options 1. 1

- 2. 2
- 3. 3
- 4. 4

Question Type : MSQ

Question ID : 1879801294

Option 1 ID : 1879805173

Option 2 ID : 1879805174

Option 3 ID : 1879805175

Option 4 ID : 1879805176

Status : Answered

Chosen Option : 1

Q.40 The mixing ratio of water vapour in the Earth's atmosphere is approximately

- (1) 0.21
- (2) 0.78
- (3) 0.04
- (4) 0.0093

Options 1. 1

- 2. 2
- 3. 3
- 4. 4

Question Type : MSQ

Question ID : 1879801277

Option 1 ID : 1879805105

Option 2 ID : 1879805106

Option 3 ID : 1879805107

Option 4 ID : 1879805108

Status : Not Answered

Chosen Option : --

Q.41

Where rainfall is higher, the grassland biome steppe grades into

- (1) Savanna
- (2) Tundra
- (3) Prairie
- (4) Alpine Tundra

- Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MSQ**
Question ID : **1879801283**
Option 1 ID : **1879805129**
Option 2 ID : **1879805130**
Option 3 ID : **1879805131**
Option 4 ID : **1879805132**
Status : **Not Answered**
Chosen Option : --

Q.42 Which one of the following parts of the Himalaya contains complete succession of marine rocks ranging in age from the Cambrian to the Cretaceous?

- (1) Sub Himalaya
- (2) Lesser Himalaya
- (3) Higher Himalaya
- (4) Tethys Himalaya

- Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MSQ**
Question ID : **1879801298**
Option 1 ID : **1879805189**
Option 2 ID : **1879805190**
Option 3 ID : **1879805191**
Option 4 ID : **1879805192**
Status : **Not Answered**
Chosen Option : --

Q.43

Which one of the following is the correct sequence of mass wasting in decreasing order of speed?

- (1) Rockfall – Creep – Earth flow
- (2) Earth flow – Creep – Rockfall
- (3) Rockfall – Earth flow– Creep
- (4) Earth flow – Rockfall – Creep

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801291**

Option 1 ID : **1879805161**

Option 2 ID : **1879805162**

Option 3 ID : **1879805163**

Option 4 ID : **1879805164**

Status : **Marked For Review**

Chosen Option : **4**

Q.44 Western boundary ocean currents are stronger in both hemispheres compared to eastern boundary ocean currents due to

- (1) centrifugal force
- (2) pressure gradient force
- (3) Coriolis force
- (4) variation of Coriolis force with latitude

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801275**

Option 1 ID : **1879805097**

Option 2 ID : **1879805098**

Option 3 ID : **1879805099**

Option 4 ID : **1879805100**

Status : **Answered**

Chosen Option : **3**

Q.45

Sr isotope ratios in two cogenetic basalts are found to be significantly different. This implies that

- (1) these basalts had different initial Sr isotope ratios
- (2) these basalts formed in Recent time
- (3) $\frac{Rb}{Sr}$ ratios in these basalts were different at the time of their formation long back in time
- (4) $\frac{Rb}{Sr}$ ratios in these basalts were same but formed at different times

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801285**

Option 1 ID : **1879805137**

Option 2 ID : **1879805138**

Option 3 ID : **1879805139**

Option 4 ID : **1879805140**

Status : **Not Answered**

Chosen Option : --

Q.46 For planet Earth, the

- (1) ocean formed after the plants
- (2) ocean formed after the atmosphere
- (3) atmosphere formed after the ocean
- (4) atmosphere formed after the plants

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801273**

Option 1 ID : **1879805089**

Option 2 ID : **1879805090**

Option 3 ID : **1879805091**

Option 4 ID : **1879805092**

Status : **Answered**

Chosen Option : **3**

Q.47

Strike direction and dip angle are measured in

- (1) horizontal and vertical planes, respectively
- (2) vertical and horizontal planes, respectively
- (3) horizontal planes only
- (4) vertical planes only

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801316**

Option 1 ID : **1879805261**

Option 2 ID : **1879805262**

Option 3 ID : **1879805263**

Option 4 ID : **1879805264**

Status : **Answered**

Chosen Option : 1

Q.48 The solubility of a gas in sea water increases with

- (1) increase of temperature, pressure and salinity
- (2) decrease of temperature, pressure and salinity
- (3) increase of temperature, and decrease of pressure and salinity
- (4) decrease of temperature and salinity, and increase of pressure

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801303**

Option 1 ID : **1879805209**

Option 2 ID : **1879805210**

Option 3 ID : **1879805211**

Option 4 ID : **1879805212**

Status : **Answered**

Chosen Option : 3

Q.49

Over geological time scale, the Earth's global average heatflow

- (1) remained constant
- (2) decreased
- (3) increased
- (4) varied randomly

Options 1. 1

- 2. 2
- 3. 3
- 4. 4

Question Type : **MSQ**

Question ID : **1879801320**

Option 1 ID : **1879805277**

Option 2 ID : **1879805278**

Option 3 ID : **1879805279**

Option 4 ID : **1879805280**

Status : **Not Answered**

Chosen Option : --

Q.50 Oxygenation of the Earth's atmosphere was caused by

- (1) mantle degassing
- (2) the initial planetary accretion
- (3) photosynthetic life
- (4) weathering processes

Options 1. 1

- 2. 2
- 3. 3
- 4. 4

Question Type : **MSQ**

Question ID : **1879801287**

Option 1 ID : **1879805145**

Option 2 ID : **1879805146**

Option 3 ID : **1879805147**

Option 4 ID : **1879805148**

Status : **Not Answered**

Chosen Option : --

Q.1

Match the following:

Clay mineral	Cation exchange capacity
A Kaolinite	D 10 – 40 C mole/kg
B Smectite	E 03 – 20 C mole/kg
C Chlorite	F 80 – 120 C mole/kg

(1) A – D, B – E, C – F

(2) A – E, B – F, C – D

(3) A – E, B – D, C – F

(4) A – D, B – F, C – E

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801355**

Option 1 ID : **1879805417**

Option 2 ID : **1879805418**

Option 3 ID : **1879805419**

Option 4 ID : **1879805420**

Status : **Not Answered**

Chosen Option : --

Q.2

Identify the correct decreasing order of the periodicity of Earth's orbital parameters (E = Eccentricity, P = Precession, O = Obliquity)

(1) $E > P > O$

(2) $P > E > O$

(3) $O > P > E$

(4) $E > O > P$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801359**

Option 1 ID : **1879805433**

Option 2 ID : **1879805434**

Option 3 ID : **1879805435**

Option 4 ID : **1879805436**
Status : **Not Answered**
Chosen Option : --

Q.3 Fair weather electrical field near the Earth's surface is typically about

- (1) 100V/m and upward directed
- (2) 100V/m and downward directed
- (3) 1000V/m and upward directed
- (4) 1000V/m and downward directed

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MSQ**
Question ID : **1879801391**
Option 1 ID : **1879805561**
Option 2 ID : **1879805562**
Option 3 ID : **1879805563**
Option 4 ID : **1879805564**
Status : **Not Answered**
Chosen Option : --

Q.4 Satellite observed outgoing longwave radiation is lower over equatorial latitudes due to

- (1) reduced emission from the Earth's surface.
- (2) absorption due to atmospheric gases.
- (3) persistent cloudiness.
- (4) high insolation.

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MSQ**
Question ID : **1879801393**
Option 1 ID : **1879805569**
Option 2 ID : **1879805570**
Option 3 ID : **1879805571**
Option 4 ID : **1879805572**
Status : **Not Answered**
Chosen Option : --

Q.5

Match the Koeppen's climate types with regions in India

Climate type	Region
A Dfc	P Coromandal coast of Tamil Nadu
B As	Q Ganga plain
C Amw	R Arunachal Pradesh
D Cwg	S West coast of India south of Goa

- (1) A – Q, B – P, C – R, D – S
- (2) A – R, B – P, C – S, D – Q
- (3) A – P, B – S, C – R, D – Q
- (4) A – S, B – R, C – Q, D – P

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MSQ

Question ID : 1879801357

Option 1 ID : 1879805425

Option 2 ID : 1879805426

Option 3 ID : 1879805427

Option 4 ID : 1879805428

Status : Not Answered

Chosen Option : --

Q.6

In the marine food chain, consumer cannot digest and assimilate everything it eats. In this scenario, the paradigm of gross growth efficiency can be understood as proportion of prey carbon converted to

- (1) refractory carbon
- (2) predator carbon
- (3) dissolved carbon
- (4) respired carbon

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MSQ

Question ID : 1879801375

Option 1 ID : 1879805497

Option 2 ID : 1879805498

Option 3 ID : 1879805499

Option 4 ID : 1879805500

Status : Not Answered

Chosen Option : --

Q.7 Assertion (A): The monsoon enters West Bengal and Bangladesh from south and southeast direction.

Reason (R) : Arakan Hills along the coast of Myanmar deflect the monsoon winds of the Bay of Bengal towards the Indian subcontinent

- (1) A is true and R is false
- (2) A is false and R is true
- (3) A and R are true and R is the correct explanation of A
- (4) A and R are true and R is not the correct explanation of A

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MSQ

Question ID : 1879801353

Option 1 ID : 1879805409

Option 2 ID : 1879805410

Option 3 ID : 1879805411

Option 4 ID : 1879805412

Status : Not Answered

Chosen Option : --

Q.8 The Fourier transforms of two functions $f(x)$ and $g(x)$ are in the ratio 1: ω^4 then $g(x) =$

- (1) $f(4x)$
- (2) $f(x^4)$
- (3) $\partial^4 f(x)/\partial x^4$
- (4) $x^4 \partial f(x)/\partial x$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MSQ

Question ID : 1879801342

Option 1 ID : 1879805365

Option 2 ID : 1879805366

Option 3 ID : 1879805367

Option 4 ID : 1879805368

Status : **Not Answered**
Chosen Option : --

Q.9 What is the approximate change in pressure due to a height increase of 200 m in the atmosphere? (Assume air density = 1.0 kg/m^3 , $g = 9.8 \text{ m/s}^2$)

- (1) -0.019 KPa
- (2) -0.19 KPa
- (3) -1.9 KPa
- (4) -19.0 KPa

Options 1. 1

- 2. 2
- 3. 3
- 4. 4

Question Type : **MSQ**
Question ID : **1879801395**
Option 1 ID : **1879805577**
Option 2 ID : **1879805578**
Option 3 ID : **1879805579**
Option 4 ID : **1879805580**
Status : **Not Answered**
Chosen Option : --

Q.10 Sverdrup's theory of large scale wind driven circulation in the oceans explained the existence of

- (1) California current.
- (2) equatorial counter current.
- (3) weaker eastern boundary currents that flow equatorward.
- (4) weaker anticyclonic circulation in the Pacific Ocean.

Options 1. 1

- 2. 2
- 3. 3
- 4. 4

Question Type : **MSQ**
Question ID : **1879801370**
Option 1 ID : **1879805477**
Option 2 ID : **1879805478**
Option 3 ID : **1879805479**
Option 4 ID : **1879805480**
Status : **Not Answered**
Chosen Option : --

Q.11

A reversed refraction profile is carried out over a gently dipping interface separating two media with velocities V_1 and V_2 .

Statement I : The intercept time for the up dip shot is greater than the intercept time for a down dip shot.

Statement II : The apparent up dip velocity is lower than apparent down dip velocity.

Choose the correct option.

- (1) Both statements I and II are true
- (2) Statement I is true and statement II is false
- (3) Both statements are false
- (4) Statement I is false and statement II is true

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801352**

Option 1 ID : **1879805405**

Option 2 ID : **1879805406**

Option 3 ID : **1879805407**

Option 4 ID : **1879805408**

Status : **Not Answered**

Chosen Option : --

Q.12 Which form of dissolved inorganic carbon is most abundant in sea water?

- (1) Carbonate ion
- (2) Carbon dioxide
- (3) Bicarbonate
- (4) Carbonic acid

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801379**

Option 1 ID : **1879805513**

Option 2 ID : **1879805514**

Option 3 ID : **1879805515**

Option 4 ID : **1879805516**

Status : **Marked For Review**

Chosen Option : **2**

Q.13

The total amount of an element dissolved in the ocean is 10^7 kg and its removal rate from seawater is 10^5 g/y. Under steady-state condition, the residence time of the element is

- (1) 10^{15} years
- (2) 10^5 years
- (3) 10^2 years
- (4) $10^{0.5}$ years

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801382**

Option 1 ID : **1879805525**

Option 2 ID : **1879805526**

Option 3 ID : **1879805527**

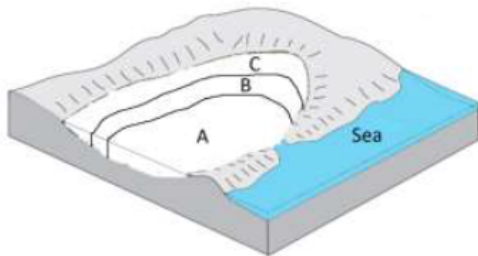
Option 4 ID : **1879805528**

Status : **Not Answered**

Chosen Option : --

Q.14

In a semi-isolated barred basin as shown below, which rock types would form because of evaporative mechanism in regions marked by A, B and C?



- (1) A – Halite, B – Gypsum, C – Carbonates
- (2) A – Gypsum, B – Carbonates, C – Halite
- (3) A – Gypsum, B – Halite, C – Carbonates
- (4) A – Carbonates, B – Gypsum, C – Halite

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801326**

Option 1 ID : **1879805301**

Option 2 ID : **1879805302**

Option 3 ID : **1879805303**

Option 4 ID : **1879805304**

Q.15 Which of the following situation is most detrimental to stability of a dam?

- (1) Horizontal strata
- (2) Beds with gentle upstream dip
- (3) Beds with gentle downstream dip
- (4) Alternate competent and incompetent horizontal beds

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**
Question ID : **1879801332**
Option 1 ID : **1879805325**
Option 2 ID : **1879805326**
Option 3 ID : **1879805327**
Option 4 ID : **1879805328**
Status : **Answered**
Chosen Option : **2**

Q.16 Secondary aerosols are products of

- (1) emission of dust
- (2) particulates emitted from sea
- (3) particles formed in air from gaseous substances
- (4) black carbon

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**
Question ID : **1879801384**
Option 1 ID : **1879805533**
Option 2 ID : **1879805534**
Option 3 ID : **1879805535**
Option 4 ID : **1879805536**
Status : **Not Answered**
Chosen Option : --

Q.17 Marine phosphorite deposits occur in

- (1) deep-sea sediments.
- (2) estuarine sediments.
- (3) manganese nodules.
- (4) near-shore sediments.

Options 1. 1

- 2. 2
- 3. 3
- 4. 4

Question Type : MSQ

Question ID : 1879801381

Option 1 ID : 1879805521

Option 2 ID : 1879805522

Option 3 ID : 1879805523

Option 4 ID : 1879805524

Status : Answered

Chosen Option : 3

Q.18 Match the weather/climate phenomena in Column I with their typical spatial scales (size/wavelength) in Column II.

Column I	Column II
A Cyclone	P 1 km
B Madden-Julian Oscillation	Q 10 km
C Tornado	R 1000 km
D Sea-breeze	S 10000 km

- (1) A-S, B-R, C-P, D-Q
- (2) A-R, B-S, C-P, D-Q
- (3) A-R, B-S, C-Q, D-P
- (4) A-Q, B-P, C-S, D-R

Options 1. 1

- 2. 2
- 3. 3
- 4. 4

Question Type : MSQ

Question ID : 1879801397

Option 1 ID : 1879805585

Option 2 ID : 1879805586
Option 3 ID : 1879805587
Option 4 ID : 1879805588
Status : Not Answered
Chosen Option : --

Q.19 The 1.4 and 1.9 μm water absorption features are obliterated in soils with

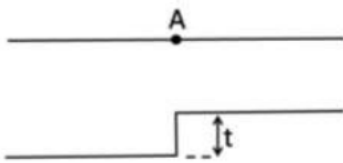
- (1) high organic content and moderately fine texture.
- (2) high iron content and fine texture.
- (3) low organic and low iron content.
- (4) high organic content and moderately coarse texture.

Options 1. 1

2. 2
3. 3
4. 4

Question Type : MSQ
Question ID : 1879801329
Option 1 ID : 1879805313
Option 2 ID : 1879805314
Option 3 ID : 1879805315
Option 4 ID : 1879805316
Status : Not Answered
Chosen Option : --

Q.20 The gravity anomaly recorded at a point A on the edge of a faulted block of material of limited throw t (see figure) is 2.0 milligals.



What would be the maximum gravity anomaly (in milligals) that can be produced by a 2d slab of width 4.0 km, thickness t , having the same density contrast as the faulted block and located at a depth of 2 km (assume the faulted block and 2d slab to be horizontal semi-infinite)?

- (1) 1.6
- (2) 1.2
- (3) 1.0
- (4) 0.8

Options 1. 1

2. 2
3. 3
4. 4

Question Type : **MSQ**
Question ID : **1879801337**
Option 1 ID : **1879805345**
Option 2 ID : **1879805346**
Option 3 ID : **1879805347**
Option 4 ID : **1879805348**
Status : **Not Answered**
Chosen Option : --

Q.21 If N is the Brunt-Väisala frequency, any air parcel with $N^2 < 0$ will be

- (1) statically unstable.
- (2) statically stable.
- (3) statically neutral.
- (4) unaffected by any changes in N .

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MSQ**
Question ID : **1879801385**
Option 1 ID : **1879805537**
Option 2 ID : **1879805538**
Option 3 ID : **1879805539**
Option 4 ID : **1879805540**
Status : **Not Answered**
Chosen Option : --

Q.22 Which one of the following formations shows the maximum negative deflection (assuming $R_w < R_{mf}$) in a SP log response ?

- (1) Thick limestone
- (2) Gas-bearing thick sandstone
- (3) Thin shaly sandstone
- (4) Oil-bearing thick shaly sandstone

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MSQ**

Question ID : 1879801347

Option 1 ID : 1879805385

Option 2 ID : 1879805386

Option 3 ID : 1879805387

Option 4 ID : 1879805388

Status : Not Answered

Chosen Option : --

Q.23 Name the pair of master variables in natural waters

- (1) O₂ and redox potential
- (2) pH and redox potential
- (3) O₂ and Temperature
- (4) Temperature and salinity

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MSQ

Question ID : 1879801383

Option 1 ID : 1879805529

Option 2 ID : 1879805530

Option 3 ID : 1879805531

Option 4 ID : 1879805532

Status : Not Answered

Chosen Option : --

Q.24 Match the following

Sandstone		Tectonic setup	
A	Mature quartz arenite	D	Continental rift valleys
B	Immature wacke	E	Passive continental margins
C	Feldspathic arenite	F	Fore arc basins at convergent plate boundaries

- (1) A-D, B-E, C-F
- (2) A-F, B-E, C-D
- (3) A-E, B-D, C-F
- (4) A-E, B-F, C-D

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801362**

Option 1 ID : **1879805445**

Option 2 ID : **1879805446**

Option 3 ID : **1879805447**

Option 4 ID : **1879805448**

Status : **Answered**

Chosen Option : **4**

Q.25 Analyse the following statements

- A. Isotherms in the Southern Hemisphere are much more regular than in the Northern Hemisphere
- B. In the Northern Hemisphere the isotherms bend sharply southward in July and northward in January over the continents
- C. The warmest temperatures are always found over land but the coldest temperatures are found over ocean

Choose the correct option

- (1) A is true, B and C are false
- (2) A is false, B and C are true
- (3) A and B are true, C is false
- (4) A and C are true, B is false

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801361**

Option 1 ID : **1879805441**

Option 2 ID : **1879805442**

Option 3 ID : **1879805443**

Option 4 ID : **1879805444**

Status : **Not Answered**

Chosen Option : **--**

Q.26

Match Columns I and II

I	II
A The peeling away of layers or sheets of rock	Q Exhumation
B The interface between weathered material and unweathered bed rock	R Exfoliation
C The uncovering of surfaces beneath regolith or younger geological material	S Pseudokarst
D Dark staining of rock surface in arid regions	T Rock varnish
	U Weathering front

- (1) A – R, B – U, C – T, D – Q
- (2) A – S, B – Q, C – R, D – T
- (3) A – S, B – U, C – Q, D – U
- (4) A – R, B – U, C – Q, D – T

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801360**

Option 1 ID : **1879805437**

Option 2 ID : **1879805438**

Option 3 ID : **1879805439**

Option 4 ID : **1879805440**

Status : **Answered**

Chosen Option : **4**

Q.27 **Statement A:** Clean Air Turbulence is associated with standing mountain wave and Jet stream.

Statement B: To be identified as a Jet stream, the speed of wind should be greater than 60 Knots.

- (1) Statement A is false and Statement B is true
- (2) Both Statements A and B are true
- (3) Both Statements A and B are false
- (4) Statement A is true and Statement B is false

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : 1879801388

Option 1 ID : 1879805549

Option 2 ID : 1879805550

Option 3 ID : 1879805551

Option 4 ID : 1879805552

Status : Not Answered

Chosen Option : --

Q.28 Match columns I and II

I	II
A Oxygen isotopes	E Dietary information
B Phosphorus fractions	F Climatic conditions in river catchment
C Carbon isotopes	G Palaeotemperature in ocean
D Chemical Index of alteration	H Palaeoproductivity in oligotrophic lake

(1) A-E, B-F, C-G, D-H

(2) A-F, B-G, C-H, D-E

(3) A-G, B-H, C-E, D-F

(4) A-H, B-E, C-F, D-G

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MSQ

Question ID : 1879801363

Option 1 ID : 1879805449

Option 2 ID : 1879805450

Option 3 ID : 1879805451

Option 4 ID : 1879805452

Status : Not Answered

Chosen Option : --

Q.29 Which one of the following is INCORRECT with regard to Somali current system?

(1) Somali current system consists of large scale anticyclonic circulation cell, the Great whirl

(2) Somali current does not experience seasonal reversal

(3) Intense coastal upwelling occurs with Somali current

(4) Socotra eddy is part of the Somali current system

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MSQ

Question ID : 1879801369

Option 1 ID : 1879805473

Option 2 ID : 1879805474

Option 3 ID : 1879805475

Option 4 ID : 1879805476

Status : Not Answered

Chosen Option : --

Q.30 A long columnar stromatolite is generally indicative of _____ environment.

- (1) subtidal
- (2) intertidal
- (3) supratidal
- (4) tidal channel

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MSQ

Question ID : 1879801328

Option 1 ID : 1879805309

Option 2 ID : 1879805310

Option 3 ID : 1879805311

Option 4 ID : 1879805312

Status : Answered

Chosen Option : 3

Q.31 A strong magnetic anomalous body occurs below a country rock which also exhibits randomly distributed magnetization of moderate magnitude. Which of the following technique is useful for anomaly interpretation?

- (1) Reduction to pole
- (2) Derivative calculations
- (3) upward continuation
- (4) downward continuation

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MSQ

Question ID : 1879801341

Option 1 ID : 1879805361

Option 2 ID : 1879805362

Option 3 ID : 1879805363

Option 4 ID : 1879805364

Q.32 Which one of the following IS NOT required for the formation of tropical cyclone?

- (1) Weak winds
- (2) Coriolis force
- (3) Convective instability
- (4) High precipitation

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**
Question ID : **1879801366**
Option 1 ID : **1879805461**
Option 2 ID : **1879805462**
Option 3 ID : **1879805463**
Option 4 ID : **1879805464**
Status : **Not Answered**
Chosen Option : --

Q.33 Coastal currents in the Bay of Bengal

- (1) are weak throughout the year.
- (2) are not at all generated.
- (3) reverse their flow direction with season and are intense during non-monsoon seasons and eddies are embedded in these currents.
- (4) do not change with season.

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**
Question ID : **1879801371**
Option 1 ID : **1879805481**
Option 2 ID : **1879805482**
Option 3 ID : **1879805483**
Option 4 ID : **1879805484**
Status : **Not Answered**
Chosen Option : --

Q.34

A sandstone comprises 70% Quartz, 5% feldspar, 20% matrix and 5% mica. This sandstone is most likely a

- (1) Quartzarenite.
- (2) Feldspathic arenite.
- (3) Quartzwacke.
- (4) Arkose.

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801335**

Option 1 ID : **1879805337**

Option 2 ID : **1879805338**

Option 3 ID : **1879805339**

Option 4 ID : **1879805340**

Status : **Answered**

Chosen Option : **3**

Q.35

Marine zooplankton facilitates downward carbon flux by

- (1) continuous and copious reproduction.
- (2) regular seasonal hibernation.
- (3) diel vertical migration.
- (4) excessive rapid photosynthesis.

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801374**

Option 1 ID : **1879805493**

Option 2 ID : **1879805494**

Option 3 ID : **1879805495**

Option 4 ID : **1879805496**

Status : **Not Answered**

Chosen Option : **--**

Q.36

The mean latitudinal position of ITCZ over the Indian region in July is

- (1) 8 –10° N
- (2) 18 –20° N
- (3) 25 –28° N
- (4) 38 –40° N

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801398**

Option 1 ID : **1879805589**

Option 2 ID : **1879805590**

Option 3 ID : **1879805591**

Option 4 ID : **1879805592**

Status : **Not Answered**

Chosen Option : --

Q.37 **Statement A:** The Radar pulse width (the length of the time that a radar pulse is transmitted) is of the order of microseconds

Statement B: The Doppler Weather Radar detects the “shift in the phase” of the pulse of energy

- (1) Both Statements A and B are false
- (2) Statement A is true and Statement B is false
- (3) Both Statements A and B are true
- (4) Statement A is false and Statement B is true

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801389**

Option 1 ID : **1879805553**

Option 2 ID : **1879805554**

Option 3 ID : **1879805555**

Option 4 ID : **1879805556**

Status : **Not Answered**

Chosen Option : --

Q.38

Microbial loop is often understood as a temporary, surrogate food chain with heterotrophic bacteria at its base. Identify the more efficient, linear, energy transfer pathway from the following:

- (1) Heterotrophic bacteria → primary omnivore → Heterotrophic nanoflagellate → primary carnivore
- (2) Heterotrophic bacteria → Heterotrophic nanoflagellate → primary omnivore → primary carnivore
- (3) Heterotrophic bacteria → primary carnivore → Heterotrophic nanoflagellate → primary omnivore
- (4) Heterotrophic bacteria → primary omnivore → primary carnivore → Heterotrophic nanoflagellate

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MSQ

Question ID : 1879801376

Option 1 ID : 1879805501

Option 2 ID : 1879805502

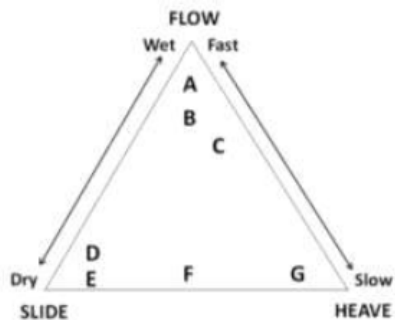
Option 3 ID : 1879805503

Option 4 ID : 1879805504

Status : Not Answered

Chosen Option : --

Q.39 Study the diagram and identify the type of mass movement from the choice given below:



- (1) A is earthflow and G is talus creep
- (2) C is solifluction and F is talus creep
- (3) D is landslide and B is mudflow
- (4) E is rock slide and B is creep

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MSQ

Question ID : 1879801358

Option 1 ID : 1879805429

Option 2 ID : 1879805430

Option 3 ID : 1879805431

Option 4 ID : 1879805432

Status : Not Answered

Chosen Option : --

Q.40 An MT survey was conducted over a fault. If one of the axis of measurement coincides with the fault extension, then the impedance elements Z_{xx} , Z_{yy} , Z_{xy} and Z_{yx} are

(1) $Z_{xx} = Z_{yy} \neq 0$, $Z_{xy} = Z_{yx}$

(2) $Z_{xx} = Z_{yy} = 0$, $Z_{xy} = Z_{yx}$

(3) $Z_{xx} = Z_{yy} = 0$, $Z_{xy} = -Z_{yx}$

(4) $Z_{xx} = -Z_{yy} \neq 0$, $Z_{xy} = Z_{yx}$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MSQ

Question ID : 1879801351

Option 1 ID : 1879805401

Option 2 ID : 1879805402

Option 3 ID : 1879805403

Option 4 ID : 1879805404

Status : Not Answered

Chosen Option : --

Q.41 Consider a one component SiO_2 -system with geologically relevant seven phases. The maximum number of invariant points for this system is:

(1) 35

(2) 21

(3) 15

(4) 20

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MSQ

Question ID : 1879801322

Option 1 ID : 1879805285

Option 2 ID : 1879805286

Option 3 ID : 1879805287

Option 4 ID : 1879805288

Status : Not Answered

Chosen Option : --

Q.42 The radiation emitted by the sea surface in the atmospheric window region may experience alteration and the resulting atmospheric transmission DOES NOT depend on

- (1) vertical distribution of water vapour.
- (2) vertical distribution of oxygen.
- (3) total water vapour content.
- (4) presence of clouds.

Options 1. 1

- 2. 2
- 3. 3
- 4. 4

Question Type : **MSQ**

Question ID : **1879801387**

Option 1 ID : **1879805545**

Option 2 ID : **1879805546**

Option 3 ID : **1879805547**

Option 4 ID : **1879805548**

Status : **Not Answered**

Chosen Option : --

Q.43 The magnetic field at a place is $\sqrt{3}$ times in magnitude to that at the equator. What is the magnetic dip at that place?

- (1) $\tan^{-1}(\sqrt{2})$
- (2) $\tan^{-1}(\sqrt{3})$
- (3) $\tan^{-1}(2\sqrt{2})$
- (4) $\tan^{-1}(2\sqrt{3})$

Options 1. 1

- 2. 2
- 3. 3
- 4. 4

Question Type : **MSQ**

Question ID : **1879801340**

Option 1 ID : **1879805357**

Option 2 ID : **1879805358**

Option 3 ID : **1879805359**

Option 4 ID : **1879805360**

Status : **Not Answered**

Chosen Option : --

Q.44

The travel time in a reflection survey over a reflector of velocity 4.0 km/s underlain by a medium of velocity 2.40 km/s is 1.0 s. What will be the travel time if the underlying medium has a velocity of 6.0 km/s?

- (1) 400 ms
- (2) 650 ms
- (3) 875 ms
- (4) 1.0 s

Options 1. 1

- 2. 2
- 3. 3
- 4. 4

Question Type : **MSQ**

Question ID : **1879801343**

Option 1 ID : **1879805369**

Option 2 ID : **1879805370**

Option 3 ID : **1879805371**

Option 4 ID : **1879805372**

Status : **Not Answered**

Chosen Option : --

Q.45

As per the Stokes' law, the terminal velocity of a rain drop

- (1) increases with size.
- (2) decreases with size.
- (3) is independent of size.
- (4) is zero.

Options 1. 1

- 2. 2
- 3. 3
- 4. 4

Question Type : **MSQ**

Question ID : **1879801394**

Option 1 ID : **1879805573**

Option 2 ID : **1879805574**

Option 3 ID : **1879805575**

Option 4 ID : **1879805576**

Status : **Not Answered**

Chosen Option : --

Q.46

Precambrian-Cambrian boundary in India is marked at the contact of:

- (1) Blaini and Krol Groups
- (2) Krol and Tal Groups
- (3) Cuddapah and Kurnool Groups
- (4) Lower and Middle Vindhyan Groups

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801331**

Option 1 ID : **1879805321**

Option 2 ID : **1879805322**

Option 3 ID : **1879805323**

Option 4 ID : **1879805324**

Status : **Marked For Review**

Chosen Option : 1

Q.47 Near beach wave breaking occurs when

- (1) wave height (h) doubles as the wave approaches the coast.
- (2) wave length (L) decreases as the wave approaches the coast.
- (3) wave height (h) approaches one-seventh ($1/7^{\text{th}}$) of wave length.
- (4) wave length (L) doubles as the wave approaches the coast.

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801372**

Option 1 ID : **1879805485**

Option 2 ID : **1879805486**

Option 3 ID : **1879805487**

Option 4 ID : **1879805488**

Status : **Not Answered**

Chosen Option : --

Q.48

In which of the following class of folds, the curvature of inner and outer arcs is equal?

- (1) Class 1A
- (2) Class 1B
- (3) Class 2
- (4) Class 3

Options 1. 1

- 2. 2
- 3. 3
- 4. 4

Question Type : **MSQ**

Question ID : **1879801324**

Option 1 ID : **1879805293**

Option 2 ID : **1879805294**

Option 3 ID : **1879805295**

Option 4 ID : **1879805296**

Status : **Answered**

Chosen Option : **2**

Q.49 Which of the following mineral deposits are associated with Archaean greenstones?

- (1) Diamond (kimberlitic) deposits
- (2) Porphyry deposits
- (3) Stratiform Pb-Zn deposits
- (4) Cu-Zn massive sulphides, Ni-Cu sulphides, Au-bearing quartz veins

Options 1. 1

- 2. 2
- 3. 3
- 4. 4

Question Type : **MSQ**

Question ID : **1879801327**

Option 1 ID : **1879805305**

Option 2 ID : **1879805306**

Option 3 ID : **1879805307**

Option 4 ID : **1879805308**

Status : **Answered**

Chosen Option : **4**

Q.50

The threshold temperature for all cloud droplets to freeze spontaneously into ice crystals is

- (1) 0° C
- (2) -33° C
- (3) -40° C
- (4) -50° C

Options 1. 1

- 2. 2
- 3. 3
- 4. 4

Question Type : **MSQ**

Question ID : **1879801392**

Option 1 ID : **1879805565**

Option 2 ID : **1879805566**

Option 3 ID : **1879805567**

Option 4 ID : **1879805568**

Status : **Not Answered**

Chosen Option : --

Q.51 What is the correct order of occurrence (older to younger) of the fossils listed below in the Phanerozoic stratigraphic succession of India?

- A. *Fenestella*
- B. *Nummulites*
- C. *Redhichia*
- D. *Macrocephalites*

- (1) C – B – A – D
- (2) A – D – C – B
- (3) B – C – A – D
- (4) C – A – D – B

Options 1. 1

- 2. 2
- 3. 3
- 4. 4

Question Type : **MSQ**

Question ID : **1879801334**

Option 1 ID : **1879805333**

Option 2 ID : **1879805334**

Option 3 ID : **1879805335**

Option 4 ID : **1879805336**

Status : **Not Answered**

Chosen Option : --

Q.52

Match the stratigraphic units in column I with their corresponding ages in column II

I		II	
P	Uttatur Formation	C	Jurassic
Q	Chari Formation	D	Cretaceous
R	Ophioceras Beds	E	Eocene
S	Subathu Formation	F	Devonian
T	Muth Quartzite	G	Triassic

(1) P - C, Q - D, R - E, S - F, T - G

(2) P - D, Q - C, R - F, S - G, T - E

(3) P - E, Q - D, R - G, S - C, T - F

(4) P - D, Q - C, R - G, S - E, T - F

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801333**

Option 1 ID : **1879805329**

Option 2 ID : **1879805330**

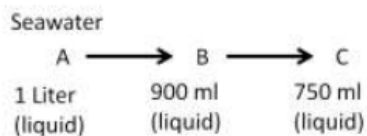
Option 3 ID : **1879805331**

Option 4 ID : **1879805332**

Status : **Answered**

Chosen Option : **4**

Q.53 Seawater having salinity of 35 psu was subjected to icing in steps as shown below



Which is the correct sequence of salinity of A, B and C?

(1) $A > B > C$

(2) $A < B < C$

(3) $A > C > B$

(4) $A < B > C$

Options 1. 1

2. 2

3. 3

Question Type : **MSQ**
Question ID : **1879801368**
Option 1 ID : **1879805469**
Option 2 ID : **1879805470**
Option 3 ID : **1879805471**
Option 4 ID : **1879805472**
Status : **Answered**
Chosen Option : **2**

Q.54 A relative sea level rise CANNOT result from the

- (1) sea level rising while the land surface subsiding at a slower rate.
- (2) sea level remaining stationary while the land surface subsiding.
- (3) sea level rising while the land surface rising at a faster rate.
- (4) sea level falling while the land surface subsiding at a faster rate.

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MSQ**
Question ID : **1879801354**
Option 1 ID : **1879805413**
Option 2 ID : **1879805414**
Option 3 ID : **1879805415**
Option 4 ID : **1879805416**
Status : **Answered**
Chosen Option : **3**

Q.55 Identify relative contribution of autotrophs to net primary production in marine ecosystems

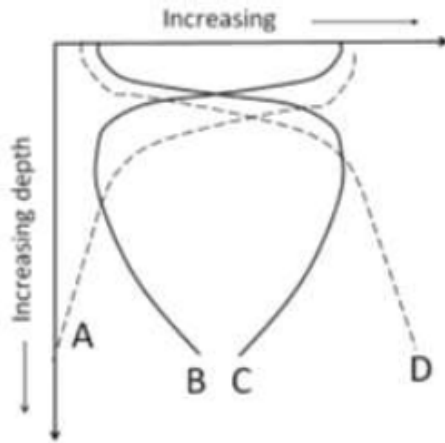
- (1) Coral reef algae > sea grasses > mangroves > marsh plant
- (2) Mangroves > coral reef algae > sea grasses > marsh plant
- (3) Marsh plant > sea grasses > coral reef algae > mangroves
- (4) Sea grasses > coral reef algae > mangroves > marsh plant

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MSQ**
Question ID : **1879801373**
Option 1 ID : **1879805489**

Option 2 ID : 1879805490
Option 3 ID : 1879805491
Option 4 ID : 1879805492
Status : Not Answered
Chosen Option : --

Q.56



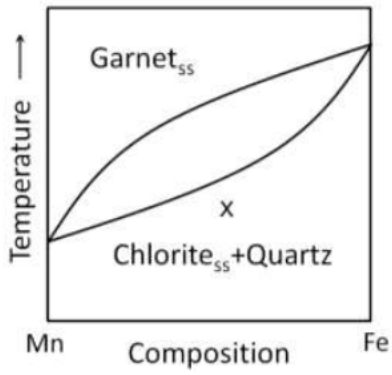
Identify property of profiles A, B, C and D, respectively, in the ocean

- (1) dissolved oxygen, temperature, silicate, nitrate
- (2) dissolved oxygen, temperature, nitrate, silicate
- (3) temperature, dissolved oxygen, nitrate, silicate
- (4) temperature, dissolved oxygen, silicate, nitrate

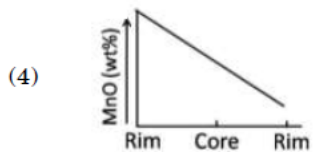
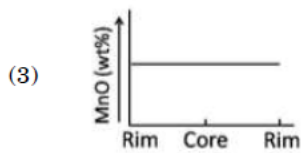
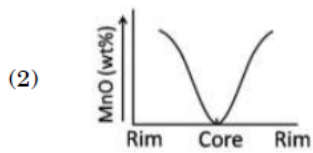
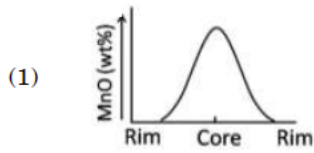
Options 1. 1
2. 2
3. 3
4. 4

Question Type : MSQ
Question ID : 1879801377
Option 1 ID : 1879805505
Option 2 ID : 1879805506
Option 3 ID : 1879805507
Option 4 ID : 1879805508
Status : Not Answered
Chosen Option : --

Q.57



Above is a schematic plot of the reaction of chlorite solid solution with quartz to form garnet solid solution. In case of Rayleigh fractionation during the growth of successive zones in a garnet, which one of the following diagrams correctly depicts the concentration profile of Mn in garnet given the initial composition x ?



Options 1. 1

2. 2

3. 3

4. 4

Question Type : MSQ

Question ID : 1879801321

Option 1 ID : 1879805281

Option 2 ID : 1879805282

Option 3 ID : 1879805283

Option 4 ID : 1879805284

Status : Not Answered

Chosen Option : --

The $^{87}\text{Sr}/^{86}\text{Sr}$ of global seawater has been increasing since ~40 Ma. This increase is attributed to

- (1) the increase in submarine volcanism.
- (2) the higher weathering and erosion in the Himalaya.
- (3) the higher weathering and erosion in the Andes.
- (4) the increase in subduction magmatism.

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801330**

Option 1 ID : **1879805317**

Option 2 ID : **1879805318**

Option 3 ID : **1879805319**

Option 4 ID : **1879805320**

Status : **Not Answered**

Chosen Option : --

Q.59 An alkali basalt with 700 ppm Ba is formed by 1% batch melting of mantle. If the bulk distribution coefficient of Ba is 0.01, what will be the Ba content in the source mantle?

- (1) 1.4 ppm
- (2) 14 ppm
- (3) 700 ppm
- (4) 140 ppm

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801325**

Option 1 ID : **1879805297**

Option 2 ID : **1879805298**

Option 3 ID : **1879805299**

Option 4 ID : **1879805300**

Status : **Not Answered**

Chosen Option : --

Q.60

If U and W are the gravity and magnetic potentials, respectively, due to a mass distribution magnetized uniformly in the direction ϕ , then

- (1) $U \propto \partial W / \partial \phi$
- (2) $W \propto \partial U / \partial \phi$
- (3) $\partial U / \partial z \propto \partial W / \partial \phi$
- (4) $\partial W / \partial z \propto \partial U / \partial \phi$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801338**

Option 1 ID : **1879805349**

Option 2 ID : **1879805350**

Option 3 ID : **1879805351**

Option 4 ID : **1879805352**

Status : **Not Answered**

Chosen Option : --

Q.61 **Statement I:** Electrical current lines bend towards the normal to the interface if the resistivity of the underlying medium is more than the resistivity of the overlying medium.

Statement II: For a homogeneous, isotropic, topographically undulating earth of constant resistivity, the apparent resistivity over a hill will be anomalously low compared to that over a flat surface.

- (1) Both Statements I and II are false
- (2) Statement I is true but Statement II is false
- (3) Statement I is false but Statement II is true
- (4) Both Statements I and II are true

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801348**

Option 1 ID : **1879805389**

Option 2 ID : **1879805390**

Option 3 ID : **1879805391**

Option 4 ID : **1879805392**

Status : **Not Answered**

Chosen Option : --

Q.62

An antisymmetric heat source about the equator creates a warm region in the northern hemisphere and a corresponding cool region in the southern hemisphere. As a result, a long planetary wave develops to the _____ of the heating source, with _____ air motion and _____ circulation associated with surplus heating.

- (1) west, subsiding, anticyclonic
- (2) east, subsiding, cyclonic
- (3) east, rising, anticyclonic
- (4) west, rising, cyclonic

Options 1. 1

- 2. 2
- 3. 3
- 4. 4

Question Type : MSQ

Question ID : 1879801386

Option 1 ID : 1879805541

Option 2 ID : 1879805542

Option 3 ID : 1879805543

Option 4 ID : 1879805544

Status : Not Answered

Chosen Option : --

Q.63

g_1 and g_2 are the gravity values measured at depths z_1 and z_2 , respectively, in a borehole ($z_2 > z_1$). Consider the following statements:

Statement I: $g_2 < g_1$

Statement II: gravity decreases with depth in the Earth's crust

- (1) I and II are true, II explains I
- (2) I and II are true, but II does not explain I
- (3) I is true, II is false
- (4) Both I and II are false

Options 1. 1

- 2. 2
- 3. 3
- 4. 4

Question Type : MSQ

Question ID : 1879801339

Option 1 ID : 1879805353

Option 2 ID : 1879805354

Option 3 ID : 1879805355

Option 4 ID : 1879805356

Status : Marked For Review

Chosen Option : 1

Q.64

Which one of the following statements is INCORRECT?

- (1) Water vapour has more global warming potential than CO₂
- (2) Volatile organic compounds are not responsible for ozone production in troposphere
- (3) N₂O has more global warming potential than CO₂
- (4) NO_x and N₂O are potential source of nitrogenous species in troposphere and stratosphere, respectively

Options 1. 1

2. 2
3. 3
4. 4

Question Type : MSQ

Question ID : 1879801367

Option 1 ID : 1879805465

Option 2 ID : 1879805466

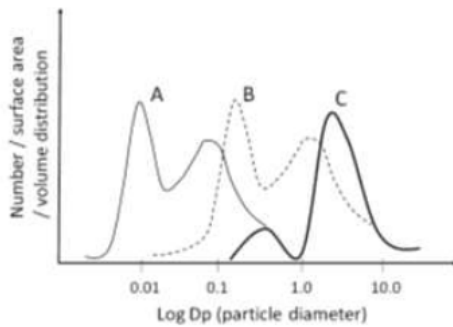
Option 3 ID : 1879805467

Option 4 ID : 1879805468

Status : Not Answered

Chosen Option : --

Q.65



In the above figure, the curves A, B and C denote ____, __ and __ distributions, respectively.

- (1) surface area, number and volume
- (2) number, volume and surface area
- (3) number, surface area and volume
- (4) surface area, volume and number

Options 1. 1

2. 2
3. 3
4. 4

Question Type : MSQ

Question ID : 1879801364

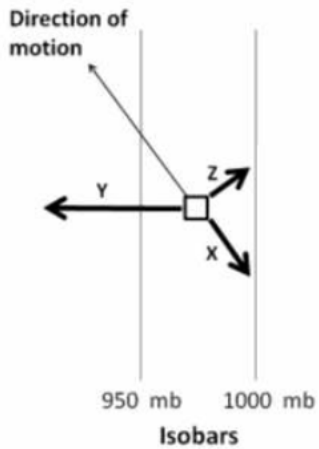
Option 1 ID : 1879805453

Option 2 ID : 1879805454

Option 3 ID : 1879805455

Option 4 ID : 1879805456

Q.66 As wind in the lower atmosphere moves over the Earth's surface three forces X, Y and Z shown in the diagram operate on the air mass. If these forces are pressure gradient force (P), Frictional force (F) and Coriolis force (C), find the correct match



- (1) X - P, Y - C, Z - F
- (2) X - F, Y - C, Z - P
- (3) X - F, Y - P, Z - C
- (4) X - C, Y - P, Z - F

- Options**
- 1. 1
 - 2. 2
 - 3. 3
 - 4. 4

Question Type : **MSQ**
Question ID : **1879801356**
Option 1 ID : **1879805421**
Option 2 ID : **1879805422**
Option 3 ID : **1879805423**
Option 4 ID : **1879805424**
Status : **Not Answered**
Chosen Option : --

Q.67 At what time of the day the near-surface air temperature will be the highest?

- (1) Immediately after sunrise
- (2) When the sun is directly overhead
- (3) When the incoming solar and outgoing longwave radiation balance each other
- (4) Immediately before sunset

- Options**
- 1. 1
 - 2. 2
 - 3. 3
 - 4. 4

Question Type : **MSQ**
Question ID : **1879801390**
Option 1 ID : **1879805557**
Option 2 ID : **1879805558**
Option 3 ID : **1879805559**
Option 4 ID : **1879805560**
Status : **Not Answered**
Chosen Option : --

Q.68 In a continental lithosphere with a 20 km thick crustal layer containing radiogenic heat source concentrate of $1 \mu\text{W}/\text{m}^2$ and surface heat flow of $40 \text{ mW}/\text{m}^2$ is uniformly stretched by a factor $\beta = 2$. The surface heat flow (in mW/m^2) of the stretched lithosphere will be

- (1) 40
- (2) 50
- (3) 60
- (4) 80

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MSQ**
Question ID : **1879801350**
Option 1 ID : **1879805397**
Option 2 ID : **1879805398**
Option 3 ID : **1879805399**
Option 4 ID : **1879805400**
Status : **Not Answered**
Chosen Option : --

Q.69 Forming agent, landform and processes are given in columns A, B and C, respectively

	A	B	C
P	Glacial	Moraine	Erosional
Q	Peri-glacial	Horn	Frost Heave
R	Glacio-fluvial	Pingo	Depositional
S	Glacial	Kame	Erosional

Identify the correct match

- (1) A – P, B – Q, C – S
- (2) A – Q, B – R, C – Q
- (3) A – Q, B – S, C – P
- (4) A – S, B – R, C – Q

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801365**

Option 1 ID : **1879805457**

Option 2 ID : **1879805458**

Option 3 ID : **1879805459**

Option 4 ID : **1879805460**

Status : **Answered**

Chosen Option : 1

Q.70 A sandstone formation has porosities varying from 10 to 30%. The 100% water saturated sand with 10% porosity has a formation resistivity of $0.5 \Omega\text{m}$. What is the hydrocarbon saturation (%) in the sand formation with 20% porosity and formation resistivity of $50 \Omega\text{m}$ (assume $a = 1$ and $n = 2$)?

(1) 65

(2) 75

(3) 85

(4) 95

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MSQ**

Question ID : **1879801346**

Option 1 ID : **1879805381**

Option 2 ID : **1879805382**

Option 3 ID : **1879805383**

Option 4 ID : **1879805384**

Status : **Not Answered**

Chosen Option : --

Q.71

Match the ichnofossil assemblage (column I) with its marine environment (column II).

Column I	Column II
A Cruziana	E Abyssal
B Nereites	F Bathyal
C Skolithos	G Littoral
D Zoophycos	H Sublittoral

(1) A - H, B - E, C - G, D - F

(2) A - H, B - F, C - G, D - E

(3) A - E, B - F, C - H, D - G

(4) A - F, B - G, C - E, D - H

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MSQ

Question ID : 1879801336

Option 1 ID : 1879805341

Option 2 ID : 1879805342

Option 3 ID : 1879805343

Option 4 ID : 1879805344

Status : Not Answered

Chosen Option : --

Q.72 Rise in atmospheric CO₂ will NOT lead to

(1) ocean acidification

(2) ocean warming

(3) decrease in [CO₃²⁻] in ocean

(4) decrease in efficiency of biological pump

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MSQ

Question ID : 1879801380

Option 1 ID : 1879805517

Option 2 ID : 1879805518

Option 3 ID : **1879805519**
Option 4 ID : **1879805520**
Status : **Not Answered**
Chosen Option : --

Q.73 Which one of the following occurs during El Nino?

- (1) Stronger Trade Winds
- (2) Warmer than normal sea surface temperature in the western Pacific Ocean
- (3) Reduced upwelling along Peru coast
- (4) More monsoon rainfall in India

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MSQ**
Question ID : **1879801399**
Option 1 ID : **1879805593**
Option 2 ID : **1879805594**
Option 3 ID : **1879805595**
Option 4 ID : **1879805596**
Status : **Answered**
Chosen Option : **2**

Q.74 Which one of the following types of folds defines the geometry of a sheath fold?

- (1) Plane – Noncylindrical
- (2) Nonplane – Noncylindrical
- (3) Plane – Cylindrical
- (4) Nonplane – Cylindrical

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MSQ**
Question ID : **1879801323**
Option 1 ID : **1879805289**
Option 2 ID : **1879805290**
Option 3 ID : **1879805291**
Option 4 ID : **1879805292**
Status : **Answered**
Chosen Option : **4**

Q.75

In a transient electromagnetic (TEM) survey, the maximum transient pulse of a step signal is recorded at 10 m depth at 10 μ s time. The time (in μ s) needed for the pulse to reach 20 m depth is:

- (1) 40
- (2) 20
- (3) 16
- (4) 24

Options 1. 1

- 2. 2
- 3. 3
- 4. 4

Question Type : **MSQ**

Question ID : **1879801349**

Option 1 ID : **1879805393**

Option 2 ID : **1879805394**

Option 3 ID : **1879805395**

Option 4 ID : **1879805396**

Status : **Not Answered**

Chosen Option : --

Q.76 An earthquake is recorded at 4 stations which are equidistant from double-couple source in the 4 cardinal directions. Which one of the following remains constant at all the stations?

- (1) Seismic moment
- (2) Amplitude of displacement pulse
- (3) Duration of displacement pulse
- (4) Seismic energy of signal

Options 1. 1

- 2. 2
- 3. 3
- 4. 4

Question Type : **MSQ**

Question ID : **1879801345**

Option 1 ID : **1879805377**

Option 2 ID : **1879805378**

Option 3 ID : **1879805379**

Option 4 ID : **1879805380**

Status : **Not Answered**

Chosen Option : --

Q.77

The Tropical Easterly Jet over India is observed at ____ level during ____ period over ____ latitudes.

- (1) 200 hPa; October to November; 25 – 30°N
- (2) 200 hPa; June to September; 10 – 15°N
- (3) 100 hPa; October to November; 25 – 30°N
- (4) 100 hPa; June to September; 10 – 15°N

Options 1. 1

- 2. 2
- 3. 3
- 4. 4

Question Type : **MSQ**
Question ID : **1879801400**
Option 1 ID : **1879805597**
Option 2 ID : **1879805598**
Option 3 ID : **1879805599**
Option 4 ID : **1879805600**
Status : **Not Answered**
Chosen Option : --

Q.78 The most general relationship between atmospheric circulation and vorticity is given by

- (1) Gauss-Divergence theorem
- (2) Helmholtz theorem
- (3) Stokes theorem
- (4) Kelvin circulation theorem

Options 1. 1

- 2. 2
- 3. 3
- 4. 4

Question Type : **MSQ**
Question ID : **1879801396**
Option 1 ID : **1879805581**
Option 2 ID : **1879805582**
Option 3 ID : **1879805583**
Option 4 ID : **1879805584**
Status : **Not Answered**
Chosen Option : --

Q.79

In a homogeneous isotropic elastic medium, the P-wave travels 1.5 times faster than the S-wave. The ratio (λ/μ) of the Lamé's constant λ and μ will be

- (1) 0.5
- (2) 0.25
- (3) 0.75
- (4) 1.0

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MSQ**
Question ID : **1879801344**
Option 1 ID : **1879805373**
Option 2 ID : **1879805374**
Option 3 ID : **1879805375**
Option 4 ID : **1879805376**
Status : **Not Answered**
Chosen Option : --

Q.80 Which one of the following gas has the highest solubility in water?

- (1) Nitrous oxide
- (2) Oxygen
- (3) Nitrogen
- (4) Carbon dioxide

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MSQ**
Question ID : **1879801378**
Option 1 ID : **1879805509**
Option 2 ID : **1879805510**
Option 3 ID : **1879805511**
Option 4 ID : **1879805512**
Status : **Not Answered**
Chosen Option : --