National Testing Agency

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Environmental Science

Group Number :	1
Group Id :	12820611
Group Maximum Duration :	0
Group Minimum Duration :	180
Revisit allowed for view? :	No
Revisit allowed for edit? :	No
Break time:	0
Group Marks:	100

PART A

Section Id :	12820619
Section Number :	1
Section type :	Online
Mandatory or Optional:	Mandatory
Number of Questions:	75
Number of Questions to be attempted:	75
Section Marks:	100
Display Number Panel:	Yes
Group All Questions:	No

Sub-Section Number:	1
Sub-Section Id:	12820627
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 128206582 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What is physical carrying capacity?

A   Refers to the number of facilities available
B   The limits of use in the ecosystem
C   The point at which the investment needed to sustain environmental quality becomes prohibitive
D   The point at which the visitor feels that additional people in the environment would spoil the experience

Options :

1282062293. A

1282062294. B

1282062295. C

1282062296. D

Question Number : 2 Question Id : 128206583 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A species of whales that has fully recovered its numbers is the

A   Blue whale
B   Humpback whale
C   Pacific gray whale
D   Sperm whale

Options :

1282062297. A

1282062298. B

1282062299. C

1282062300. D

Question Number : 3 Question Id : 128206584 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The stage in which the biological processes is used to purify water in a wastewater treatment plants is called

A.   Biochemical reduction
B.   Primary sewage treatment
C.   Secondary sewage treatment
D.   Wastewater reduction

Options :

1282062301. A

1282062302. B

1282062303. C

1282062304. D

Question Number : 4 Question Id : 128206585 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Name the process in which a harmful chemical enters the food chain and gets concentrated at each level in the food chain

A.   Bio-concentration
B.   Bio-expansion
C.   Bio-magnification
D.   Biological pollution

Options :

1282062305. A

1282062306. B

1282062307. C

1282062308. D

Question Number : 5 Question Id : 128206586 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Groundwater mining in coastal areas can result into

A.   Decrease in the salinity of groundwater
B.   Decrease in the toxicity of groundwater
C.   Increase in the salinity of groundwater
D.   Increase in the water table

Options :

1282062309. A

1282062310. B

1282062311. C

1282062312. D

Question Number : 6 Question Id : 128206587 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The most serious environmental effect posed by hazardous solid wastes is

A.   Air pollution
B.   Contamination of groundwater
C.   Destruction of habitat
D.   Increased use of land for landfills

Options :

1282062313. A

1282062314. B

1282062315. C

1282062316. D

Question Number : 7 Question Id : 128206588 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In statistics out of 100, marks of 21 students in final exams are as 90, 95, 95, 94, 90, 85, 84, 83, 85, 81, 92, 93, 82, 78, 79, 81, 80, 82, 85, 76, 85 then mode of data is

A. 81
B. 85
C. 90
D. 95

Options :

1282062317. A

1282062318. B

1282062319. C

1282062320. D

Question Number : 8 Question Id : 128206589 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Our bones and teeth are generally made of

A. Chloropetite
B. Fluoropetite
C. Hydrolith
D. Tricalcium phosphate

Options :

1282062321. A

1282062322. B

1282062323. C

1282062324. D

Question Number : 9 Question Id : 128206590 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In plant biotechnology, polyethylene glycol (PEG) is used in

A. Cell culture preparation
B. Hardening
C. Protoplast fusion
D. Protoplast isolation

Options :

1282062325. A

1282062326. B

1282062327. C

1282062328. D

Question Number : 10 Question Id : 128206591 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Genetic engineering is possible, because

A.   Restriction endonucleases purified from bacteria can be used in vitro
B.   The phenomenon of transduction in bacteria is well understood
C.   We can cut DNA at specific sites by endonucleases like DNAase
D.   We can see DNA by electron microscope

Options :

1282062329. A

1282062330. B

1282062331. C

1282062332. D

Question Number : 11 Question Id : 128206592 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The first transgenic plant was

A.   Cotton
B.   Flax
C.   Pea
D.   Tobacco

Options :

1282062333. A

1282062334. B

1282062335. C

1282062336. D

Question Number : 12 Question Id : 128206593 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The chemical used for destroying Fungi in water tanks is

A.   Copper sulphate
B.   Magnesium sulphate
C.   Nitric acid
D.   Zinc sulphate

Options :

1282062337. A

1282062338. B

1282062339. C

1282062340. D

Question Number : 13 Question Id : 128206594 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Main function of lenticel is

A. Bleeding
B. Gaseous exchange
C. Guttation
D. Transpiration

Options :

1282062341. A

1282062342. B

1282062343. C

1282062344. D

Question Number : 14 Question Id : 128206595 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Chlorosis in plants occurs due to

A. Absorption of yellow pigment from the soil
B. Deficiency of Mg and Fe in the soil
C. High sunlight intensity
D. Low sunlight intensity

Options :

1282062345. A

1282062346. B

1282062347. C

1282062348. D

Question Number : 15 Question Id : 128206596 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The term protoplasm was coined by

A. Robert Hooke
B. Dujardin
C. Robert Brown
D. Purkinje

Options :

1282062349. A

1282062350. B

1282062351. C

1282062352. D

Question Number : 16 Question Id : 128206597 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which among the following multilateral environment agreements (MEAs) is NOT correctly paired with the respective issue it deals with?

A.   Basel Convention of 1989 – Regulation of transboundary movement, transit, handling and use of Living Modified Organisms
B.   Bonn Convention of 1979 – The conservation of Migratory Species
C.   Montreal Protocol of 1987 – Ozone Depleting Substances
D.   Rotterdam Convention of 1998 – Consensual International Trade in certain Hazardous Chemicals and Pesticides

Options :

1282062353. A

1282062354. B

1282062355. C

1282062356. D

Question Number : 17 Question Id : 128206598 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Lincoln index is used to measure

A.   Population density
B.   Population mortality rate
C.   Population natality rate
D.   Population size

Options :

1282062357. A

1282062358. B

1282062359. C

1282062360. D

Question Number : 18 Question Id : 128206599 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The greatest problem of water conservation is to reduce amount of

A. Precipitation
B. Runoff
C. Groundwater
D. Evaporation

Options :

1282062361. A

1282062362. B

1282062363. C

1282062364. D

Question Number : 19 Question Id : 128206600 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The percentage of forest cover recommended by the National Forest Policy (1988) is

A. 33% for plains and 67% for hills
B. 25% for plains and 75% for hills
C. 20% for plains and 80% for hills
D. 30% for plains and 70% for hills

Options :

1282062365. A

1282062366. B

1282062367. C

1282062368. D

Question Number : 20 Question Id : 128206601 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following areas in India is a biodiversity hotspot

A. Sunderbans
B. Western Ghats
C. Eastern Ghats
D. Satpura forest

Options :

1282062369. A

1282062370. B

1282062371. C

1282062372. D

Question Number : 21 Question Id : 128206602 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What does the abbreviation GPS stand for?

A. Geographical Positioning System
B. Global Point Selection
C. Geographical Point Software
D. Global Positioning System

Options :

1282062373. A

1282062374. B

1282062375. C

1282062376. D

Question Number : 22 Question Id : 128206603 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which form of scattering in the atmosphere is NOT dependent on wavelength?

A. Mie
B. Non-Selective
C. Rayleigh
D. None of the above

Options :

1282062377. A

1282062378. B

1282062379. C

1282062380. D

Question Number : 23 Question Id : 128206604 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Out of the following materials which is used to determine the hardness of the mineral 'Calcite'

A Finger nail
B Steel blade
C Copper coin
D Glass rod

Options :

1282062381. A

1282062382. B

1282062383. C

1282062384. D

Question Number : 24 Question Id : 128206605 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Hydrolysis of orthoclase resulted in the formation of

A. Kaolinite
B. Shale
C. Limestone
D. Orthoclase

Options :

1282062385. A

1282062386. B

1282062387. C

1282062388. D

Question Number : 25 Question Id : 128206606 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In the sedimentary rock Arkose the mineral that give reddish color is called

A. Orthoclase
B. Calcite
C. Plagioclase
D. Quartz

Options :

1282062389. A

1282062390. B

1282062391. C

1282062392. D

Question Number : 26 Question Id : 128206607 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The correct IUPAC name for $[FeF_4(OH_2)_2]^-$ is

A diaquatetrafluoroferrate(I) ion
B diaquatetrafluoroiron(III) ion
C diaquatetrafluoroferrate(III) ion
D diaquatetrafluoroiron(I) ion

Options :

1282062393. A

1282062394. B

1282062395. C

1282062396. D

Question Number : 27 Question Id : 128206608 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In which one of the followings, the oxidation state of nitrogen given wrong?

A $NaNO_2$, +3
B N_2O_3, +3
C N_2H_4, +2
D HNO_3, +5

Options :

1282062397. A

1282062398. B

1282062399. C

1282062400. D

Question Number : 28 Question Id : 128206609 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Relatively low concentrations of SO$_2$ in the ambient air are found in north India, primarily due to

A   its adsorption onto the calcium dominated dust particles
B   less number of sulphur emission activities
C   high air temperature
D   All of the above

Options :

1282062401. A

1282062402. B

1282062403. C

1282062404. D

Question Number : 29 Question Id : 128206610 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The sound intensity (I) at any radial distance (r) from the point source is related as

A   I is inversely proportional to r
B   I is inversely proportional to r^2
C   I is inversely proportional to r^3
D   I is inversely proportional to r^4

Options :

1282062405. A

1282062406. B

1282062407. C

1282062408. D

Question Number : 30 Question Id : 128206611 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If f $(a + b - x) = f(x)$, then $\int_a^b x\, f(x)dx$ is equal to

A. $\frac{a+b}{2} \int_a^b f(b-x)dx$

B. $\frac{a+b}{2} \int_a^b f(b+x)dx$

C. $\frac{b-a}{2} \int_a^b f(x)dx$

D. $\frac{a+b}{2} \int_a^b f(x)dx$

Options :

1282062409. A

1282062410. B

1282062411. C

1282062412. D

Question Number : 31 Question Id : 128206612 Question Type : MCQ Option Shuffling : No Display Questic
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If a line makes angles α, β and γ with the axes respectively, then cos 2α + cos 2β + cos 2γ is equal to

A   2
B   -1
C   1
D   -2

Options :

1282062413. A

1282062414. B

1282062415. C

1282062416. D

Question Number : 32 Question Id : 128206613 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following statements about the function $f(x) = x.sin(1/x)$ for $x \neq 0$ and $f(0)=0$ is correct?

A.   The function is continuous at x=0 but not derivable at x=0
B.   The function is continuous and derivable at x=0
C.   The function is neither continuous nor derivable at x=0
D.   The function is derivable at x=0 but not continuous at x=0

Options :

1282062417. A

1282062418. B

1282062419. C

1282062420. D

Question Number : 33 Question Id : 128206614 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The squares of the times of revolution of the planets are proportional to the cubes of their mean distances from the sun. This statement is known as which of the following laws?

A.   Kepler's third law of planetary motion
B.   Kepler's second law of planetary motion
C.   Kepler's first law of planetary motion
D.   Ptolemy's law of planetary motion

Options :

1282062421. A

1282062422. B

1282062423. C

1282062424. D

Question Number : 34 Question Id : 128206615 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If the magnitudes of the vectors A, B and C are 12, 5 and 13 units, respectively and $\vec{A} + \vec{B} = \vec{C}$, the angle between vector A and B is

A.   0
B.   π
C.   π/2
D.   π/4

Options :

1282062425. A

1282062426. B

1282062427. C

1282062428. D

Question Number : 35 Question Id : 128206616 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The internal energy of a mono atomic ideal gas molecule is

A.   Partly kinetic and partly potential
B.   Totally kinetic
C.   Totally potential
D.   Neither kinetic nor potential

Options :

1282062429. A

1282062430. B

1282062431. C

1282062432. D

Question Number : 36 Question Id : 128206617 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Coloured glasses appeared white after being crushed to a fine powder because of which phenomenon of light

A.   Interference
B.   Diffraction
C.   Refraction
D.   Reflection

Options :

1282062433. A

1282062434. B

1282062435. C

1282062436. D

Question Number : 37 Question Id : 128206618 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If a simple pendulum is taken to a place where g decreases by 2%, then the time period

A. Increases by 2%
B. Increases by 1%
C. Increases by 4%
D. Decreases by 1%

Options :

1282062437. A

1282062438. B

1282062439. C

1282062440. D

Question Number : 38 Question Id : 128206619 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A star which appears blue will be

A. Much hotter than sun
B. As hot as sun
C. Colder than sun
D. Very cold indeed

Options :

1282062441. A

1282062442. B

1282062443. C

1282062444. D

Question Number : 39 Question Id : 128206620 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Oil floating on water looks coloured due to interference of light. What should be the magnitude of the thickness of the oil layer so that this effect is observed?

A. 10 Å
B. 100 Å
C. 10000 Å
D. 1 mm

Options :

1282062445. A

1282062446. B

1282062447. C

1282062448. D

Question Number : 40 Question Id : 128206621 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What scientific law requires that subscripts in formulae should never be changed while balancing a chemical equation?

A.   Law of Multiple Proportions
B.   Law of Definite Proportions
C.   Law of Conservation of Matter
D.   Law of Conservation of Matter and Energy

Options :

1282062449. A

1282062450. B

1282062451. C

1282062452. D

Question Number : 41 Question Id : 128206622 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which one of the following oxides has the most basic character?

A. Al_2O_3
B. BeO
C. MgO
D. CaO

Options :

1282062453. A

1282062454. B

1282062455. C

1282062456. D

Question Number : 42 Question Id : 128206623 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Following square-planar complexes are what kind of isomers?
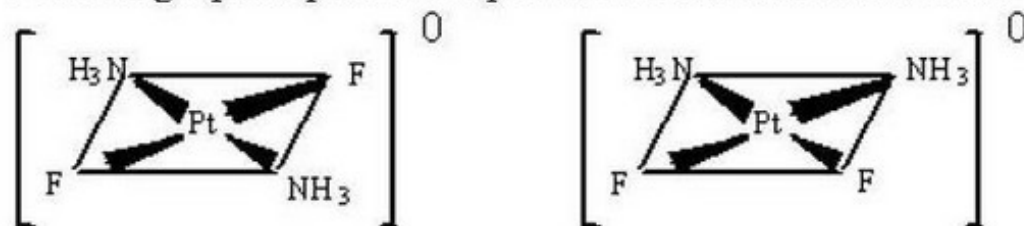
A.   Coordination
B.   Ionization
C.   Optical
D.   Geometric

Options :

1282062457. A

1282062458. B

1282062459. C

1282062460. D

Question Number : 43 Question Id : 128206624 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The iron obtained from the blast furnace containing carbon is called

A.   steel
B.   pig iron
C.   cast iron
D.   molten iron

Options :

1282062461. A

1282062462. B

1282062463. C

1282062464. D

Question Number : 44 Question Id : 128206625 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

$$\begin{vmatrix} a+x & y & z \\ x & a+y & z \\ x & y & a+z \end{vmatrix} =$$

A. $(a+x+y+z)$
B. $a^2(x+y+z)$
C. $a^2(a+x+y+z)$
D.   None of the above

Options :

1282062465. A

1282062466. B

1282062467. C

1282062468. D

Question Number : 45 Question Id : 128206626 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

$$\int e^x \left[\frac{1}{x^2} - \frac{1}{x^3} \right] =$$

A. $\frac{e^x}{x^2} + C$
B. $-e^x/x^2 + C$
C. $e^{2x}/x^2 + C$
D. $\frac{e^x}{x} + C$

Options :

1282062469. A

1282062470. B

1282062471. C

1282062472. D

Question Number : 46 Question Id : 128206627 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The solution of the differential equation $\frac{dy}{dx} = e^{x+y} + x^2 . e^y$ is

A. $e^x + e^{-y}$
B. $e^x + e^{-y} + x^3/3$
C. $e^{-x} + e^y + x^3/3$
D. $e^x + e^{-y} - x^3/3$

Options :
1282062473. A
1282062474. B
1282062475. C
1282062476. D

Question Number : 47 Question Id : 128206628 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Two adjacent sides of a parallelogram are represented by the vectors $\vec{a} = (3\,i + j + 4\,k)$ and $\vec{b} = (3\,i + j + 4\,k)$. The area of the parallelogram is

A. $\sqrt{35}$ Square units
B. $\sqrt{42}$ Square units
C. 6 Square units
D. $\sqrt{29}$ Square units

Options :
1282062477. A
1282062478. B
1282062479. C
1282062480. D

Question Number : 48 Question Id : 128206629 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The range of $f(x) = x + 1/x$ is

A. [-2,2]
B. [2,∞)
C. (-∞, -2]
D. None of the above

Options :
1282062481. A
1282062482. B
1282062483. C
1282062484. D

Question Number : 49 Question Id : 128206630 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The internal energy of an ideal gas is represented by U = (m/M) × C_v × T, where m, M, C_v and T are mass, molar mass, specific heat at constant volume and temperature of gas, respectively. Which of the following options is NOT correct regarding U?

A. U = m/M (RT/ γ−1); where R = gas constant and γ = ratio of specific heats
B. U = PV/(γ−1); where P and V are pressure and volume of ideal gas at temperature T and γ = ratio of specific heats
C. U = m/M (PV/γ−1); where P and V are pressure and volume of ideal gas at temperature T and γ = ratio of specific heats
D. None of the above

Options :

1282062485. A

1282062486. B

1282062487. C

1282062488. D

Question Number : 50 Question Id : 128206631 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If k is defined as Boltzmann's constant for an ideal gas of mass 'm' at temperature T, then which of the following option is NOT correct?

A. The most probable velocity $= \sqrt{2kT/m}$

B. The mean velocity $= \sqrt{8kT/\pi m}$

C. The root mean square velocity $= \sqrt{3kT/m}$

D. None of the above

Options :

1282062489. A

1282062490. B

1282062491. C

1282062492. D

Sub-Section Number:	2
Sub-Section Id:	12820628
Question Shuffling Allowed :	Yes

Question Number : 51 Question Id : 128206632 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Which one of the following is NOT correctly matched pair

A.   Permafrost – Tundra
B.   Evergreen trees – Coniferous forest
C.   Acacia trees – Savanna
D.   Epiphytes - Prairie

Options :

1282062493. A

1282062494. B

1282062495. C

1282062496. D

Question Number : 52 Question Id : 128206633 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Fossil stromatolites containing filamentous structures resemble

A   Glossopteris
B   Gangomopteris
C   Cyanobacteria
D   Sea weeds

Options :

1282062497. A

1282062498. B

1282062499. C

1282062500. D

Question Number : 53 Question Id : 128206634 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Which of the following two criteria have to be met in order to qualify as a 'biodiversity hotspot' on the world hotspots map?

(i)   The region must contain at least 0.5 percent or 1500 species of vascular plants as endemic species.

(ii)   The region has to have lost at least 70 percent of its primary vegetation.

Choose the correct option.

A.   Only (a)
B.   Only (b)
C.   Both (a) and (b)
D.   Neither (a) nor (b)

Options :

1282062501. A

1282062502. B

1282062503. C

1282062504. D

Question Number : 54 Question Id : 128206635 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Since 1600AD, the most recorded extinctions have occurred among

A.   Amphibians
B.   Birds
C.   Flowering plants
D.   Mammals

Options :

1282062505. A

1282062506. B

1282062507. C

1282062508. D

Question Number : 55 Question Id : 128206636 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

The spectral region of the electromagnetic radiation which passes through the atmosphere without much attenuation is known as

A.   Atmospheric window
B.   Black hole
C.   Ozone hole
D.   Ozone window

Options :

1282062509. A

1282062510. B

1282062511. C

1282062512. D

Question Number : 56 Question Id : 128206637 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

If f(x) and g(x) are polynomial functions such that g(x) ≠ 0, and degree of f(x) > degree of g(x), then f(x)/g(x) is called

A   an improper rational function
B   an improper irrational function
C   a proper rational function
D   a proper irrational function

Options :

1282062513. A

1282062514. B

1282062515. C

1282062516. D

Question Number : 57 Question Id : 128206638 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Let R be a relation on the set N of all natural numbers, defined by a R b ↔ a is a factor b. Then, R is

A.   reflexive and symmetric but not transitive
B.   reflexive and transitive but not symmetric
C.   symmetric and transitive but not reflexive
D.   an equivalence relation

Options :

1282062517. A

1282062518. B

1282062519. C

1282062520. D

Question Number : 58 Question Id : 128206639 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

A plane passes through the point P(1, 1, 1) and is perpendicular to each of the planes $x + 2y + 3z = 9$ and $2x - 3y + 4z = 0$. The equation of the plane is

A. $2x + 17y - 7z = 12$
B. $17x + 2y - 7z = 12$
C. $7x + 2y - 17z = 12$
D.   None of the above

Options :

1282062521. A

1282062522. B

1282062523. C

1282062524. D

Question Number : 59 Question Id : 128206640 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Which part would be most suitable for raising virus-free plants for micropropagation

A.   Bark
B.   Meristem
C.   Node
D.   Vascular tissue

Options :

1282062525. A

1282062526. B

1282062527. C

1282062528. D

Correct Marks : 2 Wrong Marks : 0

A spring with a mass of 2 kg has natural length 0.5 m. A force of 25.6 N is required to maintain it stretched to a length of 0.7 m. If the spring is stretched to a length of 0.7 m and then released with initial velocity zero, the position of the mass at any time 't' will be

A. $x(t) = 3/5 \cos 6t$
B. $x(t) = 1/5 \cos 8t$
C. $x(t) = 3/5 \cos 8t$
D. $x(t) = 1/5 \cos 6t$

Options :

1282062529. A

1282062530. B

1282062531. C

1282062532. D

Correct Marks : 2 Wrong Marks : 0

Let us consider the earth to be spherical mass of 'M' and radius R. A body of mass 'm', is placed initially on the surface of earth (acceleration due to gravity is g_0) and finally taken 'x' distance deep into the earth (acceleration due to gravity is g_x). Assume 'ρ' is the density of the earth. Given the above-mentioned conditions, which of the following option is correct?

A. $g_x = g_0 (1 - x/R)$, where $g_0 = GM/R^2$ and G is universal gravitational constant
B. $g_x = g_0 (1 - x/R)^{-2}$, where $g_0 = GM/R^2$ and G is universal gravitational constant
C. $g_x = g_0 (1 - x/R)^{-1}$, where $g_0 = GM/R^2$ and G is universal gravitational constant
D. $g_x = g_0 (1 - x/R)^{-3}$, where $g_0 = GM/R^2$ and G is universal gravitational constant

Options :

1282062533. A

1282062534. B

1282062535. C

1282062536. D

Correct Marks : 2 Wrong Marks : 0

The pressure inside a water droplet having diameter of d (in meter) at T °C is P N/m². If the outside pressure is P_o N/m² and the surface tension of water at that temperature is γ N/m. Which of the following expression is correct?

A. $P = 2\gamma/d$
B. $P = P_o - (4\gamma/d)$
C. $P = 4\gamma/d$
D. $P = P_o + (4\gamma/d)$

Options :

Question Number : 63 Question Id : 128206644 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

A 75 g block of copper is taken from a furnace and dropped immediately into a 300 g glass beaker containing 200 g of water. The temperature of the water rises from 12 to 27°C. Given that the specific heats of copper, glass and water are 0.093, 0.12 and 1.0 cal/g/°C, respectively, which of the following is the temperature of furnace?

A.   480°C
B.   510°C
C.   530°C
D.   550°C

Options :

Question Number : 64 Question Id : 128206645 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

The angle between two tangents drawn from the point (1, 4) to the parabola $y^2=12x$ is equal to which one of the following?

A. $\tan^{-1}(1/5)$
B. $\tan^{-1}(1/4)$
C. $\tan^{-1}(1/3)$
D. $\tan^{-1}(1/2)$

Options :

Question Number : 65 Question Id : 128206646 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

The locus of a point which moves such that its distance from a fixed point called focus is equal to its distance from a fixed straight line called directrix, is called

A.   Ellipse
B.   Hyperbola
C.   Parabola
D.   All of the above

Question Number : 66 Question Id : 128206647 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Li_2O crystallizes with the antifluorite structure where the positions of the cations and anions are in the opposite positions to the structure observed for fluorite. What are the coordination numbers of the lithium and oxygen ions?

A. Lithium is four coordinate and oxygen is six coordinate.
B. Lithium is four coordinate and oxygen is eight coordinate.
C. Lithium is eight coordinate and oxygen is four coordinate.
D. Lithium and oxygen are both six coordinate.

Question Number : 67 Question Id : 128206648 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Which of these statements do NOT apply to H_2S?

A. Heat of formation is endothermic.
B. Humans recognize the characterize smell of hydrogen sulfide at concentrations less than 1 ppm.
C. At lethal concentrations, the human olfactory nerve can be paralyzed, making H_2S particularly dangerous.
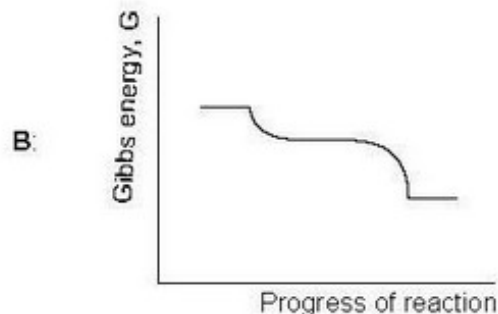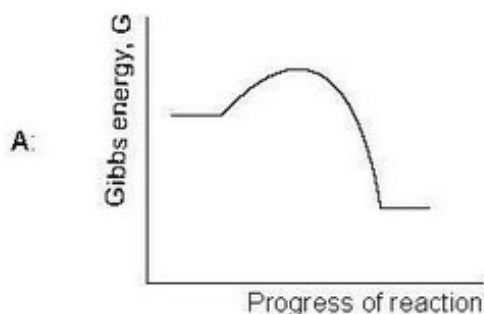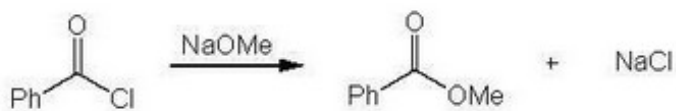D. H_2S is a gas at room temperature

Question Number : 68 Question Id : 128206649 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

For the following reaction, pick out a suitable rate profile from A-D for this transformation:
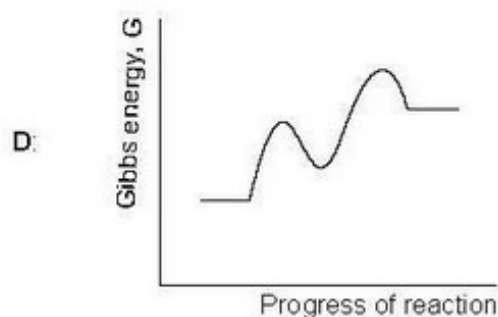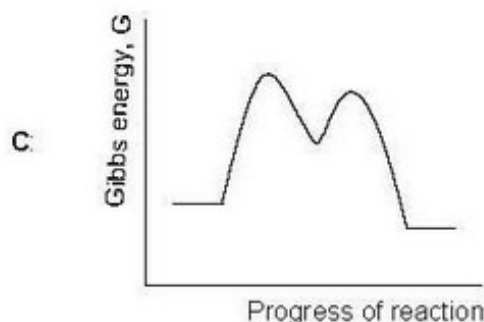
A.   A
B.   B
C.   C
D.   D

What is the electronic configuration of Cr^{3+}?

A. $[Ar]\ 3d^2 4s^1$
B. $[Ar]\ 3d^3$
C. $[Ar]\ 3d^1 4s^2$
D. $[Ar]\ 3d^6$

Question Number : 70 Question Id : 128206651 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

In which of the following elemental sequence, the elements are arranged in their correct order of mobility starting from mobile to immobile under oxic conditions in near surface environment

A.   Fe, Mn, Na ~ Ca, Mg, K ~ Cu
B.   Ca, Mg, K ~ Cu, Na, Mn ~ Fe
C.   Na, Ca, Mg ~ K, Mn, Cu ~ Fe
D.   K, Fe, Mn ~ Na, Ca, Mg ~ Cu

Options :

1282062569. A

1282062570. B

1282062571. C

1282062572. D

Question Number : 71 Question Id : 128206652 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Species composition and abundance in soil community is influenced by

A.   Cannibalism only
B.   Intra-guild predation only
C.   Cannibalism, intra-guild predation and trophic level omnivory
D.   Nitrogen concentration in atmosphere

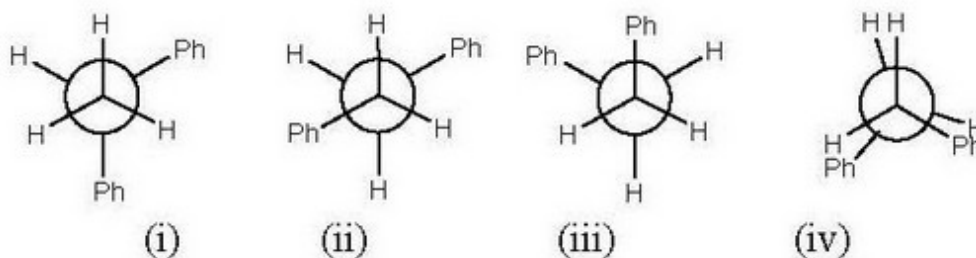**Options :**

1282062573. A

1282062574. B

1282062575. C

1282062576. D

Question Number : 72 Question Id : 128206653 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Pick out the Newman projection which represents the most stable conformation of 1,2-diphenylethane

(i) (ii) (iii) (iv)

A. (i)
B. (ii)
C. (iii)
D. (iv)

Options :

1282062577. A

1282062578. B

1282062579. C

1282062580. D

Question Number : 73 Question Id : 128206654 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Match List-I (Publications) with List-II (Year) and select the correct answer from the codes given below relevant to India

	List –I		List –II
(a)	Limit to Growth	(i)	1962
(b)	Our Common Future	(ii)	1972
(c)	Silent Spring	(iii)	1980
(d)	World Conservation Strategy	(iv)	1987

Codes:

	(a)	(b)	(c)	(d)
A.	(iii)	(ii)	(i)	(iv)
B.	(ii)	(iv)	(i)	(iii)
C.	(iv)	(iii)	(ii)	(i)
D.	(iv)	(i)	(ii)	(iii)

Options :

1282062581. A

1282062582. B

1282062583. C

1282062584. D

Question Number : 74 Question Id : 128206655 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Depletion of ozone layer causes, which of the following?
(i)   Cataract in eyes leading to blindness
(ii)   Reduced productivity of forests
(iii)   Lung infection

Select the correct answer from the following codes
A.   Only (a)
B.   Only (a) and (b)
C.   Only (b) and (c)
D.   All (a), (b) and (c)

Options :

1282062585. A

1282062586. B

1282062587. C

1282062588. D

Question Number : 75 Question Id : 128206656 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Consider the following statements regarding the pace of soil erosion
(i)   Geological erosion (Geo: earth) is a slow process that continues relatively unnoticed and has been occurring for millions of years.
(ii)   The first phase of this soil forming process is called weathering which is a physico-chemical process that leads to the breakdown of rocks by wind and water into small fragments and formation of soil particles.

Which of the above statement(s) is/are correct?
A.   Only (i)
B.   Only (ii)
C.   Both (i) and (ii)
D.   Neither (a) nor (b)

Options :

1282062589. A

1282062590. B

1282062591. C

1282062592. D