

Q1. "Curie" is the unit of

“ क्यूरी ” किसकी इकाई है

- (a) Radioactivity/ रेडियोधर्मिता
- (b) Temperature/ तापमान
- (c) Heat/ऊष्मा
- (d) Energy/ऊर्जा

Q2. Study of atmospheric phenomena is called - वायुमंडलीय घटनाओं के अध्ययन को क्या कहा जाता है -

- (a) Astrology/खगोलशास्त्र
- (b) Meteorology/अंतरिक्ष-विज्ञान
- (c) Seismology/भूकंप विज्ञान
- (d) Astronomy/खगोल-विज्ञान

Q3. Photovoltaic cells are:

फोटोवोल्टाइक सेल क्या हैं:

- (a) Solar cells/सौर सेल
- (b) Thermal cells/ थर्मल सेल
- (c) Sulphur cells/सल्फर सेल
- (d) Molar cells/मॉलर सेल

Q4. The temperature is measured with तापमान किसके द्वारा मापा जाता है-

- (a) Altimeter/अल्टीमीटर
- (b) Pyrometer/पाइरोमीटर
- (c) Ammeter/एम्मीटर
- (d) Callipers/कैलिपरस

Q5. The S.I unit of latent heat is अतर्निहित उष्मा की एसआई इकाई क्या है-

- (a) cal-g
- (b) cal/°C
- (c) joule /kg- जूल/किग्रा
- (d) none of these/इनमे से कोई नहीं

Q6. SONAR is used by SONAR किसके द्वारा उपयोग किया जाता है

- (a) Astronauts/अंतरिक्ष यात्री
- (b) Doctors/डॉक्टरों
- (c) Engineers/इंजीनियर्स
- (d) Navigators/नाविक

Q7. Who invented Dynamite?

डायनामेट का आविष्कार किसने किया था?

- (a) J B Dunlop/जे बी डनलप
- (b) Alfred Nobel/अल्फ्रेड नोबेल
- (c) James Simons/जेम्स सिमंस
- (d) Peter Hargreaves/पीटर हार्गरेव्स

Q8. The lightest radioactive element is सबसे हल्का रेडियोधर्मी तत्व कौन सा है?

- (a) deuterium/ड्यूटेरियम
- (b) polonium/पॉलोनियम
- (c) tritium/ट्रिटियम
- (d) uranium/यूरेनियम

Q9. Which part of the camera is equivalent to the retina of human eye?

कैमरे का कौन सा भाग मानव नेत्र के रेटिना के समान है?

- (a) Lens/लेंस
- (b) Film/फ़िल्म
- (c) Aperture /अपर्चर
- (d) Shutter/शटर

Q10. When the door of refrigerator is opened in a closed room, then:

जब एक बंद कमरे में रेफ्रिजरेटर का दरवाजा खोला जाता है, तो:

- (a) room turns to be cooler /कमरा ठंडा हो जाता है
- (b) the temperature of room falls/कमरे का तापमान गिरता है
- (c) the temperature of room is not affected/कमरे का तापमान प्रभावित नहीं होता है
- (d) the room becomes hotter gradually/कमरा धीरे-धीरे गर्म हो जाता है

Q11. The primary colours used in a colour TV are:

एक रंगीन टीवी में प्रयुक्त प्राथमिक रंग हैं:

- (a) Green, Yellow, Violet/हरा, पीला, बैंगनी
- (b) Violet, Red, Orange/ बैंगनी, लाल, संतरी
- (c) Blue, Green, Red/नीला, हरा, लाल
- (d) Blue, Green, Violet/नीला, हरा, बैंगनी

Q12. A dentist's mirror is a:

एक दंत चिकित्सक के दर्पण क्या है:

- (a) cylindrical mirror/बेलनाकार दर्पण
- (b) plane mirror/समतल दर्पण
- (c) convex mirror/उत्तल दर्पण
- (d) concave mirror/अवतल दर्पण

Q13. The mirror used in motor vehicles to see the rear view is

मोटर वाहनों में पीछे का दृश्य के लिए कौन सा दर्पण उपयोग किया जाता है-

- (a) Biconcave/द्विअवतली
- (b) Convex/उत्तल
- (c) Plane/समतल
- (d) Concave/अवतल

Q14. In SI units the unit of power of a lens is

एक लेंस की शक्ति की SI इकाई क्या है-

- (a) Metre/मीटर
- (b) Poundem/पौंडम
- (c) Watt/वाट
- (d) Diopter/डाईओप्टर

Q15. Minus 40 degree centigrade is equal to ___ degree Fahrenheit.

न्यूनतम 40 डिग्री सेंटीग्रेड ___ डिग्री फ़ारेनहाइट के बराबर है.

- (a) 104
- (b) 122
- (c) - 40
- (d) None of these

S1. Ans.(a)

Sol. The curie (symbol Ci) is a non-SI unit of radioactivity

S2. Ans.(b)

Sol. Study of atmospheric phenomena is called Meteorology

S3. Ans.(a)

Sol. The conversion of light energy into electrical energy is based on the phenomenon called photovoltaic effect. A photovoltaic cell is the basic unit of the system where the photovoltaic effect is utilized to produce electricity from light energy. Silicon is most widely used semiconductor material for construction photovoltaic cell.

S4. Ans.(b)

Sol. Pyrometer is an instrument for measuring high temperatures, especially in furnaces and kilns.

S5. Ans.(c)

Sol. The SI unit of latent heat is joule per kilogram

S6. Ans.(d)

Sol. Sonar is a technique that uses sound propagation to navigate, communicate with or detect objects on or under the surface of the water, such as other vessels. It is used by Navigators.

S7. Ans.(b)

Sol. Dynamite is an explosive made of nitroglycerin, sorbents (such as powdered shells or clay) and stabilizers. It was invented by the Swedish chemist and engineer Alfred Nobel.

S8. Ans.(c)

Sol. Tritium is a radioactive form, or "isotope", of hydrogen, it is the lightest radioactive element.

S9. Ans.(b)

Sol. Film of Camera is equivalent to retina of Eye. On retina and on camera the image of object is formed.

S10. Ans.(d)

Sol. When the door of the refrigerator opened is a closed room, the room becomes hotter gradually because of the gas of the refrigerator.

S11. Ans.(c)

Sol. In electronic visual displays, the Primary colours normally used are red, green and blue. Primary colours are sets of colours that can be combined to make a useful range of colours.

S12. Ans.(d)

Sol. Dentist's mirror is concave. It is also called converging mirror. This mirror is used in reflecting telescopes, gather light from a small source, to form optical cavities etc.

S13. Ans.(b)

Sol. The convex mirror produces an upright image of any object and offers a wide viewing area as compared to the plane mirror. The usage of this type of mirror can be perceived on the car rear-view mirror.

S14. Ans.(d)

Sol. S.I unit of power is diopter

S15. Ans.(c)

Sol. Minus 40 degree centigrade is equal to -40 degree Fahrenheit.

Q1. Who is known as father of Taxonomy
वर्गीकरण विज्ञान के पिता के रूप में किसे जाना जाता है

- (a) Angler/एंग्लर
- (b) Aristotle/एरिस्टोटल
- (c) Linnaeus/लिनैअस
- (d) None/कोई नहीं

Q2. Ringworm is a disease caused by
दाद किसके कारण होने वाली एक बीमारी है?

- (a) Fungi/कवक
- (b) Bacteria/जीवाणु
- (c) Virus/वाइरस
- (d) Flies/मक्खियों

Q3. Scurvy (bleeding of gums) is caused by deficiency of
which vitamin?

स्केवी (मसूड़ों का खून) किस विटामिन की कमी के कारण होता है?

- (a) Vitamin K
- (b) Vitamin B2
- (c) Vitamin C
- (d) Vitamin A

Q4. Tuberculosis is caused by a
तपेदिक किसके कारण होता है?

- (a) Bacterium/जीवाणु
- (b) Virus /वाइरस
- (c) Fungus /कवक
- (d) Protozoa/प्रोटोजोआ

Q5. Plant which grow in saline soil are—
खारी मिट्टी में विकसित होने वाले पौधे हैं —

- (a) Xerophytes/क्सेरोफाइट्स
- (b) Hydrophytes/हाइड्रोफाइट्स
- (c) Halophytes/हालोफाइट्स
- (d) Succulents/सक्कुलेंट्स

Q6. The PH of human blood is between
मानव रक्त का PH किसके बीच है-

- (a) 6.5-7
- (b) 7.35-7.45
- (c) 8-9
- (d) 4.5-5

Q7. Homo sapien is the scientific name of —

होमो सपिएन किसका वैज्ञानिक नाम है —

- (a) Honeybee/मधुमक्खी
 (b) Monkey/बंदर
 (c) Man/मनुष्य
 (d) Tiger/बाघ

Q8. TMV is related to —

TMV किससे संबंधित है—

- (a) Virus/वाइरस
 (b) Evolution/ क्रमागत उत्पत्ति
 (c) Algae/शैवाल
 (d) Reproduction of/प्रजनन

Q9. Five Kingdom classification was given by

फाइव किंगडम क्लासिफिकेशन किसके द्वारा दिया गया था?

- (a) Whittaker/व्हाइटकर
 (b) Heackel/हेकेल
 (c) Linneus/लिनियस
 (d) Copeland/कोपलैंड

Q10. Viticulture is Study and Production of ?

विटीकल्चर किसकी खेती का अध्ययन और उत्पादन है?

- (a) Gauva/अमरूद
 (b) Grapes/अंगूर
 (c) Mango/आम
 (d) Apple/सेब

Q11. The vitamin which is generally excreted by humans in urine is

मनुष्यों द्वारा आमतौर पर पेशाब में कौन सा विटामिन उत्सर्जित होता है

- (a) Vitamin A
 (b) Vitamin D
 (c) Vitamin C
 (d) Vitamin E

Q12. A large blood vessel that carries blood away from the heart is called –

एक बड़ी रक्त वाहिका जो खून को हृदय से दूर ले जाती है उसे क्या कहा जाता है –

- (a) Vein/ रक्तवाहिनी
 (b) Artery/धमनी
 (c) Capillary/केशिका
 (d) Nerve/तंत्रिका

Q13. Which is the oldest organism on the earth ?

पृथ्वी पर सबसे पुराना जीव कौन सा है?

- (a) Blue green Algae/नीले हरे शैवाल
 (b) Amoeba/अमीबा
 (c) Fungi/कवक
 (d) Euglena/यूग्लेना

Q14. Average blood pressure of a human is

मानव का औसत रक्तचाप कितना है?

- (a) 60/120
 (b) 100/200

- (c) 20/80
 (d) 120/80

Q15. Which of the following are longest cells of human body?

निम्नलिखित में से कौन सी मानव शरीर की सबसे लंबी कोशिकाएं हैं?

- (a) Pancreatic cells /अग्नाशयी कोशिकाएं
 (b) Epithelial cells/उपकला कोशिकाएं
 (c) Nerve cells/तंत्रिका कोशिकाएं
 (d) Epidermal cells/अधिचर्मिक कोशिकाएं

Solutions

S1. Ans.(c)

Sol. Linnaeus is known as father of Taxonomy.

S2. Ans.(a)

Sol. Ringworm of the skin (tinea corporis) is most commonly caused by the fungus Trichophyton rubrum, which spreads from one person to another.

S3. Ans.(c)

Sol. Scurvy is caused due to deficiency of Vitamin C.

S4. Ans.(a)

Sol. Tuberculosis (TB) is an infectious disease usually caused by the bacterium Mycobacterium tuberculosis (MTB). It generally affects the lungs, but can also affect other parts of the body.

S5. Ans.(c)

Sol. Halophytes are salt-resistant or salt-tolerant plants that thrive and complete their life cycles in soils or waters containing high salt concentrations.

S6. Ans.(b)

Sol. A normal blood pH is tightly regulated between 7.35 and 7.45.

S7. Ans.(c)

Sol. Homo sapiens. is the scientific name for the human species.

S8. Ans.(a)

Sol. TMV is a virus.

S9. Ans.(a)

Sol. Robert Whittaker was the first to propose the five-kingdom taxonomic classification of the world's biota into the Animalia, Plantae, Fungi, Protista, and Monera in 1969.

S10. Ans.(b)

Sol. Branch of biology deals with Grapes is called Viticulture.

S11. Ans.(c)

Sol. The vitamin which is g-enerally excreted by humans in urine is Vitamin C.

S12. Ans.(b)

Sol. Arteries carry oxygenated blood away from the heart to the tissues.

S13. Ans.(a)

Sol. Blue green Algae are the oldest organism on the earth.

S14. Ans.(d)

Sol. Normal human blood pressure is 120/80.

S15. Ans.(c)

Sol. The longest cells in the human body are nerve cells. The longest cells in the human body are the nerve cells whose cell bodies are located in the base of spinal cord and whose axons run down to the ends of toes.

Q1. Who invented steam Engine?

स्टीम इंजन का आविष्कार किसने किया?

- (a) Robert Watson (रॉबर्ट वॉटसन)
- (b) James Watt (जेम्स वाट)
- (c) William Harvey (विलियम हार्वे)
- (d) Michael Faraday (माइकल फैराडे)

Q2. Tata institute of Fundamental research is located in टाटा इंस्टीट्यूट ऑफ फंडामेंटल रिसर्च स्थित है-

- (a) Bangalore (बैंगलोर)
- (b) Kolkata (कोलकाता)
- (c) Delhi (दिल्ली)
- (d) Mumbai (मुंबई)

Q3. National chemical Laboratory is situated at राष्ट्रीय रासायनिक प्रयोगशाला स्थित है:

- (a) Lucknow (लखनऊ)
- (b) New Delhi (नई दिल्ली)
- (c) Pune (पुणे)
- (d) Hyderabad (हैदराबाद)

Q4. Isotopes are those atoms of the same element which have-

आइसोटोप उन तत्वों के परमाणु हैं जिनके पास-

- (a) Atomic mass is same but atomic number is different (परमाणु द्रव्यमान समान है परमाणु संख्या अलग है)
- (b) Atomic mass is different but atomic number is same (परमाणु द्रव्यमान अलग है परमाणु संख्या समान है)
- (c) Atomic number and atoms mass both are same (परमाणु संख्या और परमाणु पदार्थ दोनों समान हैं)
- (d) None of these. (इनमें से कोई नहीं.)

Q5. Monazite is an ore of-

मोनाजाइट एक अयस्क है-

- (a) Zirconium (ज़िरकोनियम)
- (b) Thorium (थोरियम)
- (c) Titanium (टाइटैनियम)
- (d) Iron (लोह)

Q6. Which of the following materials has the highest electrical conductivity?

निम्नलिखित सामग्रियों में से सबसे अधिक विद्युत चालकता किसमें है?

- (a) Diamond (हीरा)
- (b) Silver (सिल्वर)
- (c) Graphite (ग्रेफाइट)
- (d) Wood (लकड़ी)

Q7. Which one of the following alloys is called an amalgam?

निम्न में से कौन सी मिश्र धातु को एक मिश्रण कहा जाता है?

- (a) Zinc - Copper (ज़िंक - कॉपर)
- (b) Copper - Tin (कॉपर-टिन)
- (c) Mercury - Zinc (पारा - ज़िंक)
- (d) Lead - Zinc (लीड-ज़िंक)

Q8. For the diamonds, the unit of weight is carat. One Carat is equal to-

हीरे के लिए, वजन की इकाई कैरेट है. एक कैरेट बराबर है-

- (a) 100 mg
- (b) 200 mg
- (c) 300 mg
- (d) 400 mg

Q9. According to weight, the percentage of Hydrogen in water (H₂O), is?

वजन के अनुसार, पानी में हाइड्रोजन का प्रतिशत (H₂O), है?

- (a) 44.45%
- (b) 5.55%
- (c) 88.89%
- (d) 11.11%

Q10. Permanent hardness water is due to पानी की स्थायी कठोरता की वजह है:

- (a) Chlorides and sulphates of calcium and Magnesium (कैल्शियम और मैग्नेशियम के क्लोराइड और सल्फाट)
- (b) Calcium bicarbonate sulphates (कैल्शियम बिकारबोनेट सल्फेट्स)
- (c) Magnesium bicarbonate (मैग्नेशियम बाइकार्बोनेट)
- (d) Chlorides of Silver and Potassium (सिल्वर और पोटेशियम के क्लोराइड्स)

Q11. Which is used as Laughing gas is- किसका उपयोग हंसने वाली गैस के रूप में किया जाता है?

- (a) Nitrous Oxide (नाइट्रस ऑक्साइड)
- (b) Nitrogen dioxide (नाइट्रोजन डाइऑक्साइड)
- (c) Nitrogen Trioxide (नाइट्रोजन ट्रायऑक्साइड)
- (d) Nitrogen Tetra Oxide (नाइट्रोजन टेट्रा ऑक्साइड)

Q12. Goldsmiths uses aqua regia, which is prepared by mixing?

गोल्डस्मिथ्स एक्वा रीगिया का उपयोग करता है, जो _____ मिश्रण-द्वारा तैयार किया जाता है.

- (a) Nitric acid and sulphuric acid

- (नाइट्रिक एसिड और सल्फ्यूरिक एसिड)
 (b) Nitric acid and Hydrochloric acid
 (नाइट्रिक एसिड और हाइड्रोक्लोरिक एसिड)
 (c) Sulphuric acid and Hydrochloric acid
 (सल्फ्यूरिक एसिड और हाइड्रोक्लोरिक एसिड)
 (d) Citric acid and Benzoic acid
 (साइट्रिक एसिड और बेंजोइक एसिड)

Q13. Which one of the following catalysts is used for hydrogenation of vegetable oils?

वनस्पति तेलों के हाइड्रोजनीकरण के लिए निम्न में से कौन सा उत्प्रेरक उपयोग किया जाता है?

- (a) Zinc dust (जस्ता धूल)
 (b) Nickel (निकेल)
 (c) Iron (आयरन)
 (d) copper (तांबे)

Q14. RDX was invented by Ardiex का आविष्कार किया था:

- (a) Alfred Nobel (अल्फ्रेड नोबेल)
 (b) Soddy (सोडी)
 (c) Bergillins (बर्गिलिन)
 (d) Henning (हेनिंग)

Q15. Which one among the following is called philosopher's wool?

निम्नलिखित में से किसे दार्शनिक ऊन कहा जाता है?

- (a) Zinc Bromide (जस्ता ब्रोमाइड)
 (b) Zinc Nitrate (जस्ता नाइट्रेट)
 (c) Zinc Oxide (जिंक ऑक्साइड)
 (d) Zinc Chloride (जस्ता क्लोराइड)

1.Ans(b)

Sol. More significant improvements to the steam engine were made by Scottish engineer and inventor James Watt in 1763. So due to this reason he is regarded as the inventor of the steam engine.

S2.Ans(d)

Sol. Tata institute of Fundamental Research which Homi Bhabha founded on 1st June 1945 with the support from the Sir Dorabji Tata. It is located in Mumbai.

S3.Ans(c)

Sol. The National Chemical Laboratory (CSIR-NCL), Pune was established in 1950 is a constituent laboratory of the Council of Scientific and Industrial Research (CSIR).

S4.Ans(b)

Sol. The Isotopes are a set of nuclides/atoms having the same number of protons, but a different number of neutrons. In other words, the same atomic number having different atomic mass.

S5.Ans(b)

Sol. Monazite is an important ore for Thorium, Lanthanum and Cerium. India, Madagascar and South

Africa have large deposits of monazite sands.

S6.Ans(b)

Sol. Silver has the highest electrical conductivity of all metals.

S7.Ans(c)

Sol. An amalgam is a substance formed by the reaction of Mercury with another metal.

S8.Ans(b)

Sol. The carat(ct) is a unit of mass equal to 200 mg and is used for measuring gemstones and pearls.

S9.Ans(d)

Sol. Percentage of composition is the percentage by mass of each element present in a compound.

In Water, $H_2O = 2 + 16 = 18 \text{ g/mol}$
 molecular weight of water 18.0152 grams.

No. of Hydrogen atoms present in water = 2

\therefore Percentage of Hydrogen in water

$= \frac{2}{18} \times 100 = 11.11\%$

S10.Ans(a)

Sol. Drinking water is described "hard" due to the presence of highly dissolved minerals specifically sulphates and chlorides of Calcium and Magnesium . It is very difficult to wash clothes with hard water is it require more soap and leaves a messy scum that cannot be washed out easily.

S11.Ans(a)

Sol. Nitrous Oxide (N₂O) is also known as laughing gas.

S12.Ans(b)

Sol. Aqua Regia is an acidic, corrosive and oxidative mixture of three parts concentrated hydrochloric acid (HCl) and one part concentrated nitric acid (HNO₃).

S13.Ans(b)

Sol. Hydrogenation is a chemical reaction between molecular hydrogen and another compounds or elements, usually in the presence of a catalyst such as Nickel, Palladium or Platinum.

S14.Ans(d)

Sol. RDX is powerful explosive discovered by Georg Friedrich Henning of Germany and patent in 1898 but not used until World War II when most of the warring powers introduced it.

S15.Ans(c)

Sol. The compound Zinc Oxide (ZnO) is called philosopher's wool.

Q1. Who invented steam Engine?

स्टीम इंजन का आविष्कार किसने किया?

- (a) Robert Watson (रॉबर्ट वॉटसन)
 (b) James Watt (जेम्स वाट)
 (c) William Harvey (विलियम हार्वे)

(d) Michael Faraday (माइकल फैराडे)

Q2. Tata institute of Fundamental research is located in टाटा इंस्टीट्यूट ऑफ फंडामेंटल रिसर्च स्थित है-

- (a) Bangalore (बैंगलोर)
 (b) Kolkata (कोलकाता)
 (c) Delhi (दिल्ली)
 (d) Mumbai (मुंबई)

Q3. National chemical Laboratory is situated at राष्ट्रीय रासायनिक प्रयोगशाला स्थित है:

- (a) Lucknow (लखनऊ)
 (b) New Delhi (नई दिल्ली)
 (c) Pune (पुणे)
 (d) Hyderabad (हैदराबाद)

Q4. Isotopes are those atoms of the same element which have-

आइसोटोप उन तत्वों के परमाणु हैं जिनके पास-

- (a) Atomic mass is same but atomic number is different (परमाणु द्रव्यमान समान है परमाणु संख्या अलग है)
 (b) Atomic mass is different but atomic number is same (परमाणु द्रव्यमान अलग है परमाणु संख्या समान है)
 (c) Atomic number and atoms mass both are same (परमाणु संख्या और परमाणु पदार्थ दोनों समान हैं)
 (d) None of these. (इनमें से कोई नहीं.)

Q5. Monazite is an ore of- मोनाजाइट एक अयस्क है-

- (a) Zirconium (ज़िरकोनियम)
 (b) Thorium (थोरियम)
 (c) Titanium (टाइटैनियम)
 (d) Iron (लोह)

Q6. Which of the following materials has the highest electrical conductivity?

निम्नलिखित सामग्रियों में से सबसे अधिक विद्युत चालकता किसमें है?

- (a) Diamond (हीरा)
 (b) Silver (सिल्वर)
 (c) Graphite (ग्रेफाइट)
 (d) Wood (लकड़ी)

Q7. Which one of the following alloys is called an amalgam?

निम्न में से कौन सी मिश्र धातु को एक मिश्रण कहा जाता है?

- (a) Zinc - Copper (ज़िंक - कॉपर)
 (b) Copper - Tin (कॉपर-टिन)
 (c) Mercury - Zinc (पारा - ज़िंक)
 (d) Lead - Zinc (लीड-ज़िंक)

Q8. For the diamonds, the unit of weight is carat. One Carat is equal to-

हीरे के लिए, वजन की इकाई कैरेट है. एक कैरेट बराबर है-

- (a) 100 mg
 (b) 200 mg

- (c) 300 mg
 (d) 400 mg

Q9. According to weight, the percentage of Hydrogen in water (H₂O), is?

वजन के अनुसार, पानी में हाइड्रोजन का प्रतिशत (H₂O), है?

- (a) 44.45%
 (b) 5.55%
 (c) 88.89%
 (d) 11.11%

Q10. Permanent hardness water is due to पानी की स्थायी कठोरता की वजह है:

- (a) Chlorides and sulphates of calcium and Magnesium (कैल्शियम और मैग्नेशियम के क्लोराइड और सल्फेट)
 (b) Calcium bicarbonate sulphates (कैल्शियम बिकारबोनेट सल्फेट्स)
 (c) Magnesium bicarbonate (मैग्नेशियम बाइकार्बोनेट)
 (d) Chlorides of Silver and Potassium (सिल्वर और पोटेशियम के क्लोराइड्स)

Q11. Which is used as Laughing gas is- किसका उपयोग हंसने वाली गैस के रूप में किया जाता है?

- (a) Nitrous Oxide (नाइट्रस ऑक्साइड)
 (b) Nitrogen dioxide (नाइट्रोजन डाइऑक्साइड)
 (c) Nitrogen Trioxide (नाइट्रोजन ट्रायऑक्साइड)
 (d) Nitrogen Tetra Oxide (नाइट्रोजन टेट्रा ऑक्साइड)

Q12. Goldsmiths uses aqua regia, which is prepared by mixing?

गोल्डस्मिथ्स एक्वा रीगिया का उपयोग करता है, जो _____ मिश्रण-द्वारा तैयार किया जाता है.

- (a) Nitric acid and sulphuric acid (नाइट्रिक एसिड और सल्फ्यूरिक एसिड)
 (b) Nitric acid and Hydrochloric acid (नाइट्रिक एसिड और हाइड्रोक्लोरिक एसिड)
 (c) Sulphuric acid and Hydrochloric acid (सल्फ्यूरिक एसिड और हाइड्रोक्लोरिक एसिड)
 (d) Citric acid and Benzoic acid (साइट्रिक एसिड और बेंजोइक एसिड)

Q13. Which one of the following catalysts is used for hydrogenation of vegetable oils?

वनस्पति तेलों के हाइड्रोजनीकरण के लिए निम्न में से कौन सा उत्प्रेरक उपयोग किया जाता है?

- (a) Zinc dust (जस्ता धूल)
 (b) Nickel (निकेल)
 (c) Iron (आयरन)
 (d) copper (तांबे)

Q14. RDX was invented by आरडीएक्स का आविष्कार किया था:

- (a) Alfred Nobel (अल्फ्रेड नोबेल)
 (b) Soddy (सोडी)
 (c) Bergillins (बर्गिलिन)
 (d) Henning (हेनिंग)

Q15. Which one among the following is called philosopher's wool?

निम्नलिखित में से किसे दार्शनिक ऊन कहा जाता है?

- (a) Zinc Bromide (जस्ता ब्रोमाइड)
 (b) Zinc Nitrate (जस्ता नाइट्रेट)
 (c) Zinc Oxide (जिंक ऑक्साइड)
 (d) Zinc Chloride (जस्ता क्लोराइड)

S1.Ans(b)

Sol. More significant improvements to the steam engine were made by Scottish engineer and inventor James Watt in 1763. So due to this reason he is regarded as the inventor of the steam engine.

S2.Ans(d)

Sol. Tata institute of Fundamental Research which Homi Bhabha founded on 1st June 1945 with the support from the Sir Dorabji Tata. It is located in Mumbai.

S3.Ans(c)

Sol. The National Chemical Laboratory (CSIR-NCL), Pune was established in 1950 is a constituent laboratory of the Council of Scientific and Industrial Research (CSIR).

S4.Ans(b)

Sol. The Isotopes are a set of nuclides/atoms having the same number of protons, but a different number of neutrons. In other words, the same atomic number having different atomic mass.

S5.Ans(b)

Sol. Monazite is an important ore for Thorium, Lanthanum and Cerium. India, Madagascar and South Africa have large deposits of monazite sands.

S6.Ans(b)

Sol. Silver has the highest electrical conductivity of all metals.

S7.Ans(c)

Sol. An amalgam is a substance formed by the reaction of Mercury with another metal.

S8.Ans(b)

Sol. The carat(ct) is a unit of mass equal to 200 mg and is used for measuring gemstones and pearls.

S9.Ans(d)

Sol. Percentage of composition is the percentage by mass of each element present in a compound.

In Water, $H_2O = 2 + 16 = 18 \text{ g/mol}$

molecular weight of water 18.0152 grams.

No. of Hydrogen atoms present in water = 2

\therefore Percentage of Hydrogen in water

$= \frac{2}{18} \times 100 = 11.11\%$

S10.Ans(a)

Sol. Drinking water is described "hard" due to the

presence of highly dissolved minerals specifically sulphates and chlorides of Calcium and Magnesium . It is very difficult to wash clothes with hard water is it require more soap and leaves a messy scum that cannot be washed out easily.

S11.Ans(a)

Sol. Nitrous Oxide (N₂O) is also known as laughing gas.

S12.Ans(b)

Sol. Aqua Regia is an acidic, corrosive and oxidative mixture of three parts concentrated hydrochloric acid (HCl) and one part concentrated nitric acid (HNO₃).

S13.Ans(b)

Sol. Hydrogenation is a chemical reaction between molecular hydrogen and another compounds or elements, usually in the presence of a catalyst such as Nickel, Palladium or Platinum.

S14.Ans(d)

Sol. RDX is powerful explosive discovered by Georg Friedrich Henning of Germany and patent in 1898 but not used until World War II when most of the warring powers introduced it.

S15.Ans(c)

Sol. The compound Zinc Oxide (ZnO) is called philosopher's wool.

Q1. Match List-I with List-II and select the correct answer from the code given below:

List-I	List-II
(Physical Quantities)	(Units)
A. Acceleration	1. Joule
B. Force	2. Newton second
C. Work done	3. Newton
D. Impulse	4. Metre/second ²

सूची-I को सूची-II के साथ मिलाये और नीचे दिए गए कोड से सही उत्तर का चयन करें:

List-I	List-II
(भौतिक मात्रा)	(इकाई)
A. त्वरण	1. जूल
B. बल	2. न्यूटन सेकंड
C. कार्य	3. न्यूटन
D. आवेग	4. मीटर/सेकंड ²

	A	B	C	D
(a)	1	2	3	4
(b)	3	4	1	2
(c)	2	3	4	1
(d)	4	3	1	2

Q2. Which one of the following thermometers is known as pyrometer?

निम्नलिखित में से कौनसा थर्मामीटर एक पायरोमीटर के रूप में

जाना जाता है?

- (a) Thermo-electric thermometers/थर्मो-इलेक्ट्रिक थर्मामीटर
- (b) Radiation thermometers/विकिरण थर्मामीटर
- (c) Gas thermometers/गैस थर्मामीटर
- (d) Liquid thermometers/तरल थर्मामीटर

Q3. Which of the following quantities is measured on the Richter scale?

निम्नलिखित में से किस मात्रा रिक्टर पैमाने पर मापा जाता है?

- (a) Speed of a glacier/एक ग्लेशियर की गति
- (b) Population growth/जनसंख्या वृद्धि
- (c) Intensity of an earthquake/भूकंप की तीव्रता
- (d) Temperature inside the earth/पृथ्वी के नीचे का तापमान

Q4. As the train starts moving, the head of the passenger sitting inside backward because of - जैसे ही ट्रेन चलना शुरू करती जाती है, अंदर बैठे यात्री का सर किसके कारण पीछे की ओर जाता है -

- (a) Inertia of Rest/स्थिरता का जड़त्व
- (b) Inertia of Motion/गति का जड़त्व
- (c) Moment of Inertia/जड़ता प्रवृत्ति
- (d) Conservation of Mass/द्रव्यमान की स्थिरता

Q5. The nature of radiation of light is- प्रकाश का विकिरण किस प्रकृति का है -

- (a) Like wave/तरंगीय
- (b) Like particle/कणीय
- (c) Like both of wave and particle/तरंगीय और कणीय दोनों
- (d) Like neither of wave nor of particle/ना तरंगीय और ना ही कणीय

Q6. The number of images of an object placed between two parallel mirrors is:

दो समानांतर दर्पणों के बीच रखी वस्तु की छवियों की संख्या कितनी होती है:

- (a) Two/दो
- (b) One/एक
- (c) Six/छ
- (d) Infinite/अनंत

Q7. The remove the defect of long sightedness on use- दीर्घ दृष्टि दोष के अपनयन में किसका उपयोग किया जाता है -

- (a) Concave lens/अवतल लेंस
- (b) Convex mirror/उत्तल दर्पण
- (c) Convex lens/उत्तल लेंस
- (d) Concave mirror/अवतल दर्पण

Q8. The normal temperature of human body is 98.4°F. It's equivalent temperature is °C is- मानव शरीर का सामान्य तापमान 98.4 डिग्री फ़ारेनहाइट है. डिग्री सेल्सियस में यह तापमान कितना है-

- (a) 40.16
- (b) 36.89
- (c) 35.72
- (d) 32.36

Q9. A radar which detects the presence of an enemy aircraft uses:

एक रडार जो एक दुश्मन के विमानों की मौजूदगी का पता लगाता है उसमें किसका उपयोग होता है:

- (a) Light waves/ प्रकाश तरंगें
- (b) Radio waves/रेडियो तरंगें
- (c) Sound waves/ध्वनि तरंगें
- (d) Ultrasound waves/अल्ट्रासाउंड तरंगें

Q10. Decibel is used to measure- डेसीबल किसे मापने के लिए उपयोग किया जाता है -

- (a) Hemoglobin in blood/रक्त में हीमोग्लोबिन
- (b) Sugar in urine/मूत्र में चीनी
- (c) Sound in atmosphere/ वातावरण में ध्वनि
- (d) Particles in air/हवा में कण

Q11. An electric bulb of 100 watt is used for 4 hours. The unit of electric energy used is-

100 वाट का एक बिजली बल्ब 4 घंटे के लिए उपयोग किया जाता है. कितनी विद्युत ऊर्जा यूनिट की खपत होती है -

- (a) 400
- (b) 25
- (c) 4
- (d) 0.4

Q12. Which one of the following can not be used as a nuclear fuel?

निम्नलिखित में से क्या एक परमाणु ईंधन के रूप में उपयोग नहीं किया जा सकता है?

- (a) Uranium/यूरेनियम
- (b) Thorium/थोरियम
- (c) Calcium/कैल्शियम
- (d) Plutonium/प्लूटोनियम

Q13. The official code name of the Pokhran nuclear test 1974, was

पोखरण परमाणु परीक्षण 1974 का आधिकारिक कोड नाम क्या था?

- (a) Smiling Buddha/स्माइलिंग बुद्ध
- (b) ThunderBolt/थंडर बोल्ट
- (c) Flying Garud/पलाइंग गरुड
- (d) Agni Pareeksha/अग्नि परीक्षा

Q14. For which word, the letter 'G' has been used in '2G spectrum'?

किस शब्द के लिए, '2 जी स्पेक्ट्रम' में 'जी' का इस्तेमाल किया गया है?

- (a) Global/
- (b) Government/
- (c) Generation/
- (d) Google/

Q15. Daisy wheel printer is a type of- डेजी व्हील प्रिंटर किसका प्रकार है -

- (a) Laser Printer/ लेजर प्रिंटर

- (b) DOT Matrix Printer/डॉट मैट्रिक्स प्रिंटर
 (c) Manual Printer/मैनुअल प्रिंटर
 (d) Impact Printer/संघट्ट प्रिंटर

Answers

S1.Ans(d)

Sol. Acceleration is the rate of change of velocity of an object. The S.I. unit of acceleration is the metre per second square (m/s²). The S.I. Unit of force is Newton(N). The S.I. unit of impulse is the Newton second (N. S.). The S.I. unit of work is Joule.

S2.Ans(b)

Sol. A pyrometer is a type of remote sensing thermometer used to measure the temperature of a surface. In the modern usage, it is a device that from a distance determines the temperature of a surface from the spectrum of the thermal radiation it emits.

S3.Ans(c)

Sol. The Richter scale is the most common standard of measurement for an earthquake. It was invented in 1935 by Charles F. Richter of the California Institute of Technology as a mathematical device to compose the size of earth-quake.

S4.Ans(a)

Sol. When a train suddenly starts, the passenger fall backward. This is because the lower part of the body which is in contact with the train begins to move while the upper part of the body tends to maintain its position. As a result, the upper part tends to fall backward.

S5.Ans(c)

Sol. The light has a dual nature, Sometimes it behaves only as wave and sometimes as light. Some experiments require light to be a wave, while others require light to be particle. This led to the acceptance of dual nature of light.

S6.Ans(d)

Sol. When an object is placed in between two parallel plane mirrors, then the number of images formed will be infinite.

S7.Ans(c)

Sol. Farsightedness (hyperopia) as it is medically termed is vision condition in which distance object are usually seen clearly, but close ones do not come into proper focus. To remove this vision problem one should use a convex lens.

S8.Ans(b)

Sol. The formula to convert Fahrenheit (°F) to Celsius (°C) is =
 $^{\circ}\text{C} = ((^{\circ}\text{F}-32) \times 5)/9$
 Since the temperature in $^{\circ}\text{F} = 98.4^{\circ}$
 $\therefore ^{\circ}\text{C} = ((98.4-32)\times 5)/9 = 36.89^{\circ}\text{C}$

S9.Ans(b)

Sol. Radar is an object-detection system which uses radio waves to determine the range, angle or velocity of objects. It is used to detect the location of aircraft, ships, spacecraft, motor vehicle etc.

S10.Ans(c)

Sol. 'Decibel' is used to measure the intensity of sound in atmosphere.

S11.Ans(d)

Sol. The electric consumed = 100 watt x 4 hour
 = 400 watt hour
 = 400/1000 watt hour
 = 0.4 kilowatt hour
 = 0.4 unit.

S12.Ans(c)

Sol. The most common fissile nuclear fuels are uranium – 235 (235U) and plutonium -239 (239Pu). Thorium is more abundant in nature than uranium. Thorium can be used as a nuclear fuel through breeding to uranium -233 (U-233). Calcium is not used as a nuclear fuel.

S13.Ans(a)

Sol. 'Smiling Buddha' (MEA designation: Pokhran-I) was the assigned code name of India's first nuclear weapon explosion of May 18,1974.

S14.Ans(c)

Sol. 2G is short for '2nd Generation' wireless telephone technology which enables us to send text and picture message and has internet capabilities.

S15.Ans(d)

Sol. A daisy wheel printer is an early type of impact printer invented in 1969 by David S. Lee at Diablo Data systems.

Q1. Which of the following elements was first produced artificially?

निम्न में से कौन सा तत्व पहले कृत्रिम रूप से बनाया गया था?

- (a) Neptunium (नैप्टूनियम)
 (b) Plutonium (प्लूटोनियम)
 (c) Francium (फ्रेंसियम)
 (d) Technetium (टेक्नेटियम)

Q2. A body floats at 4°C water. If temperature reaches 100°C then-

शरीर 4 डिग्री सेल्सियस पानी में तैरता है। यदि तापमान 100 डिग्री सेल्सियस तक पहुंच जाता है तो-

- (a) The body will sink (शरीर डूब जाएगा)
 (b) No change (कोई परिवर्तन नहीं होगा)
 (c) More part of the body will submerge (शरीर का अधिक हिस्सा डूब जाएगा)
 (d) The body will float freely (शरीर स्वतंत्र रूप से तैरेगा)

Q3. Why it is easier to swim in the sea than in a river?

एक नदी की तुलना में समुद्र में तैरना आसान क्यों है?

- (a) The sea water is salty (समुद्र का पानी नमकीन है)

- (b) The sea water is deep(समुद्र का पानी गहरा है)
(c) The sea water is heavier(समुद्र का पानी भारी है)
(d) The sea water is lighter(समुद्र का पानी हल्का है)

Q4. Light from the Sun reaches Earth in about:
सूर्य से प्रकाश पृथ्वी पर कितनी देर में पहुंचता है:

- (a) 2 minutes
(b) 4 minutes
(c) 8 minutes
(d) 16 minutes

Q5. When light waves pass from air to glass the variable affected are-

जब हल्के तरंगों को हवा से कांच तक पहुंचा जाता है तो _____ प्रभावित होते हैं-

- (a) Wavelength, frequency and velocity (तरंगदैर्घ्य, आवृत्ति और वेग)
(b) Velocity and frequency(वेग और आवृत्ति)
(c) Wavelength and frequency(तरंगदैर्घ्य और आवृत्ति)
(d) Wavelength and velocity(तरंग दैर्घ्य और वेग)

Q6. Total internal reflection can take place when light travels from:

कुल आंतरिक प्रतिबिंब तब हो सकता है जब प्रकाश _____ से यात्रा कर रहा है:

- (a) Diamond to glass(डायमंड से कांच)
(b) Water to glass(ग्लास से पानी)
(c) Air to water(पानी से हवा)
(d) Air to glass(ग्लास से हवा)

Q7. Which one of the following phenomenon is used in optical fibres?

ऑप्टिकल फाइबर में निम्न में से कौन सी घटना का उपयोग किया जाता है?

- (a) Interference (हस्तक्षेप)
(b) Refraction(अपवर्तन)
(c) Total internal reflection(कुल आंतरिक प्रतिबिंब)
(d) Polarisation(ध्रुवीकरण)

Q8. An endoscope is a -
एंडोस्कोप एक है -

- (a) Narrow telescope(संकीर्ण दूरबीन)
(b) Type of camera(केमरा का प्रकार)
(c) Simple microscope(सरल माइक्रोस्कोप)
(d) None of these (इनमें से कोई नहीं)

Q9. A cut diamond shines brilliantly due to -
एक कट डायमंड शानदार ढंग से _____ की वजह से चमकता है

- (a) Total internal reflection(कुल आंतरिक प्रतिबिंब)
(b) Absorption of light(प्रकाश का अवशोषण)
(c) Some inherent property(कुछ अंतर्निहित संपत्ति)
(d) Its molecular structure(इसकी आणविक संरचना)

Q10. Which of the following is used to take 3-

dimensional pictures-

निम्न में से कौन सा 3-आयामी चित्र लेने के लिए उपयोग किया जाता है-

- (a) Photography(फोटोग्राफी)
(b) Holography(होलोग्राफी)
(c) Radiography(रेडियोग्राफी)
(d) None of the above(उपरोक्त में से कोई नहीं)

Q11. An astronaut sees the colour of the sky as -
एक अंतरिक्ष यात्री आकाश के रंग को _____ देखता है -

- (a) Blue(नीला)
(b) White(सफेद)
(c) Black(काला)
(d) Red(लाल)

Q12. The red colour of the Sun at sunset and sunrise is due to -

सूर्यास्त तथा सूर्योदय के समय सूर्य के लाल रंग होने का कारण है-

- (a) Scattering of light (प्रकाश का प्रकीर्णन)
(b) Refraction of light(प्रकाश का अपवर्तन)
(c) Total internal reflection of light(प्रकाश का संपूर्ण आंतरिक परावर्तन)
(d) Dispersion of light(प्रकाश का परिक्षेपण)

Q13. Reading glasses are made from which type of lenses?

पढ़ने वाला चश्मा किस लेंस का बना होता है?

- (a) Concave(अवतल)
(b) Convex(उत्तल)
(c) Plain(साधारण)
(d) None of these(इनमें से कोई नहीं)

Q14. The focusing in the eye is done by
नेत्र में ध्यान केंद्रित किसके द्वारा किया जाता है?

- (a) Change in the convexity of the lens(लेंस की उत्तलता में बदलाव)
(b) To and fro movement of the lens(लेंस के से और तक गति द्वारा)
(c) To and fro movement of the retina(रेटिना के से और तक गति द्वारा)
(d) Change in the refractive index of the eye fluid(आँख के तरल पदार्थ के अपवर्तक सूचकांक में बदलाव)

Q15. The mirror, which is used in searchlights, is -
दर्पण, जो सर्चलाइट्स में उपयोग किया जाता है

- (a) Concave mirror(अवतल दर्पण)
(b) Convex mirror(उत्तल दर्पण)
(c) Simple mirror(साधारण दर्पण)
(d) None of these(इनमें से कोई नहीं)

Solutions

S1. Ans.(d)

Sol. Technetium is a chemical element with atomic number 43. It was the first artificially produced element. Technetium was isolated by Carlo Perrier and Emilio segre in 1937.

S2. Ans.(a)

Sol. When the water is heated, its density decreases. The density of the water at 100°C is at the lowest, so the body will sink. Water density is maximum at 4°C, so the body will float.

S3. Ans.(a)

Sol. It is easier to swim in sea water than in a river because, the sea water contains salt which increases the density of water and also increases its upthrust so, the chances of sinking get reduced and one can easily swim in such water.

S4. Ans.(c)

Sol. The sunlight takes about 500 second or 8 minutes (apx) to reach to the earth.

S5. Ans.(d)

Sol. When light passes from air to glass or one medium to another, then the frequency of the light remains constant but wavelength and velocity are changed.

S6. Ans.(a)

Sol. Total internal reflection takes place when a ray of light is travelling from denser to thinner medium and angle of incidence is greater than the critical angle, the ray is completely reflected from surface and meet each other as if the surface is a mirror. So according to options, the situation of option (a) is correct where total internal reflection takes place, it is because diamond is denser than glass.

S7. Ans.(c)

Sol. The optical fibre is a very thin strand of glass or plastic cable for transmitting light from one point to another. They work on the principle of total internal reflection. There is no loss of signal through an optical fibre.

S8. Ans.(d)

Sol. An endoscope is a medical device consisting of a long, thin, flexible (or rigid) tube which has a light source and a video camera. Images of the inside of the patient's body can be seen on a screen. It is not suitable to categorize endoscope as a type of a camera.

S9. Ans.(a)

Sol. The refractive index of diamond is very high. Diamond achieves brilliance partially from total internal refraction. It has been cut or designed in such a way that if light enters into it, incident light strikes many of the internal surfaces.

S10. Ans.(b)

Sol. Holography is a technique of producing a three-dimensional image of an object. Holography can work with sound, light or any wavelength. It is also been used for three-dimensional natural films.

S11. Ans.(c)

Sol. The colour of the sky for an astronaut is black. It is because of the fact that in the space there is no atmosphere. Hence light doesn't get scattered at all. In addition to this, in space, there are no air particles against which the sunlight can strike, get reflected or scattered. Hence, astronaut see

everything black.

S12. Ans.(a)

Sol. Red has the maximum wavelength. During sunrise and sunset, the rays have to travel a larger part of the atmosphere because they are very close to the horizon. Therefore light other than red is mostly scattered away. Most of the red light which is least scattered enters our eyes. Hence, the sun and the sky appear red.

S13. Ans.(b)

Sol. A convex lens is thicker in the middle and thinner at the edges. Rays of light that pass through the lens are brought closer together. A convex lens is also called a converging lens. A convex lens is also used in reading glasses & it also used to remove the defect of farsightedness.

S14. Ans.(a)

Sol. The refractive or bending power of the cornea and humor is constant. However, that of the lens can be changed by changing its shape. That is making it more or less convex so that light can be properly focused on the retina. The greater the lens convexity or bulge the more bends the light. The flatter the lens, the less it bends that light.

S15. Ans.(a)

Sol. Concave mirror is used in the headlights of cars and in searchlights. A light placed at the focus of a concave lens can form a parallel beam and is used in car headlights and searchlights.

Q1. Study of bones, are under which branch of science? हड्डियों का अध्ययन, विज्ञान की किस शाखा में है?

- (a) Osteology/अस्थि विज्ञान
- (b) Orology/ओरोलोजी
- (c) Serology/सेरोलोजी
- (d) Geology/भूविज्ञान

Q2. Nilgai belong to the following family: निलगी निम्नलिखित में से किस फैमिली से संबंधित है:

- (a) Cow/गाय
- (b) Goat/बकरी
- (c) Sheep/भेड़
- (d) Deer/हिरन

Q3. Yeast and mushrooms are- खमीर और मशरूम क्या है -

- (a) Algae/शैवाल
- (b) Gymnosperm/अनावृतबीजी
- (c) Fungi/कवक
- (d) tuberous Roots/ट्यूबलर जड़

Q4. India veterinary Research institute is located at: भारतीय पशु चिकित्सा अनुसंधान संस्थान कहाँ स्थित है:

- (a) Bareilly/बरेली
- (b) Mathura/मथुरा
- (c) Karnal/करनाल

(d) Patna/पटना

Q5. The yellow colour of human urine is due to a pigment called-

मानव मूत्र का पीला रंग किस रंगद्रव्य के कारण होता है -

- (a) Cytochrome/साइटोक्रोम
- (b) Urochrome/यूरोक्रोम
- (c) Haemochrome/हेमोक्रोम
- (d) Phenolichrome/फेनोलीक्रोम

Q6. 1 December, is celebrated every year as -
1 दिसंबर, प्रति वर्ष किसके रूप में मनाया जाता है -

- (a) World Environment Day/विश्व पर्यावरण दिवस
- (b) World Food day/विश्व खाद्य दिवस
- (c) World Aids day/विश्व एड्स दिवस
- (d) World Literacy Day/विश्व साक्षरता दिवस

Q7. Myoglobin contains the metal-
मयोग्लोबिन में कौन सी धातु शामिल है -

- (a) Copper/कॉपर
- (b) Silver/सिल्वर
- (c) Gold/गोल्ड
- (d) Iron/आयरन

Q8. EBOLA is a-
इबोला एक है -

- (a) Terrorist Organization/आतंकवादी संगठन
- (b) Deadly virus/घातक वायरस
- (c) AIDS Test/एड्स टेस्ट
- (d) None of these/इनमें से कोई नहीं

Q9. Rickets disease in poultry bird is caused due to the deficiency of which vitamin?

पोल्ट्री पक्षी में मुर्गीयों को किस विटामिन की कमी के कारण रिकेट्स रोग होता है?

- (a) Vitamin D
- (b) Vitamin A
- (c) Vitamin B
- (d) Vitamin E

Q10. Match List-I with List-II and select the correct answer using the code given below the lists:

List-I (molecules)	List-II (Elements present)
A. Vitamin B-12	1. Magnesium
B. Haemoglobin	2. Cobalt
C. Chlorophyll	3. Copper
D. Chalco Pyrite	4. Iron

सूची- I का सूची- II के साथ मिलान करें और सूची के नीचे दिए गए कोड की सहायता से सही उत्तर का चयन करें:

List-I (अणु)	List-II (तत्व)
A. विटामिन B-12	1. मैग्नीशियम
B. हीमोग्लोबिन	2. कोबाल्ट
C. क्लोरोफिल	3. कॉपर
D. चाल्कोपाइराइट	4. आयरन

A B C D

- (a) 2 4 1 3
- (b) 2 1 3 4
- (c) 4 1 2 3
- (d) 3 4 2 1

Q11. During respiration energy is produced in the form of:

श्वसन के दौरान ऊर्जा किसके रूप में उत्पादित होती है:

- (a) ADP
- (b) ATP
- (c) NADP
- (d) CO₂

Q12. The first heart transplant was performed by-
पहला हृदय प्रत्यारोपण किसके द्वारा किया गया था -

- (a) Dr. William Harvey/डॉ. विलियम हार्वे
- (b) Sir. F.G. Hopkins/सर. एफ.जी. हॉपकिंस
- (c) Dr. Loues Pasteur/डॉ. लुई पाश्चर
- (d) Dr. Christian Bernard/डॉ. ईसाई बर्नार्ड

Q13. Match List-I with List-II and select the correct answer with the help of code given below the lists:

List-I	List-II
A. Audiogram	1. Heart
B. E.C.G	2. Brain
C. Mammogram	3. Ear
D. E.E.G	4. Breast

Code:

सूची- I का सूची- II के साथ मिलान करें और सूची के नीचे दिए गए कोड की सहायता से सही उत्तर का चयन करें:

List-I	List-II
A. ऑडियोग्राम	1. हृदय
B. विद्युत्कदलेख	2. मस्तिष्क
C. मैमोग्राम	3. कान
D. विद्युत मस्तिष्क लेक	4. स्तन

कोड:

- A B C D**
- (a) 1 2 3 4
 - (b) 2 1 3 4
 - (c) 4 3 2 1
 - (d) 3 1 2 4

Q14. Garima II is the name of a-
गरिमा II किसका नाम है -

- (a) Cloned buffalo/क्लोन भैंस
- (b) Cloned cow/क्लोन गाय
- (c) Cloned sheep/क्लोन भेड़
- (d) Bt tomato/बीटी टमाटर

Q15. Five Kingdom classification was given by पांच किंगडम वर्गीकरण किसके द्वारा दिया गया था-

- (a) Whittaker/व्हाइटकर
- (b) Heackel/हैकल
- (c) Linneus/लिनैस
- (d) Copeland/कोपलैंड

S1.Ans(a)

Sol.

Osteology - Study of bones.

Orology - Study of mountains.

Serology - Study of serum.

Geology - Study of internal structure of the earth and matter found inside it.

S2.Ans(d)

Sol. Nilgai is the largest Asian antelope species.

Antelope are creatures, who has strong permanent horns. There are more than 90 species of antelope.

S3.Ans(c)

Sol. Yest and mushrooms are a fungus.

S4.Ans(a)

Sol. Indian Veterinary Research Institute or IVRI is located at Izzatnagar, Bareilly Uttar Pradesh.

S5.Ans(b)

Sol. A pigment urochrome is the reason for the yellow colour of human urine. It is also known as urobilin.

S6.Ans(c)

Sol. 1st December's World AIDS day celebrated every year.

S7.Ans(d)

Sol. Myoglobin is an iron oxygen-binding protein found in the muscle tissue of vertebrates in general and in almost all mammals.

S8.Ans(b)

Sol. Ebola is a serious and deadly virus transmitted by animals and humans.

S9.Ans(a)

Sol. A deficiency of vitamin D makes it difficult to maintain proper calcium and phosphorus levels in bones which can cause rickets.

S10.Ans(a)

Sol. The correctly matched list is-
 Vitamin B12 - Cobalt
 Haemoglobin - Iron
 Chlorophyll - Magnesium
 Chalco pyrite - Copper

S11.Ans(b)

Sol. Respiration is a set of metabolic reactions and processes that take place in the cells of organisms to convert biochemical energy from nutrients into Adenosine Triphosphate (ATP), and release waste products.

S12.Ans(d)

Sol. The first heart transplant was performed by Dr. Christian Bernard who was a famous surgeon of South Africa.

S13.Ans(d)

Sol. Correctly matched order are:

Audiogram - Ear

E.C.G. - Heart

E.E.G. - Brain

Mammogram - Breast

S14.Ans(a)

Sol. The team of scientists of NDRI situated in Karnal got success to develop a clone of buffalo, named as Garima II, Aug, 2010.

S15.Ans(a)

Sol. Robert Whittaker was the first to propose the five-kingdom taxonomic classification of the world's biota into the Animalia, Plantae, Fungi, Protista, and Monera in 1969.

Q1. Which instrument is used for measuring humidity in the air?

हवा में नमी को मापने के लिए कौन सा उपकरण उपयोग किया जाता है

(a) Hydrometer/हाइड्रोमीटर

(b) Hygrometer/ह्यग्रोमीटर

(c) Spectrometer/स्पेक्ट्रोमीटर

(d) Eudiometer/युडियोमीटर

Q2. The force which opposes the relative motion between different layers of liquid or gases is called तरल या गैसों की विभिन्न परतों के बीच सापेक्षिक गति का विरोध करने वाले बल को क्या कहा जाता है?

(a) Critical Velocity/क्रिटिकल वेग

(b) Streamline Flow/स्ट्रीमलाइन फ्लो

(c) Terminal Velocity/टर्मिनल वेग

(d) Viscous Force/यान बल

Q3. Fathometer is used to measure:

किसके मापन के लिए फाथोमीटर का उपयोग किया जाता है:

(a) Earthquake/भूकंप

(b) Rain/वर्षा

(c) Depth of sea/समुद्र की गहराई

(d) Sound intensity/ध्वनि तीव्रता

Q4. The energy of wind is-

हवा की ऊर्जा है क्या है-

(a) Only potential/केवल स्थितिज ऊर्जा

(b) Only kinetic/केवल गतिज ऊर्जा

(c) Electrical/विद्युतीय ऊर्जा

(d) Potential and kinetic both/स्थितिज और गतिज दोनों

Q5 Which instrument is used to measure sound under water ?

पानी के नीचे की ध्वनि को मापने के लिए किस उपकरण का उपयोग किया जाता है?

(a) Hygrometer/ह्यग्रोमीटर

- (b) Hygroscope/ह्यग्रोस्कोप
 (c) Hypsometer/हाय्सोमीटर
 (d) Hydrophone/हाइड्रोफोन

Q6. Diffusion of light in the atmosphere takes place due to:

वायुमंडल में प्रकाश का विसरण किसके कारण होता है:

- (a) Carbon dioxide/कार्बन डाइऑक्साइड
 (b) Dust particles/धूल के कण
 (c) Helium/हीलियम
 (d) Water vapours/जल वाष्प

Q7. When a mirror is rotated by an angle θ , the reflected ray will rotate by:

जब एक दर्पण को θ के कोण पर घुमाया जाता है, प्रतिबिंबित किरण किस कोण पर घुमेगी:

- (a) 0
 (b) $\theta/2$
 (c) θ
 (d) 2θ

Q8. Force of attraction between the molecules of different substances is called

विभिन्न पदार्थों के अणुओं के बीच के आकर्षण बल को क्या कहा जाता है

- (a) Surface tension/सतह तनाव
 (b) Cohesive force/संसक्त बल
 (c) Adhesive force/आसंजक बल
 (d) None of above/उपरोक्त में से कोई नहीं

Q9. The safest temperature for keeping food fresh in a refrigerator is

रेफ्रिजरेटर में खाना ताज़ा रखने के लिए सबसे सुरक्षित तापमान कितना है?

- (a) 4°C
 (b) 8°C
 (c) 0°C
 (d) 10°C

Q10. Which instrument is used in submarine to see the objects above sea level? पनडुब्बी में समुद्र तल से ऊपर की वस्तुओं को देखने के लिए कौन सा वाद्ययंत्र उपयोग किया जाता है?

- (a) Pykometer/पीकोमीटर
 (b) Polygraph/पॉलीग्राफ
 (c) Photometer/फोटोमीटर
 (d) Periscope/पेरिस्कोप

Q11. Why does food cook faster in a pressure cooker? प्रेशर कुकर में खाना तेजी से क्यों पकता है?

- (a) The increased pressure increases the boiling point./दबाव में वृद्धि से कथनांक बढ़ता है.
 (b) Does not waste steam./भाप बर्बाद नहीं होती.
 (c) The food is cooked quickly by steam./खाना भाप से जल्दी से पकाया जाता है.
 (d) The water boils at constant temperature./स्थिर तापमान पर पानी उबलता है.

Q12. A biotechnique in which ultrasonic sound is used- एक बायोटेक्निक जिसमें अल्ट्रासोनिक ध्वनि का उपयोग किया जाता है -

- (a) Sonography/सोनोग्राफी
 (b) E.C.G
 (c) E.E.G
 (d) X-ray/एक्स-रे

Q13. Bats can fly during dark nights and also prey. This is because-

चमगादड़ अंधेरी रात के दौरान उड़ सकता है और शिकार भी कर सकता है. क्योंकि-

- (a) The pupil of their eyes is large/उनकी आंखों की पुतली बड़ी होती है
 (b) Their night vision is very good/उनकी रात की दृष्टि बहुत अच्छी है
 (c) Every birds can do this/हर पक्षी यह कर सकता है
 (d) They produce ultrasonic waves and are guided by them./वे अल्ट्रासोनिक तरंगों का उत्पादन करते हैं और उनके द्वारा निर्देशित होते हैं.

Q14. Which one of the following is the effect of the flight of supersonic jet?

निम्नलिखित में से क्या सुपरसोनिक जेट की उड़ान का प्रभाव है?

- (a) Air pollution/वायु प्रदूषण
 (b) Eye disease/नेत्र रोग
 (c) Depletion in ozone layer/ओजोन परत में कमी
 (d) None of these/इनमें से कोई नहीं

Q15. Which of the following has the longest wavelength?

निम्नलिखित में से किसकी सबसे लंबी तरंग दैर्ध्य है?

- (a) Infrared/इन्फ्रारेड
 (b) X-rays/एक्स-रे
 (c) Visible light/दृश्य प्रकाश
 (d) Radio waves/ रेडियो तरंगें

S1. Ans.(b)

Sol. A hygrometer is an instrument used to measure the moisture content in the atmosphere which is also called as humidity in the air.

S2. Ans.(d)

Sol. The viscous force is the force between a body and a fluid (liquid or gas) moving past it, in a direction so as to oppose the flow of the fluid past the object.

S3. Ans.(c)

Sol. Fathometer is an instrument used to determine the depth of water or a submerged object by means of ultrasound waves.

S4. Ans.(b)

Sol. The kinetic energy in the energy in moving objects or mass. The kinetic energy of the wind (wind energy) can be converted into electrical or mechanical energy.

S5. Ans.(d)

Sol. A hydrophone is a microphone designed to be used underwater for recording or listening to underwater sound

S6. Ans.(b)

Sol. Sunlight is the mixture of different colours. When it passes through the atmosphere it is scattered by the air molecules, particles of dust and other subtle materials which are present in the pathway.

S7. Ans.(d)

Sol. If a plane mirror is rotated through a certain angle, then the reflected ray rotates through twice of that angle. So if a mirror is rotated by an angle θ , the reflected ray will rotate by 2θ .

S8. Ans.(c)

Sol. Adhesive forces are the attractive forces between unlike molecules.

S9. Ans.(a)

Sol. Refrigerator temperatures do not destroy pathogenic or spoilage microorganisms. The lower temperature slows the growth of microorganisms already in the food. According to international standards, the recommended temperature of the refrigerator is 36°F to 38°F (1.7°C to 3.3°C). Thus option (a) is correct.

S10. Ans.(d)

Sol. A periscope is an instrument for observation over, around or through an object, obstacle or condition that prevents direct line-of-sight observation from an observer's current position

S11. Ans.(a)

Sol. The trapped steam increases the atmospheric pressure inside the cooker by 15 pounds per square inch (psi), or 15 pounds above normal sea-level pressure. At that pressure, the boiling point of water is increased from 212°F to 250°F . This higher temperature cooks food faster.

S12. Ans.(a)

Sol. Sonography or ultrasonography is an important mean of clinical diagnosis. It is a diagnostic imaging technique based on the application of ultrasound. It is widely used in the field of medical science. It is mainly used to provide a variety of information about the health of the mother during pregnancy, and the health and development of embryo or foetus.

S13. Ans.(d)

Sol. Bats are a fascinating group animals. They are one of the few mammals that can use ultrasonic sound to navigate. As they fly, make an ultrasonic (shouting) sound. The returning echoes give the bats information about anything that is ahead of them, including the speed and size of an insect and which way it is going. This system of finding prey is called echolocation-

locating things by their echoes.

S14. Ans.(c)

Sol. A jet engine is a machine for turning fuel into thrust. The thrust is produced by action and reaction also known as Newton's third law of motion. Those jet planes which are able to fly faster than the speed of sound are called supersonic jet planes. Jet engines are responsible for depletion of ozone. Flying at stratosphere height, they emit nitrogen oxide which has the potential to destroy significant quantities of ozone in the stratosphere.

S15. Ans.(d)

Sol. The electromagnetic spectrum consists of all the different wavelength of electromagnetic radiations such as: Radiowaves > Microwave > Infrared > Visible > Ultraviolet > X-rays > Gamma rays. Thus it is clear that the radio-waves are having the maximum wavelength while the Gamma rays are having minimum wavelength.

Q1. What is Vermiculture?

वर्मिकल्चर क्या है?

- (a) The science of raising worms/कीड़े बढ़ाने का विज्ञान
- (b) The science of studying animals/पशुओं का अध्ययन करने का विज्ञान
- (c) The science of studying fishes/मछलियों का अध्ययन करने का विज्ञान
- (d) The science of killing worms/कीड़े मारने का विज्ञान

Q2. The study of Gerontology, is related to which of the following?

गेरॉटोलोजी का अध्ययन, निम्नलिखित में से किस से संबंधित है?

- (a) Child infant/बाल शिशु
- (b) Female/महिला
- (c) Disease of skin/त्वचा की बीमारी
- (d) Old age/वृद्धावस्था

Q3. Genetics deals with-

आनुवंशिकी किससे संबंधित है -

- (a) Mendel's laws/मेंडल का नियम
- (b) Organic evolution/कार्बनिक विकास
- (c) DNA structure/डीएनए संरचना
- (d) Heredity and variations/आनुवंशिकता और विविधता

Q4. Dinosaurs were:

डायनासोर क्या थे:

- (a) Cenozoic reptiles/सेनोजोइक सरीसृप
- (b) Mesozoic birds/मेसोजोइक पक्षी
- (c) Paleozoic amphibians/पेलियोजोइक उभयचर
- (d) Mesozoic reptiles/मेसोसोइक सरीसृप

Q5. Poison gland of snakes is homologous to-

सांपों की जहर ग्रंथि को किसके अनुकूल है -

- (a) Electric organ of fishes/मछलियों के विद्युत अंग
- (b) Stings of rays/कीड़ों के डंक
- (c) Sebaceous glands of mammals/स्तनधारियों की वसामय

ग्रंथियां

(d) Salivary gland of vertebrates/ कशेरुकी की लार ग्रंथि

Q6. Desert plants are generally-

रेगिस्तान पौधों आम तौर पर किस प्रकार के होते हैं -

- (a) Viviparous/विविपेरस
- (b) Succulent/रसदार
- (c) Herbaceous/हरबसूस
- (d) Heterophyllous/हिटरोफिलस

Q7. What is a mushroom?

एक मशरूम क्या है?

- (a) Fungi/कवक
- (b) Plant/पौधा
- (c) Animal/जीव
- (d) Bacteria/जीवाणु

Q8. Which of the following are required for the formation of bones and teeth?

हड्डियों और दांतों के निर्माण के लिए निम्नलिखित में से क्या आवश्यक है?

- (a) Sodium and Potassium/सोडियम और पोटेशियम
- (b) Iron and Calcium/आयरन और कैल्शियम
- (c) Sodium and Calcium/सोडियम और कैल्शियम
- (d) Calcium and Phosphorus/कैल्शियम और फास्फोरस

Q9. Heart beats are caused by an electrical current that originates in the:

दिल की धड़कन किसके द्वारा उत्पन्न एक विद्युतीय धारा के कारण होती है:

- (a) Brain/मस्तिष्क
- (b) Blood/रक्त
- (c) Heart/दिल
- (d) Spinal cord/मेरुदण्ड

Q10. Which of the following is not the work of roots
निम्नलिखित में से क्या जड़ का कार्य नहीं है-

- (a) Photosynthesis/ प्रकाश संश्लेषण
- (b) water absorption/जल अवशोषण
- (c) Absorption nutrients/पोषक तत्व का अवशोषण
- (d) To help the plants/पौधों की मदद करना

Q11. Which of the following has the maximum efficiency
to convert solar energy into chemical energy?

सौर ऊर्जा को रासायनिक ऊर्जा में परिवर्तित करने के लिए निम्नलिखित किसकी दक्षता अधिकतम है?

- (a) Chlorella/क्लोरेल्ला
- (b) Tiger/बाघ
- (c) Earthworm/केंचुआ
- (d) Cuscutta/अमरबेल

Q12. The disease 'Tetanus' is also known as
रोग 'टेटनस' को किसके रूप में भी जाना जाता है-

- (a) Gangrene/अवसाद
- (b) Shingles/दाद

(c) Lock jaw/लॉक जॉव

(d) Whooping cough/काली खांसी

Q13. The diseases caused by nematodes
नेमाटोड्स के कारण कौन सा रोग होता है?

- (a) Filaria/फाइलेरिया
- (b) Fluorosis/फ्लोरोसिस
- (c) Encephalitis/इंसेफेलाइटिस
- (d) Leprosy/कुष्ठ रोग

Q14. Which one of the following pairs matches one
another?

निम्नलिखित में से कौन सा युग्म एक दूसरे से मेल खाता है?

- (a) Cataract – Thyroid gland/मोतियाबिंद – थाइरॉयड ग्रंथि
- (b) Jaundice – Liver/पीलिया – यकृत
- (c) Typhoid – Lungs/टाइफाइड - फेफड़े
- (d) Pneumonia – Eyes/निमोनिया - आंखें

Q15. Which of the following is a broad-spectrum drug
निम्नलिखित में से क्या एक व्यापक-स्पेक्ट्रम ड्रग है

- (a) Chloramphenicol/क्लोरोराम्फेनिकोल
- (b) Paracetamol/पैरासिटामोल
- (c) Xylocaine/जैलोकैन
- (d) Chloroprene/क्लोरोप्रिनिन

S1. Ans.(a)

Sol. Vermiculture is the process of managing and cultivating earthworms. Earthworms can help turning organic waste into nutrient-rich soil for your garden.

S2. Ans.(d)

Sol. The scientific study of old age, the process of aging and the particular problems of old people is called Gerontology.

S3. Ans.(d)

Sol. Genetics is the study of genes, heredity and genetic variation in living organisms.

S4. Ans.(d)

Sol. The Mesozoic Era is the age of the dinosaurs and lasted almost 180 million years from approximately 250 to 65 million years ago. This era includes three well known periods, called the Triassic, Jurassic and Cretaceous periods.

S5. Ans.(d)

Sol. Poison gland of snakes is homologous to salivary glands of vertebrates. Snake venom is actually the refined from of its saliva.

S6. Ans.(b)

Sol. A succulent is a plant that stores water for times when water is not available to it. Succulent plants are generally found in arid environments such as deserts and semi-deserts.

S7. Ans.(a)

Sol. Mushroom is a fungus which is used as a vegetable

for food.

S8. Ans.(d)

Sol. Teeth and bones both are hard, white and heavy. Teeth are composed of calcium, phosphorous and other minerals. Bones contain calcium, phosphorus, sodium and other minerals, but mostly consist of the protein collagen.

S9. Ans.(c)

Sol. An electrical impulse generator, called the "sinus node", sends signals from the right atrium to trigger the heart beat. Like a natural pacemaker, the electrical current follows a web of pathways through the heart, causing the chambers to squeeze and relax in a steady, rhythmic sequence that draws blood into the heart and pulse it out.

S10. Ans.(a)

Sol. Photosynthesis takes place in leaves which prepare food for the plants by absorbing light, CO₂ and water. Generally, root cells do not contain chloroplasts; so there is no chance of photosynthesis.

S11. Ans.(a)

Sol. In the process of photosynthesis, solar energy changes into chemical energy. Chlorella is a single-celled green algae belonging to the class of Chlorophyceae. Chlorella is believed to be capable in serving as a potential food and energy source.

S12. Ans.(c)

Sol. Tetanus is a bacterial disease caused by the bacteria Clostridium tetani. When the tetanus bacteria invade the body through a wound, they produce a toxin or poison, that causes muscles to become tight, which is very painful. Tetanus mainly affects the neck and abdomen. It is also known as "lock jaw" because it often causes a person's neck and jaw muscles to lock, making it hard to open the mouth or swallow.

S13. Ans.(a)

Sol. Filariasis is a parasitic infection caused by thread-like nematodes (filariae) that belong to the roundworm superfamily Filarioidea. The disease spreads from person to person by female Culex mosquito. Edema is one of the most common symptoms of filariasis and can lead to elephantiasis, which is characterized by thickened skin and massive swelling.

S14. Ans.(b)

Sol. Cataract – Eye
Jaundice – Liver
Typhoid – Intestine
Pneumonia – Lungs

S15. Ans.(a)

Sol. The term broad-spectrum antibiotic refers to an antibiotic that acts against a wide range of disease-causing bacteria. Broad-spectrum antibiotic acts against both Gram-positive and Gram-negative bacteria, in

contrast to a narrow-spectrum antibiotic, which is effective against specific-chloramphenicol is also known as chloronitromycin. It is a broad-spectrum antibiotic drug used against serious infections such as typhoid fever.

1. The softest mineral, Talc (Soapstone) is mainly: .
नरम खनिज, टॉल्क (सोपस्टोन) मुख्य रूप से क्या है:

- (a) Manganese Silicate/मैंगनीज सिलिकेट
- (b) Sodium Silicate/सोडियम सिलिकेट
- (c) Sodium Phosphate/सोडियम फॉस्फेट
- (d) Magnesium Silicate/मैग्नीशियम सिलिकेट

Q2. To make the steel hard requires increase in-
इस्पात की कठोरता बढ़ाने के लिए किसकी वृद्धि आवश्यक है -

- (a) The quantity of Carbon/कार्बन की मात्रा
- (b) The quantity of Manganese/मैंगनीज की मात्रा
- (c) The quantity of Silicon/सिलिकॉन की मात्रा
- (d) The quantity of Chromium/क्रोमियम की मात्रा

Q3. The highest amount of Carbon is in-
कार्बन की सबसे अधिक मात्रा किसमें है -

- (a) Pig Iron/पिग आयरन
- (b) Wrought Iron /रोट आयरन
- (c) Steel/स्टील
- (d) Alloy Steel/मिश्र इस्पात

Q4. Which of the following is not in the form of crystal?
निम्नलिखित में से क्या क्रिस्टल के रूप में नहीं होता है?

- (a) Diamond/हीरा
- (b) Quartz/क्वार्ट्ज
- (c) Sulphur/सल्फर
- (d) Graphite /ग्रेफाइट

Q5. Burning of Hydrogen produces-
हाइड्रोजन के जलने से क्या उत्पन्न होता है -

- (a) Oxygen/ऑक्सीजन
- (b) Ash/राख
- (c) Soil /मिट्टी
- (d) Water /पानी

Q6. What is heavy water?

हैवी पानी क्या है?

- (a) Oxygen + Heavy Hydrogen/ऑक्सीजन + हैवी हाइड्रोजन
- (b) Hydrogen + Oxygen/हाइड्रोजन + ऑक्सीजन
- (c) Hydrogen + New Oxygen/हाइड्रोजन + न्यू ऑक्सीजन
- (d) Heavy Hydrogen + Heavy Oxygen/हैवी हाइड्रोजन + हैवी ऑक्सीजन

Q7. Water is a good solvent of ionic salts because-
पानी आयनिक लवणों का एक अच्छा विलायक है क्योंकि -

- (a) It has a high boiling point/इसका उच्च क्वथनांक है

- (b) It has a high dipole moment/इसमें एक उच्च द्विध्रुव आघूर्ण है
 (c) It has a high specific heat/इसमें एक उच्च विशिष्ट ताप है
 (d) It has no colour/इसका कोई रंग नहीं है

Q8. Large quantities of drinking water is prepared from impure water by-

अशुद्ध पानी से पीने के पानी की बड़ी मात्रा को किसके द्वारा तैयार किया जाता है -

- (a) Desalination /डिसेलिनेशन
 (b) Distillation /आसवन
 (c) Ion-exchange/आयन विनिमय
 (d) Decantation/निस्तारण

Q9. Helium is preferred to Hydrogen in air balloons because it-

हवा के गुब्बारे में हाइड्रोजन की तुलना में हेलियम को पसंद किया जाता है क्योंकि यह -

- (a) Is cheaper/सस्ती है
 (b) Is less dense /कम घन है
 (c) Has greater lifting power /अधिक उठने की शक्ति है
 (d) Does not form an explosive mixture with air/हवा के साथ एक विस्फोटक मिश्रण का निर्माण नहीं करता है

**Q10. What is untrue for bleaching powder?
 ब्लीचिंग पाउडर के लिए क्या सत्य नहीं है?**

- (a) It is more soluble than water/यह पानी की तुलना में अधिक घुलनशील है
 (b) It is powder of light yellow colour/यह हल्के पीले रंग का पाउडर है
 (c) It is oxidant/यह ऑक्सीडेंट है
 (d) It releases chlorine after reaction with dilute acid/ जलमिश्रित अम्ल के साथ प्रतिक्रिया के बाद यह क्लोरीन जारी करता है

**Q11. Which one of the following is viscous?
 निम्नलिखित में से क्या एक चिपचिपा द्रव्य है?**

- (a) Alcohol/एल्कोहॉल
 (b) Water /पानी
 (c) Honey/शहद
 (d) Gasoline /गैसोलीन

**Q12. Which acid is used in photography-
 फोटोग्राफी में कौन सा एसिड का इस्तेमाल होता है -**

- (a) Formic acid/फॉर्मिक अम्ल
 (b) Oxalic acid/ऑक्सालिक अम्ल
 (c) Citric acid/साइट्रिक अम्ल
 (d) Acetic acid/असेटिक अम्ल

Q13. Which one of the following acids is used in the manufacturing of baking powder?

बेकिंग पाउडर के निर्माण में निम्नलिखित में से किस एसिड का उपयोग किया जाता है?

- (a) Oxalic Acid/ऑक्सालिक अम्ल
 (b) Lactic Acid/लैक्टिक अम्ल
 (c) Tartaric Acid/टार्टरिक अम्ल

- (d) Benzoic Acid/बेंज़ोइक अम्ल

Q14. The main component of honey is:

शहद का मुख्य घटक क्या है:

- (a) Glucose/ग्लूकोज
 (b) Sucrose/सुक्रोज
 (c) Maltose/माल्टोस
 (d) Fructose /फ्रुक्टोज

**Q15. Methane is present in the atmosphere of-
 मीथेन किसके वातवरण में मौजूद है -**

- (a) Moon/चन्द्रमा
 (b) Sun /सूर्य
 (c) Jupiter /बृहस्पति
 (d) Mars /मंगल

Solutions

S1. Ans.(d)

Sol. Talc is a mineral which is composed of hydrated Magnesium silicate formula $Mg_3 Si_4 O_{10} (OH)_2$.

S2. Ans.(a)

Sol. Steels are alloys of Iron and other elements primarily Carbon and are widely used in construction and other area. Carbon inclusion in Iron as a hardening agent which strengthens Iron by distorting its crystal lattice. This distortion result in hardening.

S3. Ans.(a)

Sol. Pig Iron has a very high Carbon content, typically 3.5–4.5%. Wrought Iron is an Iron alloy with a very low Carbon (less than 0.08%) content. Steels containing 0.2% to 1.5% Carbon are known as Carbon steel. The amount of Carbon in alloy steel ranges from 0.1% to 1%.

S4. Ans.(c)

Sol. Salt, Sugar, Diamond, Quartz. Ice, Graphite etc. are in the formed crystal but Sulphur is not. It is a multivalent nonmetallic chemical element.

S5. Ans.(d)

Sol. Hydrogen gas is highly flammable and burns in air at a very wide range of concentrations between 4% to 75% by volume. Hydrogen gas cannot burn in absence of air. But by burning with Oxygen it produces water.

S6. Ans.(a)

Sol. Heavy water (D_2O) Deuterium Oxide is used as a moderator and coolant in nuclear reactors because it slows down neutrons effectively and also has a low probability of absorption of neutrons. Deuterium is an isotope of Hydrogen which comprises both a neutron and a proton. D_2O is a form of water which reacts with Oxygen to form Deuterium Oxide (D_2O), also known as heavy water.

S7. Ans.(b)

Sol. Water is good solvent due to its polarity which can easily dissolve into polar compounds. Water dissolves ionic salts by hydrating their component ions. For example, water dissolves NaCl by hydrating and stabilizing the Na⁺ and Cl⁻ ions.

S8. Ans.(a)

Sol. Desalination is a process that removes minerals from saline water (Also refer to removal of salts and minerals). Seawater desalination has a very effective way of production of potable water for drinking and industries.

S9. Ans.(d)

Sol. Helium is preferred over Hydrogen because it is inert in nature. Also, Hydrogen is highly flammable and explosive so it would make it unsafe to use in balloons.

S10. Ans.(a)

Sol. Calcium Hypochlorite or Calcium Oxychloride is an inorganic compound. It is also known as bleaching powder. Its chemical formula is Ca(OCl) Cl. It is a white solid, although commercial samples appear yellow. Bleaching powder is used for water treatment and acts as a bleaching agent. It is not highly soluble in water.

S11. Ans.(c)

Sol. 'Viscosity' of a fluid is a measure of its resistance to gradual deformation by stress or tensile stress. For liquids, it corresponds to the informal concept of 'Thickness'. For example, Honey has a much higher viscosity than water.

S12. Ans.(b)

Sol. Oxalic acid is used in photography as Ferrous Oxalate. Formic acid is found in ants. Citric acid is found in lemon and Acetic acid is also found in vinegar.

S13. Ans.(c)

Sol. Tartaric acid is used in the manufacturing of baking powder. This tartaric acid occurs naturally in many plants particularly in grapes, bananas and tamarinds. It is commonly combined with baking soda to function as a leavening agent in recipes and is one of the main acids found in wine.

S14. Ans.(d)

Sol. The main components of honey are fructose – 38.2%, glucose – 31.3%, sucrose – 1.3%, maltose – 7.1% and water – 17.2%. Fructose or fruit sugar is simple ketonic monosaccharide found in many plants.

S15. Ans.(d)

Sol. First NASA Goddard Space Flight Centre confirmed the presence of Methane in the atmosphere of Mars. In 2014, Mars Express Orbiter and Canada France Telescope at Hawaii further confirmed the presence of methane on Mars.

Q1. Honey bees are used in:
मधुमक्खियों का उपयोग किया जाता है:

- (a) Sericulture/रेशम उत्पादन
- (b) Tissue culture/उत्तक संवर्धन
- (c) Apiculture/मधुमक्खी पालन
- (d) Pisciculture/मत्स्यपालन

Show Answer

S1. Ans.(c)

Sol. Honey bees are used in apiculture.

Q2. The study of aging is known as-
उम्र बढ़ने के अध्ययन को जाना जाता है-

- (a) Gerontology/जराविज्ञान
- (b) Ethnology/मानव जाति विज्ञान
- (c) Anthropology/नृविज्ञान
- (d) Thanatology/थानटोलॉजी

Show Answer

S2. Ans.(a)

Sol. Gerontology is the study of the social, psychological, cognitive and biological aspects of aging. Oncology is the branch of medical science that deals in treating people suffering from cancer. Teratology is the study of abnormalities of physiological development. Ornithology is a branch of zoology that is related to the study of birds.

Q3. Of the following which one is not a fish?
निम्नलिखित में से कौन एक मछली नहीं है?

- (a) Starfish/स्टारफिश
- (b) Sawfish/सॉफिश
- (c) Pipefish/पाइपफिश
- (d) Guitarfish/गिटारफिश

Show Answer

S3. Ans.(a)

Sol. Starfish popularly called sea stars are related to the phylum Echinodermata while true fishes belong to the phylum Chordata. Starfish do not have gills, scales or fins which are basic characteristics of fishes.

Q4. Smallest man-like ape is:
बन्दर जैसा सबसे छोटा आदमी होता है:

- (a) Gibbon/लंगूर
- (b) Chimpanzee/चिंपांजी
- (c) Gorilla/गोरिल्ला
- (d) Orangutan/आरंगुटान

Show Answer

S4. Ans.(a)

Sol. The gorilla, chimpanzee, and orangutan are called great apes in recognition of their comparatively large size and human like features. The gibbons are called lesser apes. They are smallest, cleanest and gentlest man like an ape.

Q5. 'Cloves' are-
'लौंग' हैं-

- (a) Nodules of stem/तने की गाँठ
- (b) Nodules of roots/जड़ों की गाँठ
- (c) Leaves/पत्तियाँ
- (d) Dried flowers/सूखे फूल

Show Answer

S5. Ans.(d)

Sol. Cloves are the aromatic closed, dried floral bud, which is used in Ayurvedic medicine, making food and as an anodyne for dental emergencies.

Q6 Who discovered the first antibiotic?
पहले एंटीबायोटिक की खोज किसने की?

- (a) W Fleming/डब्ल्यू फ्लेमिंग

- (b) Louis Pasteur/लुई पाश्चर
 (c) C Waksman/सी वक्समन
 (d) A Fleming/ए फ्लेमिंग

Show Answer

S6. Ans.(d)

Sol. the first true antibiotic, was discovered by Alexander Fleming.

Q7. Microbial Type Culture Collection Centre is located in –

माइक्रोबियल टाइप कल्चर कलेक्शन सेंटर स्थित है -

- (a) Hyderabad/हैदराबाद
 (b) Bangalore/बैंगलोर
 (c) Chandigarh/चंडीगढ़
 (d) New Delhi/नई दिल्ली

Show Answer

S7. Ans.(c)

Sol. The Microbial Type Culture Collection and Gene Bank (MTCC), a national facility established in 1986 is funded jointly by the Department of Biotechnology (DBT) ... at the Institute of Microbial Technology (IMTECH), Chandigarh.

Q8. The main constituent of opium is:

अफीम का मुख्य घटक होता है:

- (a) Morphine/मॉर्फिन
 (b) Heroin/हेरोइन
 (c) Atropine/एट्रोपिन
 (d) Quinine/क्विनिन

Show Answer

S8. Ans.(a)

Sol. Opium is a substance that is derived from the collecting and drying processes of the milky juice that comes from the seed pods of the poppy plant. The primary component of opium is 12% morphine which is an alkaloid that is often processed chemically to produce illegal drugs such as heroin.

Q9. The most abundant element found in the human body is-

मानव शरीर में सबसे प्रचुर मात्रा में पाए जाने वाला तत्व है:

- (a) Iron/आयरन
 (b) Sodium/सोडियम
 (c) Oxygen/ऑक्सीजन
 (d) Iodine/आयोडीन

Show Answer

S9. Ans.(c)

Sol. Nearly 99% of the mass of human body consist of just six chemical elements: Oxygen, carbon, hydrogen, nitrogen, calcium and phosphorus. Oxygen is the most abundant element in the human body.

Q10. The smallest bone in our body is found in our- हमारे शरीर में सबसे छोटी हड्डी हमारे:

- (a) Ear/कान
 (b) Nose/नाक
 (c) Eye/नेत्र
 (d) Toe/पैर की अंगुली

Show Answer

S10. Ans.(a)

Sol. the stapes is the lightest stirrup – shaped bone and the smallest bone in the human body found in the middle of humans ears. While femur is the largest bone in the human body. It is located in the upper leg which connects the knee at one end and fits into the hip socket at the other.

Q11. Blood group AB can accept blood from a person which blood group.

रक्त समूह AB एक व्यक्ति से रक्त को स्वीकार कर सकता है जिसका रक्त समूह हो-

- (a) A Only/केवल A
 (b) B Only/केवल B
 (c) AB Only/केवल AB
 (d) Any Group/कोई भी समूह

Show Answer

S11. Ans.(d)

Sol. Blood group AB individuals have both A and B antigens on the surface of their RBCs and their blood plasma does not contain any antibodies. Therefore an individual with type AB blood can receive blood from any group (with AB being preferable), but cannot donate blood to any group other than AB. They are known as universal recipients.

Q12. The main function of white blood cells is- सफेद रक्त कोशिकाओं का मुख्य कार्य है-

- (a) Transport of oxygen/ऑक्सीजन का परिवहन
 (b) Transport of carbon dioxide/कार्बन डाइऑक्साइड का परिवहन
 (c) To develop resistance towards disease/रोग के प्रति प्रतिरोध का विकास करना
 (d) None of the above/उपरोक्त में से कोई भी नहीं

Show Answer

S12. Ans.(c)

Sol. White blood corpuscles (WBCs) are disease-fighting cells found in blood. When our blood is infected by any harmful bacteria or virus at any place in the body, white bloods corpuscles reaches there and eats up or destroys these harmful outsiders.

Q13. Photosynthesis occurs in- प्रकाश संश्लेषण होता है-

- (a) Night/रात
 (b) Day and night/दिन और रात
 (c) Day or night/दिन या रात
 (d) Only day/केवल दिन

Show Answer

S13. Ans.(c)

Sol. Through the process of photosynthesis, green plants have a capacity of manufacturing their food from simple substances as CO₂ and H₂O in presence of light. Normally, plants utilize sunlight (day) but marine algae also use moonlight. Photosynthesis even occurs in electric light.

Q14. The vitamin available from sun rays is सूर्य की किरणों से उपलब्ध विटामिन होती है:

- (a) Vitamin A/विटामिन A
 (b) Vitamin B/विटामिन B
 (c) Vitamin C/विटामिन C
 (d) Vitamin D/विटामिन D

Show Answer

S14. Ans.(d)

Sol. The source of Vitamin D is sun rays. In fact, vitamin D is synthesized in our dermal cell by sun rays which is released in the blood. Besides of sun ray, Vitamin D is obtained from butter, the yolk of egg, liver, and kidney, etc. Rickets in children and osteomalacia in adults occur due to deficiency of Vitamin D. Together with Calcium deficiency of vitamin D causes osteoporosis in older adults.

Q15. Cyanocobalamin is- स्यानोकोबालमिन है-

- (a) Vitamin C/विटामिन C
 (b) Vitamin B₂/विटामिन B₂
 (c) Vitamin B₆/विटामिन B₆
 (d) Vitamin B₁₂/विटामिन B₁₂

Show Answer

S15. Ans.(d)

Sol. Vitamin B₁₂ (Cyanocobalamin) is a water soluble vitamin. It contains a metallic ion cobalt. Its chemical formula is C₆₃ H₈₈ Co N₁₄ O₁₄ P. It functions as a cofactor for enzymes in the metabolism of amino acids and fatty acids, required for new cell synthesis, normal blood formation and neurological function. Its deficiency causes pernicious anaemia, nervous symptoms etc.

**Q1. The pulse in the human wrist beats-
मानव कलाई की नाड़ी -**

- (a) Faster than the heart/हृदय की तुलना में तेज होती है
 (b) Slower than the heart/हृदय की तुलना में धीमी होती है
 (c) At the same rate as the heart/हृदय के समान गति से चलती है
 (d) Independently of the heart/हृदय से स्वतंत्र होती है

Show Answer

Ans.(c)

Sol. Pulse rate is defined as the rate at which our heart beats. It is the number of times our heart beats per minute (bpm). By checking our pulse using a pulse rate chart, we can find out how well our heart is working as our general health and fitness levels.

Q2. What is hemoglobin?

हीमोग्लोबिन क्या है?

- (a) Substance found in the leaves of plants /पौधों की पत्तियों में पाया जाने वाला पदार्थ
 (b) Substance found in the bone-marrow/अस्थि-मज्जा में पाया जाने वाला पदार्थ
 (c) Substance found in human blood/मानव रक्त में पाया जाने वाला पदार्थ
 (d) Secretion coming out from the pituitary gland/पिट्यूटरी ग्रंथि से आने वाला स्राव

Show Answer

Ans.(c)

Sol. Hemoglobin is the protein molecule in red blood cells that carries oxygen from the lungs to the body's tissues and returns carbon dioxide from the tissues back to the lungs.

Q3. In which of the following creatures haemoglobin is dissolved in protoplasm-

निम्नलिखित में किस प्राणी में हीमोग्लोबिन प्रोटॉपलाज़म में विघटित होता है -

- (a) Frog/मेढक
 (b) Fish/मछली
 (c) Human/मानव
 (d) Earthworm/केंचुआ

Show Answer

Ans.(d)

Sol. An earthworm is one of the animals that are classified in the Annelida phylum. In an earthworm, hemoglobin is dissolved in the plasma. The earthworm has a closed circulatory system in which blood is confined to blood vessels which recirculates again and again to get maximum use of it.

Q4. BCG vaccination (Bacillus Calmette Guerin) is injected to get immunity from—

BCG टीका (बैसिलस कैल्मेटे गुएरिन) किससे प्रतिरक्षा प्राप्त करने के लिए लगाया जाता है —

- (a) polio/पोलियो
 (b) cholera/हैज़ा
 (c) small pox/स्मॉल पॉक्स
 (d) tuberculosis/तबक्का

Show Answer

Ans.(d)

Sol. BCG vaccine. *Bacillus Calmette–Guérin (BCG) vaccine is a vaccine primarily used against tuberculosis (TB).*

Q5. When there is a decrease in the concentration of oxygen in the blood, the rate of breathing:

जब रक्त में ऑक्सीजन के संकेन्द्रण में कमी होती है, तो श्वास की दर:

- (a) Decreases/कम हो जाती है
 (b) Increases /बढ़ती है
 (c) Does not change/नहीं बदलती
 (d) First decreases, then increases /पहले घट जाती है, फिर बढ़ती है

Show Answer

Ans.(b)

Sol. Hypoxemia or low blood oxygen describes a lower than normal level of oxygen in the blood. In order to function properly, our body needs a certain level of oxygen circulating in the blood to cells and tissues. When this level of oxygen falls below a certain amount, hypoxemia occurs and you may experience shortness of breath. In other words, when there is a decrease in the concentration of oxygen in the blood, the rate of breathing increases.

Q6. Which of the following does act both as an exocrine gland and as an endocrine gland?

निम्नलिखित में से कौन एक्सोक्राइन ग्रंथि और अंतःस्रावी ग्रंथि दोनों के रूप में कार्य करता है?

- (a) Adrenal/अधिवृक्क
 (b) Pancreas/अग्राशय
 (c) Testis/वृषण
 (d) Ovary/अंडाशय

Show Answer

Ans.(b)

Sol. The pancreas gland works both as endocrine and exocrine gland.

**Q7. Nutraceutical are products which have-
न्यूट्रास्यूटिकल वह उत्पाद हैं जिनमें-**

- (a) Nutrients vitamin and minerals /पोषक तत्व विटामिन और खनिज है
 (b) Nutrients protein and fatty acids/पोषक तत्व प्रोटीन और फैटी एसिड है
 (c) Nutrient and toxic effect/पोषक तत्व और विषाक्त प्रभाव है
 (d) Nutrient and medicinal effect/पोषक तत्व और औषधीय प्रभाव है

Show Answer

Ans.(d)

Sol. The term "nutraceutical" is used to describe any food or part of food supplements that offers a medical or health benefit beyond simple nutrition. Such benefits many include the prevention or recurrence of the disease.

Q8. Enzyme that is formed by the hydrolysis of starch to glucose is-

ग्लूकोज के स्टार्च के हाइड्रोलिसिस द्वारा बनाये जाने वाला एंजाइम कौन सा है -

- (a) Invertase/इंवरटेस
 (b) Amylase/एमाइलेस
 (c) Dehydrogenase/डिहाइड्रोजनेज
 (d) Anhydrase/

Show Answer

Ans.(b)

Sol. Amylase is present in the saliva of humans and some other mammals, where it begins the chemical process of digestion. Amylase is an enzyme that catalyzes the hydrolysis of starch into glucose.

Q9. 'Kanchan' is an improved variety of -
 'कंचन' किसकी एक उन्नत विविधता है -

- (a) Grapes/अंगूर
 (b) Indian gooseberry/भारतीय करौदा
 (c) Guava/अमरूद
 (d) Mango/आम

Show Answer

Ans.(b)

Sol. The fruits of Indian gooseberry are rich in medicinal properties. It is rich in vitamin C. Kanchan, Krishna and Banarasi are some of its improved varieties.

Q10. Which of the following is found in the composition of Vitamin 'D'?

निम्नलिखित में से क्या विटामिन 'D' की संरचना में पाया जाता है?

- (a) Ascorbic acid/ एस्कॉर्बिक एसिड
 (b) Calciferol/कैल्सिफैरोल
 (c) Folic acid/फोलिक एसिड
 (d) Retinol/रेटिनोल

Show Answer

Ans.(b)

Sol. There are two chemical forms of vitamin D, namely vitamin D₂ sometimes referred to as (ergocalciferol) and vitamin D₃ sometimes referred to a (cholecalciferol). Vitamin C is known as ascorbic acid whereas vitamin A is known as retinol.

Q11. A rich source of both protein and fat is:
 प्रोटीन और वसा दोनों का एक समृद्ध स्रोत क्या है:

- (a) Coconut/नारियल
 (b) Groundnut/मूंगफली
 (c) Soyabean/सोयाबीन
 (d) Sunflower/सूरजमुखी

Show Answer

Ans.(b)

Sol. The groundnut is a rich source of both proteins and fat. Groundnut contains 25.3% protein and 48.1% fat. In groundnut, protein 1.3 times of meat, 2.5 times of eggs and 8 times of fruits in found.

Q12. The substance responsible for bread-making quality in wheat is-

गेहूँ में रोटी बनाने की गुणवत्ता के लिए जिम्मेदार पदार्थ कौन सा है -

- (a) Glutein/ग्लूटिन
 (b) Globulin /ग्लोब्युलिन
 (c) Glycin /ग्लाइसिन
 (d) Lycine/लाइसिन

Show Answer

Ans.(a)

Sol. Glutein is the protein composite, found in wheat. Glutein gives elasticity to dough, helping its growth and keep its shap and often gives the final product a chewy texture.

Q13. Which of the following gives maximum energy in metabolic processes?

निम्नलिखित में से क्या उपापचयी प्रक्रियाओं में अधिकतम ऊर्जा प्रदान करता है?

- (a) Carbohydrates/कार्बोहाइड्रेट
 (b) Fats/वसा
 (c) Proteins/प्रोटीन
 (d) Minerals/खनिज पदार्थ

Show Answer

Ans.(b)

Sol. Fats have the highest energy value since 1 g of fat contains 9.3 kcal (37 kJ) of energy; one gram of proteins contains 5.4 kcal; one gram of carbohydrates contains 4.2 kcal of energy.

Q14. A plant with green leaves viewed in red light will appear—

लाल रौशनी में देखने पर हरे रंग के पत्तों वाला पौधा किस रंग का दिखाई देगा —

- (a) Black/काला
 (b) Green/हरा
 (c) Red/लाल
 (d) Violet/बैंगनी

Show Answer

Ans.(a)

Sol. Red wavelengths are much longer than green, and when only red light hits a green object, the red is absorbed and very little of the light is reflected back, so therefore the color appears black.

Q15. Sleep apnea is a serious sleep disorder, in which people

स्लीप एपनिया एक गंभीर नींद विकार है, जिसमें लोग

(a) Walk during sleep without knowing what he or she is doing./वह क्या कर रहा है, यह जाने के बिना वह नींद के दौरान चलते है.

(b) Sleep with eyelids half open./वह आधी खुली पलकों के साथ सोते है.

(c) Briefly and repeatedly stop breathing during sleep./नींद के दौरान संक्षेप में और बार-बार श्वास लेना बंद कर देते है.

(d) Make loud snoring sound while a sleep./एक नींद के दौरान जोर से खरटि लेते है.

Show Answer

Ans.(c)

Sol. Sleep apnea is a sleep disorder characterized by pauses in breathing or instances of shallow or infrequent breathing during sleep.

Q1. The material used in the fabrication of a transistor is

एक ट्रांजिस्टर के निर्माण में प्रयुक्त पदार्थ है:

- (a) Aluminum/अल्युमीनियम
 (b) Copper/तांबा
 (c) Silicon/सिलिकॉन
 (d) Silver/चांदी

Show Answer

Ans.(c)

Sol. The fabrication of the transistor is the process of creating the transistor that is used in electrical and electronics circuit. Transistors are made from very pure silicon or germanium, but certain other semiconductor materials can also be used.

Q2. In which of the following processes is energy released?

निम्न में से किस प्रक्रिया में ऊर्जा का उत्सर्जन होता है?

- (a) Respiration/श्वसन
- (b) Photosynthesis/प्रकाश संश्लेषण
- (c) Ingestion/घूस
- (d) Absorption/अवशोषण

Show Answer

Ans.(a)

Sol. Respiration is the process in which energy is released.

Q3. If a boy is sitting in a train, which is moving at a constant velocity throws a ball straight up into the air, the ball will -

यदि एक लड़का एक ट्रेन में बैठा है, जो निरंतर वेग पर चल रही है, और उसके द्वारा एक गेंद को सीधे हवा में फेंकने है, तो गेंद -

- (a) fall in front of him/उसके सामने गिरेगी
- (b) fall behind him /उसके पीछे गिरेगी
- (c) fall into hand /हाथ में गिरेगी
- (d) None of the above /उपरोक्त में से कोई भी नहीं

Show Answer

Ans.(c)

Sol. If a boy is sitting in a train, which is moving at a constant velocity throws a ball straight up into the air, the ball will fall into his hand.

Q4. A person is hurt on kicking a stone due to - एक पत्थर को लात मारने पर एक व्यक्ति को _____ के कारण चोट लगी है:

- (a) Inertia /जड़ता
- (b) Velocity /वेग
- (c) Reaction /रिएक्शन
- (d) Momentum /संवेग

Show Answer

Ans.(c)

Sol. A person is hurt on kicking a stone due to reaction. Here Newton third law of motion is applied which states that every action has equal and opposite reaction.

Q5. For a body moving with non-uniform acceleration - गैर-समान त्वरण के साथ बढ़ते शरीर के लिए-

- (a) Displacement-time graph is linear /विस्थापन समय ग्राफ रैखिक है
- (b) Displacement-time graph is non-linear /विस्थापन समय ग्राफ गैर-रैखिक है
- (c) Velocity-time graph is non-linear /वेग-समय ग्राफ गैर-रैखिक है
- (d) Velocity-time graph is linear /वेग-समय ग्राफ रैखिक है

Show Answer

Ans.(c)

Sol. For a body moving with non-uniform acceleration, the velocity-time graph is non linear.

Q6. Static science is associated with- स्थिर विज्ञान (स्टैटिक विज्ञान) किसके साथ संबंधित है?

- (a) Dynamic situation/डायनामिक स्थिति
- (b) Situation of rest/रेस्ट कि स्थिति
- (c) Mental situation/मानसिक स्थिति
- (d) Data analyzing/डेटा का विश्लेषण

Show Answer

Ans.(b)

Sol. Statics is a branch of mechanics associated with the situation or rest.

Q7. The colour of the star is an indication of its: तारे का रंग इसकी _____ का एक संकेत है:

- (a) Distance from the earth/पृथ्वी से दूरी
- (b) Temperature/तापमान
- (c) Luminosity/चमक
- (d) Distance from the sun/सूर्य से दूरी

Show Answer

Ans.(b)

Sol. The colour of the stars reflects the age of stars. Colour is reflected from the temperature is high, then the star is young. The star will be blue during young stage which indicates high temperature. If star is red the temperature is low.

Q8. Power of sunglass is- धूप के चश्मे की पावर है:

- (a) 0 Dioptre
- (b) 1 Dioptre
- (c) 2 Dioptre
- (d) 4 Dioptre

Show Answer

Ans.(a)

Sol. The power of the sunglass is 0 dioptre.

Q9. For shaving, one uses- शेविंग के लिए, _____ का उपयोग करना चाहिए है -

- (a) Concave mirror/अवतल दर्पण
- (b) Plain mirror/समतल दर्पण
- (c) Convex mirror/उत्तल दर्पण
- (d) None of these/इनमें से कोई नहीं

Show Answer

Ans.(a)

Sol. People use a concave mirror for shaving because when a man standing between the principal focus and pole of a concave mirror, he sees as enlarged, the erect and virtual image of his face.

Q10. Which of the following lens is used to minimize Myopia?

निम्न में से कौन सा लेंस मिओपिया को कम करने के लिए उपयोग किया जाता है?

- (a) Convex lens/उत्तल लेंस
- (b) Concave lens/अंतराल लेंस
- (c) Cylindrical lens/बेलनाकार लेंस
- (d) None of these/इनमें से कोई नहीं

Show Answer

Ans.(b)

Sol. A concave lens is used to remove the defect of myopia.

Q11. When beams of red, blue and green lights fall on the same spot, the colour of the light becomes:

जब लाल, नीले और हरे रंग की रोशनी कि बीम एक ही स्थान पर गिरती हैं, तो लाइट का रंग बन जाता है:

- (a) Violet/बैंगनी
- (b) Red/लाल
- (c) Yellow/पीला
- (d) White/सफेद

Show Answer

Ans.(d)

Sol. Red, green and blue are referred to as the primary colours of light. If we add the pair of primary colours we obtain white colour.

Q12. The oil in the wick of an oil lamp rises up due to - एक तेल के चिराग के तल में तेल किसकी वजह से ऊपर बढ़ता है -

- (a) Capillary action/केशिका क्रिया
 (b) Low viscosity of oil/तेल की कम चिपचिपाहट
 (c) Gravitational force/गुरुत्वाकर्षण बल
 (d) Pressure difference/दबाव अंतर

Show Answer

Ans.(a)

Sol. The oil in the wick of an oil lamp rises up is an example of capillary action.

Q13. The working of a rocket is based on the principle of -

रॉकेट का कार्य किसके सिद्धांत पर आधारित है -

- (a) Conservation of momentum/गति का संरक्षण
 (b) Conservation of mass/द्रव्यमान का संरक्षण
 (c) Conservation of energy/ऊर्जा का संरक्षण
 (d) Conservation of angular momentum/कोणीय गति का संरक्षण

Show Answer

Ans.(a)

Sol. The working principle of rocket is conservation of momentum.

Q14. Which among the following phenomena of the optics makes the Endoscopy capable of examining the internal organs such as Abdomen?

निम्नलिखित में से किस प्रकाशिकी घटना में?

- (a) Interference/इंटरफ़ेस
 (b) Total Internal Reflection/कुल आंतरिक प्रतिबिंब
 (c) Diffraction/विवर्तन
 (d) Scattering/फैलाव

Show Answer

Ans.(b)

Sol. Total Internal Reflection is the principle used in endoscopy.

Q15. A bomb at rest explodes into a large number of tiny fragments. The total momentum of all the fragments - स्थिर स्थिति में रखा एक बम कई छोटे टुकड़ों में विस्फोटित हो जाता है. सभी टुकड़ों की कुल गति कितनी होगी -

- (a) is zero/शून्य
 (b) depends on the total mass of all the fragments/सभी टुकड़ों के कुल द्रव्यमान पर निर्भर करता है
 (c) depends on the speeds of various fragments/विभिन्न टुकड़ों की गति पर निर्भर करता है
 (d) is infinity/अनंत है

Show Answer

Ans.(a)

Sol. When bomb explode the total momentum of all particle fragments momentum is zero.

Q1. Sky is blue because- आकाश नीली किसके कारण है-

- (a) Blue colour in the sunlight is more than other colours/सूर्य के प्रकाश में नीला रंग अन्य रंगों से अधिक है
 (b) Short waves are scattered more than long waves by atmosphere/वायुमंडल द्वारा लघु तरंगें लंबी तरंगों से अधिक फैलती हैं
 (c) Blue colour is more absorbing to eyes/नीला रंग आंखों के लिए अधिक अवशोषित है
 (d) Atmosphere absorbs long wavelength more than short wavelength/वायुमंडल लघु तरंगदैर्घ्य की तुलना में लंबी तरंगदैर्घ्य को अधिक अवशोषित करता है

Show Answer

S1. Ans.(b)

Sol. Blue light which has the least wavelength of all the visible radiations is scattered most. The blue appearance of

the sky is due to scattering of sunlight from the atmosphere. Light of shorter wavelength is scattered by air molecules which because of their smaller size follow Rayleigh's scattering. Blue light is strongly scattered by the air molecules and reach the observer. This explains the blue colour of the sky.

Q2. The change of focal length of an eye lense is caused by action of the

एक नेत्र लेंस की फोकल दुरी में परिवर्तन किसके कारण होता है

- (a) Pupil/आंख की पुतली
 (b) Retina/दृष्टिपटल
 (c) Ciliary muscles/कैलीरी मांसपेशियों
 (d) Iris/आइरिस

Show Answer

S2. Ans.(c)

Sol. The eye lens is composed of a fibrous, jelly-like material. Its curvature can be modified to some extent by the ciliary muscles. The change in the curvature of the eye lens can thus change its focal length. When the muscles are relaxed, the lens becomes thin. Thus its focal length increases. This enables us to see distant objects clearly. When you are looking at objects closer to the eye, the ciliary muscles contract. This increases the curvature of the eye lens. The eye lens then becomes thicker. Consequently, the focal length of the eye lens decreases. This enables us to see nearby objects clearly.

Q3. Waves used for telecommunication are-

दूरसंचार के किस प्रकार की तरंगों का उपयोग किया जाता है -

- (a) Visible light /दृश्य प्रकाश
 (b) Infrared/इन्फ्रारेड
 (c) Ultraviolet/पराबैंगनी
 (d) Microwave/माइक्रो तरंग

Show Answer

S3. Ans.(d)

Sol. The microwaves are high-frequency signals in the 300 MHz to 300 Ghz range. The signals can carry thousands of channels at the same time, making it a very versatile communication system. Microwave is often used for point-to-point telecommunications. Today microwave is employed by telecommunication industry in the form of both terrestrial relays and satellite communication.

Q4. A dynamo which is said to generate electricity actually acts as a

विजली उत्पन्न करने वाला डायनेमो वास्तव में किसके रूप में कार्य करता है:-

- (a) Source of ions/आयनों का स्रोत
 (b) Source of electric charge/विद्युत आवेग का स्रोत
 (c) Converter of energy/ऊर्जा के परिवर्तक
 (d) Source of electrons/इलेक्ट्रॉनों के स्रोत

Show Answer

S4. Ans.(c)

Sol. A dynamo, which is also known as an electrical generator produces direct current through a commutator. It is basically a device which converts mechanical rotation into electric current according to Faraday's law.

Q5. The technique used to transmit audio signals in television broadcast is-

टेलीविज़न प्रसारण में ऑडियो सिग्नल संचारित करने के लिए किस तकनीक का इस्तेमाल होता है -

- (a) Amplitude modulation/आयाम मॉड्यूलन
 (b) Pulse code modulation/पल्स कोड मॉड्यूलेशन

- (c) Frequency modulation/आवृत्ति मॉडुलेशन
 (d) Time dimension multiplication/समय आयाम बहुलीकरण

Show Answer

S5. Ans.(c)

Sol. Television broadcasts emit two types of signals, audio and visual. These two signals require modulation to transmit both signals at the same time. Analog television requires transmission that uses specific modulation methods employing AM and FM signals in its transmission. Frequency modulation or FM is used for the audio part of the transmission. Amplitude modulation or AM is used in the video transmission.

Q6. Dynamo:-

डायनेमो:-

- (a) Converts electric energy into mechanical energy /विद्युत ऊर्जा को यांत्रिक ऊर्जा में रूपांतरित करता है
 (b) Converts chemical energy into electric energy/ रासायनिक ऊर्जा को विद्युत ऊर्जा में रूपांतरित करता है
 (c) Converts mechanical energy into electrical energy/यांत्रिक ऊर्जा को विद्युत ऊर्जा में रूपांतरित करता है
 (d) Converts electrical every into chemical energy/प्रत्येक को रासायनिक ऊर्जा में परिवर्तित करता है

Show Answer

S6. Ans.(c)

Sol. A dynamo is an electrical generator that produces direct current with the use of a commutator. It converts mechanical energy into electrical energy.

Q7. Transformer is used for- ट्रांसफार्मर किसके लिए उपयोग किया जाता है-

- (a) Converting AC into DC/AC को DC में परिवर्तित करने के लिए
 (b) Converting DC into AC/Converting DC को AC में परिवर्तित करने के लिए
 (c) To step up DC voltages/DC वोल्टेज को बढ़ाने के लिए
 (d) To step up or step down AC voltages/DC वोल्टेज को बढ़ाने या कम करने के लिए

Show Answer

S7. Ans.(d)

Sol. The transformer is used to step up and step down the alternating current. There are two types of coils in transformers (i) Primary coil (2) Secondary coil. Alternate current flows through the primary coil which inflicts the potential in the secondary coil.

Q8. Identify the mineral not associated with atomic power-

परमाणु शक्ति से ना जुड़े खनिज की पहचान करें -

- (a) Monazite/मोनाजाइट
 (b) Thorium/थोरियम
 (c) Beryllium /बेरीलियम)
 (d) Chromium/क्रोमियम

Show Answer

S8. Ans.(d)

Sol. All options except chromium are being used as nuclear fuel of radioactive elements.

Q9. Which of the following is not a fuel element?

निम्नलिखित में से क्या से कौन सा ईंधन तत्व नहीं है?

- (a) Uranium/यूरेनियम
 (b) Thorium/थोरियम
 (c) Radium /रेडियम
 (d) Helium/हीलियम

Show Answer

S9. Ans.(d)

Sol. All the radioactive elements are used as the nuclear fuel except helium because it is inert in nature. It does not form compounds or react with any other element.

Q10.The Pokhran II test was conducted on- पोखरण द्वितीय परीक्षण कब आयोजित किया गया था -

- (a) June 11th, 1998/11 जून, 1 998
 (b) June 9th, 1998/9 जून, 1 998
 (c) May 11th, 1998/11 मई, 1998
 (d) May 29th , 1998/ 29 मई, 1998

Show Answer

S10. Ans.(c)

Sol. Pokhran-II was the series of five nuclear bomb tests conducted by India under operation "Shakti" at the Indian Army's Pokhran test range on May 11, 1998. It was the second Indian nuclear test after Pokhran-I.

Q11. Which one of the following atomic plants of India is located in the IV Seismic Zone?

भारत का निम्नलिखित में से कौन सा परमाणु संयंत्र में IV भूकंपी क्षेत्र में स्थित है?

- (a) Kaiga /कैगा
 (b) Kalpakkam /कल्पक्कम
 (c) Narora/नरोरा
 (d) Tarapur/तारापुर

Show Answer

S11. Ans.(c)

Sol. Narora power station is located in the IV Seismic Zone. Kalpakkam is located into the II Seismic Zone. Kaiga and Tarapur are located into the III Seismic Sone.

Q12. The fuel used in Fast Breeder Test Reactor at Kalpakkam is

कल्पक्कम में फास्ट ब्रीडर टेस्ट रिएक्टर में इस्तेमाल होने वाला ईंधन कौन सा है?

- (a) Enriched Uranium/ समृद्ध यूरेनियम
 (b) Thorium/थोरियम
 (c) Plutonium /प्लूटोनियम
 (d) Tungsten/टंगस्टन

Show Answer

S12. Ans.(c)

Sol. The reactor's design is based on the French reactor Rhapsody, with several modifications. Plutonium-uranium mono-carbide developed indigenously as the driver fuel and went critical on 18th October, 1985.

Q13. Radioactive substance emits- रेडियोधर्मी पदार्थ क्या उत्सर्जित करता है -

- (a) Alpha rays/अल्फा किरणें
 (b) Beta rays/बीटा किरणें
 (c) Gamma rays /गामा किरणें
 (d) All the above/उपर्युक्त सभी

Show Answer

S13. Ans.(d)

Sol. Radioactive elements are elements that have an unstable nucleus. When the nuclei are considered unstable, they radiate alpha, beta and Gamma radiation and is converted into a stable element. This type of radiation is invisible for naked eye.

Q14. What are the links between Dhruva, Purnima and Cirus?

ध्रुव, पूर्णिमा और सायरस के बीच क्या संबंध हैं?

- (a) They are Indian research reactors/यह भारतीय अनुसंधान

रिएक्टर हैं

(b) They are stars/यह तारे हैं

(c) These are names of famous books/यह प्रसिद्ध किताबों के नाम हैं

(d) They are power plants/यह बिजली संयंत्र हैं

Show Answer

S14. Ans.(a)

Sol. Dhruva, Purnima, and Cirus are Indian research reactors.

Q15. What happens if the control rods are not used in a nuclear reactor?

यदि परमाणु रिएक्टर में कण्ट्रोल रोड्स का उपयोग नहीं किया जाता है तो क्या होता है?

(a) The reactor will stop working/रिएक्टर काम करना बंद कर देगा

(b) Chain process would go out of bounds/चेन प्रक्रिया सीमा से बाहर हो जाएगी

(c) The reactor will be slow to act/रिएक्टर कार्य करने में धीमे हो जाएगा

(d) The reactor will continue to work as it is/रिएक्टर काम करना जारी रखेगा

Show Answer

S15. Ans.(b)

Sol. Control rod constitutes a real-time control of fission Process which is crucial for both keeping the fusion chain reaction active and preventing it from accelerating beyond control. These rods are composed of chemical elements such as boron, silver, indium and cadmium.

Q1. Arthritis is caused by the deposition of which "of the following" in the joints of the body?

गठिया शरीर के जोड़ों में "निम्नलिखित में से" किसके निक्षेप के कारण होता है?

(a) Urea/यूरिया

(b) Uric acid/यूरिक अम्ल

(c) Albumin/एल्बुमिन

(d) Cholesterol/कोलेस्ट्रॉल

Show Answer

S1. Ans.(b)

Sol.

Arthritis is caused by deposition of uric acid crystals (mono-sodium urate) in joints and fluids within the body gout, is a painful form of arthritis.

Q2. Which of the following parasites is responsible for 65% of the cases of malaria in India?

निम्नलिखित में से कौन सा परजीवी भारत में मलेरिया के 65%

मामलों के लिए उत्तरदायी है?

(a) P. malariae/पी मलेरिया

(b) P. vivax/पी वाइवैक्स

(c) P. falciparum/पी फाल्सीपेरम

(d) P. Ovale/पी ओवेल

Show Answer

S2. Ans.(b)

Sol. Plasmodium vivax is a protozoan parasite and a human pathogen, the most frequent and widely distributed cause of recurring malaria. P. vivax is one of the five species of malaria parasites that is responsible for 65% cases of malaria in India.

Q3. Hydrophobia is caused by – हाइड्रोफोबिया किसके कारण होता है –

(a) Bacteria/जीवाणु

(b) Fungus/कवक

(c) Virus/वाइरस

(d) Protozoan/प्रोटोजोआ

Show Answer

S3. Ans.(c)

Sol.

Fear of water is known as hydrophobia. Such type of patients gets afraid from river, lake sea etc. Hydrophobia is the old name of Rabies which is a viral disease. Its virus affects the nervous system.

Q4. Anthophobia is fear of the following:

एंथोफोबिया निम्नलिखित किसका डर है:

(a) Boss/मालिक

(b) Fire/आग

(c) Flowers /पुष्प

(d) Dogs/कुत्ते

Show Answer

S4. Ans.(c)

Sol. Anthophobia is an abnormal and persistent fear of flowers. The term comes from the Greek roots Anthos means flower and Phobos means fear.

Q5. The disease caused by swelling of the membrane over spinal cord and brain is

रीढ़ की हड्डी और मस्तिष्क पर झिल्ली की सूजन से होने वाली बीमारी कौन सी है?

(a) Leukaemia/लेकिमिया

(b) Paralysis/पैरालिसिस

(c) Sclerosis/स्केलेरोसिस

(d) Meningitis/मैनिन्जाइटिस

Show Answer

S5. Ans.(d)

Sol. Meningitis is a disease caused by the inflammation of the protective membranes covering the brain and spinal cord known as meninges.

Q6. One out of every 200 babies born in India, dies of diarrhea caused by:

भारत में पैदा हुए हर 200 बच्चों में से एक, डायरिया की वजह से मर जाता है, डायरिया किसके कारण होता है:

(a) Bacteria/जीवाणु

(b) Rotavirus/रोटावायरस

(c) Amoeba/अमीबा

(d) Fungus/कवक

Show Answer

S6. Ans.(b)

Sol. The rotavirus is a group of RNA viruses, some of which cause acute enteritis in humans. Rotavirus is the most common cause of severe diarrhea among infants and young children. It is a genus of double-stranded RNA virus in the family Reoviridae.

Q7. The disease hysteria is classed in

हिस्टीरिया रोग किसमें वर्गित है-

(a) Women/महिलाओं

(b) Men/पुरुषों

(c) Boy/लड़कों

(d) None of these/इनमें से कोई नहीं

Show Answer

S7. Ans.(a)

Sol. Hysteria disease is mainly classed in women. It is a genital disease in which the symptoms of anxiety, discomfort and faintness are found.

Q8. 'SILICOSIS' is a -

सिलिकोसिस क्या है -

- (a) Kidney disease/गुर्दे की बीमारी
 (b) Liver disease/यकृत की बीमारी
 (c) Lung disease/फेफड़ों की बीमारी
 (d) Neurological disorder/मस्तिष्क संबंधी बीमारी

Show Answer

S8. Ans.(c)

Sol. Silicosis is a lung disease that is caused by inhaling tiny bits of silica. Silica is a common mineral, which is part of sand, rock and mineral ores like quartz.

**Q9. Food poisoning is due to -
 खाद्य-विषाणु किसके कारण होता है -**

- (a) E. coli/ई. कोली
 (b) Salmonella bacilli/साल्मोनेला बेसीली
 (c) Pseudomonas/स्पूडोमोनास
 (d) Candida/कैंडिडा

Show Answer

S9. Ans.(b)

Sol. A salmonella infection is a bacterial disease of the intestinal tract. A salmonella is a group of bacteria that cause typhoid fever, food poisoning, gastroenteritis, enteric fever and other illnesses. People become mostly through contaminated water of foods.

Q10. The famous 'Bubble Baby Disease' is so called because:

प्रसिद्ध 'बबल बेबी डिज़ेस' को इस नाम से किस कारणवश बुलाया जाता है:

- (a) It is caused by water bubble/यह पानी के बुलबुले के कारण होता है
 (b) the suffering baby makes bubbles of saliva/पीड़ित बच्चे लार के बुलबुले बनाते हैं
 (c) The suffering baby is treated in a germ-free plastic bubble/पीड़ित बच्चे का रोगाणु-मुक्त प्लास्टिक के बुलबुले में इलाज किया जाता है
 (d) It is cured only water bubble/यह केवल पानी के बुलबुले ठीक होता है

Show Answer

S10. Ans.(c)

Sol. Bubble baby disease (severe combined immunodeficiency, SCID) is often called "bubble boy disease". There are several forms of SCID. The famous 'Bubble Baby Disease' is named so as the suffering baby is treated in a germ-free plastic bubble.

Q11. Which of the following is essential to regulate the heart beat?

निम्नलिखित में से क्या दिल की धड़कन को नियंत्रित करने के लिए आवश्यक है?

- (a) Sodium/सोडियम
 (b) Sulphur/सल्फर
 (c) Potassium/पोटैशियम
 (d) Iron/आयरन

Show Answer

S11. Ans.(c)

Sol. Potassium (K) plays a role in every heart beat. A hundred thousand times a day, it helps trigger the heart to squeeze blood through the body. It also helps your muscles to move, nerves to work and kidneys to filter blood. Phosphorus is good for the development of bones whereas iron deficiency leads to anaemia.

Q12. Which hormone controls the quantity of urine from kidney?

कौन सा हार्मोन गुर्दे में मूत्र की मात्रा को नियंत्रित करता है?

- (a) TSH
 (b) ACTH
 (c) FSH
 (d) ADH

Show Answer

S12. Ans.(d)

Sol. ADH (Antidiuretic) hormone is released from pituitary gland which is responsible for controlling secretion of urine from kidney.

Q13. Cobalt-60 is generally used in radiation treatment because it ejects-

कोबाल्ट -60 आमतौर पर विकिरण उपचार में प्रयोग किया जाता है क्योंकि इससे क्या निकलता है -

- (a) α rays/ α किरणें
 (b) β rays/ β किरणें
 (c) γ rays/ γ किरणें
 (d) X-rays/X- किरणें

Show Answer

S13. Ans.(c)

Sol. Cobalt-60 is a synthetic isotope of cobalt. Gamma rays are ejected after the bombing of neutrons on cobalt. This is the reason, why it is used in radiation treatment.

Q14. The radio isotope used in the detection of tumour is ट्यूमर का अनुसन्धान करने में उपयोग रेडियो आइसोटोप कौन सा है?

- (a) Arsenic - 74/आर्सेनिक - 74
 (b) Cobalt - 60/कोबाल्ट - 60
 (c) Sodium - 24/सोडियम - 24
 (d) Carbon - 14/कार्बन - 14

Show Answer

S14. Ans.(a)

Sol. Arsenic -74 tracer is used to detect the presence of tumours, Sodium -24 tracer is used to detect the presence of blood clots and Iodine-131 tracer is used to study the activity of the thyroid gland. Cobalt-60 is used to treat cancer and carbon -14 is used to date organic material.

**Q15. The poison of honey bee is ?
 मधु मक्खी का जहर किस प्रकार का है?**

- (a) Acidic/अम्लीय
 (b) Saltish/लवणीय
 (c) Alkaline/क्षारीय
 (d) Protein/प्रोटीन

Show Answer

S15. Ans.(a)

Sol. Bee stings differ from insect bites, and the venom or toxin of stinging insects is quite different. In particular, bee stings are acidic, whereas wasp stings are alkali, so the body's reaction to a bee sting may be very different than to that of a wasp sting.

**Q1. Laughing gas used as anesthesia by doctors is-
 चिकित्सकों द्वारा संज्ञाहरण के रूप में उपयोग की जाने वाली हँसिंग गैस क्या है-**

- (a) Nitrogen/नाइट्रोजन
 (b) Nitrogen Oxide/नाइट्रोजन ऑक्साइड
 (c) Nitrous Oxide/नाइट्रस ऑक्साइड
 (d) Nitrogen dioxide/नाइट्रोजन डाइऑक्साइड

Show Answer

Ans.(c)

Sol. Nitrous Oxide (N_2O) is also known as laughing gas. It is a colourless gas with a sweet odour and taste. Inhalation

leads to disorientation, euphoria, numbness, loss of coordination, dizziness and ultimately a loss of consciousness. It is also used as the anesthetic gas.

Q2. Easily soluble in water-
पानी में आसानी से घुलनशील है-

- (a) Carbon/कार्बन
- (b) Nitrogen/नाइट्रोजन
- (c) Ammonia/अमोनिया
- (d) Iodine/आयोडीन

Show Answer

Ans.(c)

Sol. Ammonia being a polar molecule dissolves readily in water. This is due to the Hydrogen atoms of Ammonia which are bonded with a highly electronegative Nitrogen and the Hydrogen atoms of water molecules which are bonded with the highly electronegative Oxygen atom.

Q3. Which is the purest form of iron
आयरन का सबसे शुद्ध रूप क्या है-

- (a) Cast iron/कास्ट आयरन
- (b) Pig iron/पिग आयरन
- (c) Wrought iron/रौट आयरन
- (d) Steel/स्टील

Show Answer

Q4. An aqueous solution of copper sulphate is acidic in nature because the salt undergoes-
काँपर सल्फेट का एक जलीय घोल प्रकृति में अम्लीय होता है क्योंकि नमक का -

- (a) Dialysis/अपोहन होता है
- (b) Electrolysis/विद्युतपघटन होता है
- (c) Hydrolysis/जलीय संलयन होता है
- (d) Photolysis/फोटोलैसिस होता है

Show Answer

Ans.(c)

Sol. Copper sulphate reacts with water which produces strong acid H_2SO_4 and weak base $Cu(OH)_2$ as there is a process of hydrolysis. So it is acidic in nature.
 $CuSO_4 + 2H_2O \rightarrow H_2SO_4 + Cu(OH)_2$

Q5. Sodawater-obtained by passing carbon dioxide in water is:

पानी में से कार्बन डाइऑक्साइड गुजार कर प्राप्त सोडावाटर क्या है:

- (a) An oxidizing agent/एक ऑक्सीकरण एजेंट
- (b) Basic in nature/प्रकृति में क्षार
- (c) Acidic in nature/प्रकृति में अम्लीय
- (d) Reducing agent/अपचायक कारक

Show Answer

Ans.(c)

Sol. The carbon dioxide (CO_2) gas dissolved in water can cause water to become acidic. When carbon dioxide is dissolved in the water, it forms a carbonic acid (H_2CO_3) by reacting with water (H_2O) and remains in dissolved state at high pressure. So, the soda water becomes acidic in nature.

Q6. Which of the following acid do not contain Oxygen-
निम्नलिखित में से किस एसिड में ऑक्सीजन नहीं है -

- (a) Nitric Acid/नाइट्रिक एसिड
- (b) Sulphuric Acid/सल्फ्यूरिक एसिड
- (c) Hydrochloric Acid/हाइड्रोक्लोरिक एसिड
- (d) All of above/उपरोक्त सभी

Show Answer

Ans.(c)

Sol. Hydrochloric Acid (HCl) does not contain Oxygen, as it is a mixture of Hydrogen and Chlorine.

Q7. When eno salt is poured into the water, bubbles forms, which is due to-
जब एनो नमक को पानी में डाला जाता है, तो बुलबुले उत्पन्न होते हैं, ऐसा किसके कारण होता है -

- (a) O_2 gas
- (b) CO_2 gas
- (c) CO gas
- (d) H_2 gas

Show Answer

Ans.(b)

Sol. When eno salt is dissolved in water, the Carbon dioxide gas is produced which produce gas bubbles.

Q8. The chemical used as a 'fixer' in photography is-
फोटोग्राफी में एक 'फिक्सर' के रूप में इस्तेमाल किया जाने वाला रसायन है -

- (a) Sodium sulphate/सोडियम सल्फेट
- (b) Sodium thiosulphate/सोडियम थियोसल्फेट
- (c) Ammonium persulphate/अमोनियम पर्सल्फेट
- (d) Borax/बोरेक्स

Show Answer

Ans.(c)

Sol. Sodium Thiosulphate is used in photography as a fixer of positive and negative.

Q9. Which one of the following is viscous?
निम्नलिखित में से क्या चिपचिपा है?

- (a) Alcohol/अल्कोहॉल
- (b) Water/पानी
- (c) Honey/शहद
- (d) Gasoline/गैसोलिन

Show Answer

Ans.(c)

Sol. 'Viscosity' of a fluid is a measure of its resistance to gradual deformation by shear stress or tensile stress. For liquids, it corresponds to the informal concept of 'Thickness'. For example, Honey has a much higher viscosity than water.

Q10. Which one of the following sets of elements was primarily responsible for the origin of life on the Earth?
तत्वों के निम्नलिखित में से कौन सा सेट मुख्य रूप से पृथ्वी पर जीवन की उत्पत्ति के लिए ज़िम्मेदार था?

- (a) Hydrogen, Oxygen, Sodium/हाइड्रोजन, ऑक्सीजन, सोडियम
- (b) Carbon, Hydrogen, Nitrogen/कार्बन, हाइड्रोजन, नाइट्रोजन
- (c) Oxygen, Calcium, Phosphorus/ऑक्सीजन, कैल्शियम, फास्फोरस
- (d) Carbon, Hydrogen, Potassium/कार्बन, हाइड्रोजन, पोटेशियम

Show Answer

Ans.(b)

Sol. Biologist considers that six elements were primarily responsible for the origin of life on the earth. They are Hydrogen, Oxygen, Carbon, Nitrogen, Phosphorus and Sulphur. The matter within every living earthly creature mainly consists of these chemical compounds. Protein, Nucleic Acid, Carbohydrates, Vitamins, Hormones, etc.

Q11. Which one of the following was used as a chemical weapon in the First World War?

निम्नलिखित में से क्या पहले विश्व युद्ध में रासायनिक हथियार के रूप में उपयोग किया गया था?

- (a) Carbon monoxide/कार्बन मोनोऑक्साइड
 (b) Hydrogen cyanide/हाइड्रोजन साइनाइड
 (c) Mustard gas/मस्टर्ड गैस
 (d) Water gas/ जल गैस

Show Answer

Ans.(c)

Sol. Mustard gas is a chemical compound which has been used as a chemical weapon in First World War. Its chemical name is 'Dichlorodiethyl Sulphide'. It is a poisonous gas. It can cause ulcers on the skin.

Q12. Which of the following gases is used in cigarette lighters?

सिगरेट लाइटर में निम्नलिखित में से किस गैस का प्रयोग किया जाता है?

- (a) Butane/ब्यूटेन
 (b) Methane/मीथेन
 (c) Propane/प्रोपेन
 (d) Radon/रेडॉन

Show Answer

Ans.(a)

Sol. Butane is a flammable hydrocarbon with the molecular formula C_4H_{10} . It is a natural gas perhaps best known for its use as a fuel cigarette lighters. It is also an organic compound known as NGL, a Natural Gas Liquid.

Q13. Which one of the following pairs is incorrectly matched?

निम्नलिखित में से कौन सा युग्म गलत मिलान है?

- (a) Pyrene/पईरिन - Fire extinguisher/अग्निशामक
 (b) Sulphur Dioxide/सल्फर डाइऑक्साइड - Acid rain/अम्ल वर्षा
 (c) Freon/फ्रैयॉन - Refrigerant/शीतल
 (d) Fullerene/फुल्लरीन - Fluorine containing polymer/फ्लोरीन युक्त पॉलिमर

Show Answer

Ans.(d)

Sol. A Fullerene is a molecule of carbon in the form of a hollow sphere, ellipsoid, tube and many other shapes. Rest of the options are correctly matched.

Q14. Cetane number is used as a quality parameter mainly for which of the following?

सिटेन संख्या का प्रयोग मुख्यतः निम्नलिखित में से किसके लिए गुणवत्ता पैरामीटर के रूप में किया जाता है?

- (a) Petrol/पेट्रोल
 (b) Kerosene/किरोसीन
 (c) Diesel/डीज़ल
 (d) Turpentine Oil/तारपीन का तेल

Show Answer

Ans.(c)

Sol. The cetane number is used as a quality parameter of diesel. The combustion of diesel without spark is provided by compression. Thus as soon as the diesel fuel is ignited and compressed the cetane number will be higher. This identifies the good quality of diesel.

**Q15. Indane gas is a mixture of-
 इडैन गैस किसका मिश्रण है -**

- (a) Butane and Hydrogen/ब्यूटेन और हाइड्रोजन
 (b) Butane and Oxygen/ब्यूटेन और ऑक्सीजन
 (c) Butane and Propane/ब्यूटेन और प्रोपेन
 (d) Methane and Oxygen/मीथेन और ऑक्सीजन

Show Answer

Ans.(c)

Sol. LPG is the flammable mixture of hydrocarbon gas used as fuel. Indane gas mainly the mixture of Propane (C_3H_8) and Butane (C_4H_{10}).

**Q1. Deficiency of Iron causes-
 आयरन की कमी के कारण क्या होता है -**

- (a) Filaria/फाइलेरिया
 (b) Malaria/मलेरिया
 (c) Anaemia/रक्तक्षय
 (d) Fluorosis/फ्लोरोसिस

Show Answer

S1. Ans.(c)

Sol. Anaemia is a condition in which the body does not have enough healthy red blood cells. Red blood cells provide oxygen to body tissues. There are many types of anaemia. Iron deficiency anaemia occurs when your body does not have enough iron. Iron helps make red blood cells.

**Q2. Most frequently used medicine for AIDS is-
 एड्स के लिए सबसे अधिक उपयोग किये जाने वाली दवा कौन सी है-**

- (a) Zedovudine (Azidothymidine)/ज़ेडोवुडिन (अज़िडोथाइमिडिन)
 (b) Micronazol/माइक्रोनजोल
 (c) Nanaxinel-a/नानाक्सिल-ए
 (d) Vinajol/विनाजोल

Show Answer

S2. Ans.(a)

Sol. Zidovudine, also known as azidothymidine, is an antiretroviral medication used to prevent and treat HIV/AIDS.

**Q3. Who discovered the H.T.L.V. III AIDS Virus?
 H.T.L.V. III एड्स वायरस की खोज किसने की थी?**

- (a) Robert Gallo/रॉबर्ट गैलो
 (b) Edward Jenner/एडवर्ड जेनर
 (c) Luck Izon Jenner/लक येंज जेनर
 (d) Robertson/रॉबर्टसन

Show Answer

**Q4. Jaundice affects the-
 पीलिया किसे प्रभावित करता है -**

- (a) Pancreas/अग्न्याशय
 (b) Stomach/आमाशय
 (c) Liver/यकृत
 (d) Intestine/आंत

Show Answer

S4. Ans.(c)

Sol. Jaundice forms when there is too much bilirubin in your system. Bilirubin is a yellow pigment that is formed by the breakdown of dead red blood cells in the liver.

Q5. Which of the following diseases, antibodies cannot cure?

एंटीबॉडी निम्नलिखित में से किस रोग, का इलाज नहीं कर सकती है?

- (a) Leprosy/कुष्ठ रोग
 (b) Tetanus/टिटनेस
 (c) Measles /खसरा
 (d) Cholera/हैज़ा

Show Answer

S5. Ans.(c)

Sol. Measles is a highly contagious respiratory infection which is caused by a virus. It can not be cured by antibiotics

whereas leprosy, Tetanus and Cholera can be cured by antibiotics.

Q6. Which of the following disease is caused by the excessive use of alcoholic beverage?

निम्नलिखित में से कौन सा रोग अल्कोहल पेय के अत्यधिक उपयोग के कारण होता है?

- (a) Appendicitis /पथरी
- (b) Viral hepatitis/वायरल हेपेटाइटिस
- (c) Gall stones/पित्ताशय की पथरी
- (d) Liver cirrhosis/लीवर सिरोसिस

Show Answer

S6. Ans.(d)

Sol. It is caused by the excessive use of alcoholic beverage. Liver Cirrhosis is a serious condition where normal liver tissue is replaced by scar tissue.

Q7. Bright's disease affects human body in the part- ब्राइट रोग मानव शरीर के किस अंग को प्रभावित करता है -

- (a) kidney/वृक्क
- (b) spleen/तिल्ली
- (c) heart /हृदय
- (d) liver/यकृत

Show Answer

S7. Ans.(a)

Sol. Bright's disease is also known as uremia which affects the kidney. It fuses the physiology of kidney; as result, the amount of urea increases in blood.

Q8. Pneumoconiosis affects the workers who work mainly in:

निमोनिकोनोसिस मुख्य रूप से कहाँ कार्य करने वाले श्रमिकों को प्रभावित करता है:

- (a) Tanneries/चर्म शोधनालय
- (b) Coal mining industry/कोयला खनन उद्योग
- (c) Distilleries/आसवनी
- (d) Glass Industry/ग्लास उद्योग

Show Answer

S8. Ans.(b)

Sol. Pneumoconiosis is an occupational lung disease and a restrictive lung disease caused by the inhalation of dust, often in mines. The miners feel difficulty in breathing.

Q9. The factor of madcow disease is- मेडकाऊ रोग का कारक क्या है -

- (a) Bacteria/जीवाणु
- (b) Virus/वाइरस
- (c) Fungus/कवक
- (d) Prions/प्रायन

Show Answer

S9. Ans.(d)

Sol. Mad cow is a dangerous disease related to the brain of cattle. Distorted protein 'prion' in their brain is the factor of it.

Q10. Foot and Mouth disease in animals, a current epidemic in some parts of the world, is caused by :

जानवरों में पैर और मुंह रोग, दुनिया के कुछ हिस्सों में एक वर्तमान महामारी है, यह किसके कारण होती है:

- (a) Bacterium /जीवाणु
- (b) Virus/विषाणु
- (c) Fungus /कवक
- (d) Prions/प्रायन

Show Answer

S10. Ans.(b)

Sol. Foot and mouth disease is a viral disease that affects cloven hoofed animals, including domestic and wild bovines.

Q11. In a patient of Thalassaemia, the body is unable to synthesis-

थैलेसीमिया के एक रोगी में, शरीर किसके संश्लेषण में असमर्थ हो जाता है -

- (a) Vitamin D/विटामिन D
- (b) Hormones/हार्मोन
- (c) Haemoglobin/हीमोग्लोबिन
- (d) Protein/प्रोटीन

Show Answer

S11. Ans.(c)

Sol. Thalassaemia is a genetic blood disorder. In a patient of Thalassaemia, the body is unable to synthesise enough haemoglobin, which causes severe anaemia.

Q12. Interferon is used for the control of

इंटरफेरॉन का उपयोग किसके नियंत्रण के लिए किया जाता है:-

- (a) Cancer/कैंसर
- (b) Diabetes/मधुमेह
- (c) T.B./टी.बी.
- (d) Typhoid/टाइफाइड

Show Answer

S12. Ans.(a)

Sol. Interferons (IFNs) are a group of signaling proteins made and released by host cells in response to the presence of pathogens such as viruses, bacteria, parasites or tumour cells such as in cancer.

Q13. All of the following diseases are caused by virus except

निम्नलिखित में किसे छोड़ कर सभी बीमारियाँ वायरस के कारण होती हैं:-

- (a) Dengue /डेंगू
- (b) Influenza/इंफ्लुएंजा
- (c) Mumps/कण्ठमाला का रोग
- (d) Typhoid/टाइफाइड

Show Answer

S13. Ans.(d)

Sol. Typhoid is caused by Salmonella Typhi bacteria. Other three are viral diseases.

Q14. The disease in which high levels of uric acid in the blood are characteristic is

वह रोग जिसमें रक्त में यूरिक एसिड का स्तर उच्च हो जाता है, किसके लक्षण हैं

- (a) Arthritis/अर्थरिथिस
- (b) Gout/गाउट
- (c) Rheumatism /रहेऊमेटिस्म
- (d) Rheumatism heart/रहेऊमेटिस्म हार्ट

Show Answer

S14. Ans.(b)

Sol. Gout is a disease caused by high level of uric acid in the blood (hyperuricemia). It causes an attack of sudden burning pain, stiffness and swelling in a joint.

Q15. Which one of the following diseases can not be controlled by vaccination?

निम्नलिखित में से कौन सी बीमारियों को टीकाकरण से नियंत्रित नहीं किया जा सकता है?

- (a) Diabetes/मधुमेह
- (b) Polio/पोलियो

- (c) Whooping Cough /काली खांसी
 (d) Small-pox/चेचक

Show Answer

S15. Ans.(a)

Sol. As per question; Polio, whooping cough and smallpox can control by vaccination but there is no vaccination available for diabetes. Diabetes is a disease related to pancreas which is caused due to insufficient of insulin in the blood.

1. The remove the defect of long sightedness one uses- दीर्घ दृष्टि दोष के अपनयन में किसका उपयोग किया जाता है -

- (a) Concave lens/अवतल लेंस
 (b) Convex mirror/उत्तल दर्पण
 (c) Convex lens/उत्तल लेंस
 (d) Concave mirror/अवतल दर्पण

Show Answer

Ans.(c)

Sol. Farsightedness (Hypermetropia) as it is medically termed is a vision condition in which distant object are usually seen clearly, but close ones do not come into proper focus. To remove this vision problem one should use a convex lens.

Q2. An air bubble in water will act like a:

एक हवा का बुलबुला पानी में किसकी तरह कार्य करता है:

- (a) Convex mirror/उत्तल दर्पण
 (b) Convex lens/उत्तल लेंस
 (c) Concave mirror/अवतल दर्पण
 (d) Concave lens/अवतल लेंस

Show Answer

Ans.(d)

Sol. Air is optically rarer than water, the ray of light bends away from the normal at the point of incidence when moving from water to air while it bends towards the normal while moving from air to water. It is clearly visible that the air bubble acts as a DIVERGING LENS (concave lens) in water.

Q3. Sea seems blue due to- समुद्र किसके कारण नीले रंग का दिखाई देता है -

- (a) Excess deepness/अत्यधिक गहराई
 (b) Reflection of sky and scattering of light by the drops of water/आकाश का प्रतिबिंब और पानी की बूंदों से प्रकाश का फैलाव
 (c) Blue colour of water/पानी का नीला रंग
 (d) Upper layer of water/पानी की ऊपरी परत

Show Answer

Ans.(b)

Sol. "The ocean looks blue because red, orange and yellow (long wavelength light) are absorbed more strongly by water than is blue (short wavelength light). So when white light from the sun enters the ocean, it is mostly the blue that gets returned.

Q4. The light with the shortest wavelength is सबसे तरंग दैर्घ्य वाला प्रकाश कौन सा है-

- (a) Red/लाल
 (b) Yellow/पीला
 (c) Blue/नीला
 (d) Violet/बैंगनी

Show Answer

Ans.(d)

Sol. Wavelength of red colour is largest and violet colour has the shortest wavelength.

Q5. The cooling by a desert cooler is based on- रेगिस्तानी कूलर द्वारा कूलिंग किस पर आधारित है -

- (a) Hot air replacement/गर्म हवा प्रतिस्थापन
 (b) Air dehydration/हवा निर्जलीकरण
 (c) Evaporative cooling/वाष्पशील शीतलन
 (d) Air rehydration/हवा पुनर्जलीकरण

Show Answer

Ans.(c)

Sol. The cooling by a desert cooler is based on evaporative cooling. These coolers are also known as swamp coolers.

Q6. Cooling is done by-

शीतलन किसके द्वारा किया जाता है-

- (a) Flow of water/पानी का प्रवाह
 (b) Release of compressed gas/संपीड़ित गैस का निवारण
 (c) Cooking gas/खान बनाने की गैस
 (d) Melting the solid/ठोस को पिघलाकर

Show Answer

Ans.(b)

Sol. Most of the air conditioner uses compressed gas, which can cool the room or other places.

Q7. On adding common salt to water, the boiling point and freezing point of water will:

पानी में आम नमक मिलाने पर, क्वथनांक और हिमांक में क्या होगा:

- (a) Increase/वृद्धि
 (b) Decrease/कमी
 (c) Decrease and increase respectively/क्रमशः कमी और वृद्धि
 (d) Increase and decrease respectively/क्रमशः वृद्धि और कमी

Show Answer

Ans.(d)

Sol. If salt is added to the water then the boiling point of water will increases. This happens as the boiling point is the temperature at which the vapor pressure of solvent becomes equal to the external atmospheric pressure. Similarly it also decreases the freezing point, which in turn will interfere with the frozen solution's crystal structure. That means the temperature will have to be colder to overcome it and freeze the mixture anyway.

Q8. To keep drinks at the same temperature for quite sometime, the walls of thermos bottle are coated with:

पेय को थोड़े समय के लिए समान तापमान पर रखने के लिए, थर्मस बोतल की दीवारों की सतह को किससे लेपित किया जाता है:

- (a) Aluminium paint/एल्युमिनियम पेंट
 (b) Lead Powder/लीड पाउडर
 (c) Silver layer/सिल्वर परत
 (d) Mercury Layer/मरकरी परत

Show Answer

Ans.(c)

Sol. The glass or steel which is used in thermos bottle is coated with a silver layer to keep drinks at the same temperature for some time.

Q9. The atmosphere exerts enormous pressure on us. But, we do not feel it because

वातावरण हमारे पर भारी दबाव डालता है. लेकिन, हम इसे महसूस नहीं कर पाते क्योंकि

- (a) Our blood exerts a pressure slightly more than that of the atmosphere./हमारा रक्त वायुमंडल की तुलना में थोड़ी अधिक दबाव डालता है.
 (b) We are used to it./हम इसके आदि हो चुके हैं

(c) Our bones are very strong and can withstand the pressure./हमारी हड्डियां बहुत मजबूत हैं और दबाव का सामना कर सकती हैं।

(d) The surface area of our head is very small./हमारे सिर की सतह बहुत छोटी है।

Show Answer

Ans.(a)

Sol. The atmosphere exerts enormous pressure on us but we do not feel it, because our blood exerts pressure slightly more than that of the atmosphere. We feel this pressure in water because the pressure underwater is greater than our normal blood pressure.

Q10. Assertion (A) : With the increase of temperature, the viscosity of glycerin increases. /**अभिकथन (A) :** तापमान की वृद्धि के साथ, ग्लिसरीन की चिपचिपाहट बढ़ जाती है।

Reason (R) : Rise of temperature increases kinetic energy of molecules./**कारण (R) :** तापमान बढ़ने के कारण अणुओं की गतिज ऊर्जा बढ़ जाती है।

Code/कोड:

(a) Both (A) and (R) are true, and (R) is the correct explanation of (A)./दोनों (A) और (R) सत्य हैं, और (R), (A) का सही स्पष्टीकरण है।

(b) Both (A) and (R) are true, but (R) is not the correct explanation of (A)./दोनों (A) और (R) सत्य हैं, लेकिन (R), (A) का सही स्पष्टीकरण नहीं है।

(c) (A) is true, but (R) is false./**(A)** सत्य हैं, लेकिन **(R)** असत्य है।

(d) (A) is false, but (R) is true./**(A)** असत्य है, लेकिन **(R)** सत्य है।

Show Answer

Ans.(d)

Sol. The temperature dependence of liquid (Glycerin etc) viscosity is the phenomenon by which liquid viscosity tends to decrease as its temperature increases. The increase in temperature causes the kinetic or thermal energy to increase and the molecules become more movable.

Q11. Food gets cooked faster in a pressure cooker because-

प्रेसर कुकर में खाना जल्दी पकाया जा सकता है ऐसा क्यों-

(a) Water starts boiling at a lower temperature due to high pressure/उच्च दबाव के कारण पानी कम तापमान पर उबलता है

(b) Water starts boiling at a higher temperature due to high pressure/उच्च दबाव के कारण पानी उच्च तापमान पर उबलता है

(c) Water boils only at 100° C but the heat content is higher at high pressure/पानी केवल 100 डिग्री सेल्सियस पर उबलता है लेकिन उष्मा उच्च दबाव में अधिक होती है

(d) Convection currents are set inside the cooker/संवहन धाराएं कुकर के अंदर सेट की जाती हैं

Show Answer

Ans.(b)

Sol. Food can be cooked faster in a pressure cooker since the boiling point of water increases with pressure. As the water boils, the steam produced cannot evaporate so the pressure inside the cooker increases. At higher elevations, atmospheric pressure is lower and therefore water boils at lower temperature.

Q12. When a piece of ice floating in a glass of water melts, the level of water will:

जब एक गिलास पानी में तैरता बर्फ का टुकड़ा पिघल जाता है, तो पानी का स्तर:

(a) Fall/ कम होता है

(b) Rise/बढ़ता है

(c) Remain same/समान रहता है

(d) Fall or rise depends on the temperature of water/कमी या वृद्धि पानी के तापमान पर निर्भर करती है

Show Answer

Ans.(c)

Sol. We know that the mass of liquid displaced by the floating ice equals to the mass of the object. That's why the ice caps float on water. Similarly, when an ice cube melts in a glass of water, the water level does not change as the melted water will occupy exactly the same amount of space as the ice under the water level previously occupied.

Q13. If a gas is compressed to half of its original volume at 27°C, to what temperature should it be heated to make it occupy its original volume?

यदि किसी गैस को 27 डिग्री सेल्सियस पर अपनी मूल आयतन के आधे में संकुचित किया जाता है, तो इसका मूल्य आयतन प्राप्त करने के लिए इसे किस तापमान पर गर्म करना होगा?

(a) 327°C

(b) 600°C

(c) 54°C

(d) 300°C

Show Answer

Ans.(a)

Sol. According to the law of gases

From formula = $V_1/V_2 = T_1/T_2$

$V_1 = V/2$ and $V_2 = V$ [given]

$T_1 = 273 + 27 = 300K$

$T_2 = ?$

$(V/2)/V = 300/T_2 \Rightarrow T_2 = 600K$

$\therefore T_2 = 600 - 273 = 327^\circ C$

Q14. A device which converts electrical energy into mechanical energy is-

एक उपकरण जो विद्युत ऊर्जा को यांत्रिक ऊर्जा में परिवर्तित करता है -

(a) Dynamo/डाइनेमो

(b) Transformer/ट्रांसफार्मर

(c) Electric motor/विद्युत मोटर

(d) Inductor/इंडक्टर

Show Answer

Ans.(c)

Sol. Electric motor is a device which converts electrical energy into mechanical energy. Electric motors involve rotating coils of wire which are driven by the magnetic force exerted by a magnetic field or an electric current.

Q15. Electric motors operating at low voltages tend to burn out because-

कम वोल्टेज पर चलने वाली इलेक्ट्रिक मोटर्स जल जाती हैं क्योंकि -

(a) They draw more current which is inversely proportional to the voltage./इनमें अधिक विद्युत धारा का प्रवाह होता है जो वोल्टेज के व्युत्क्रमानुपाती होता है।

(b) They draw more current which is inversely proportional to the square root of the voltage./इनमें अधिक विद्युत धारा का प्रवाह होता है जो वोल्टेज के वर्ग के व्युत्क्रमानुपाती होता है।

(c) They draw heat proportional to V^2 ./यह V^2 के समानुपाती उष्मा उत्पन्न करते हैं।

(d) Low voltage sets in electrical discharge./कम वोल्टेज विद्युत निर्वहन करती है।

Show Answer

Ans.(a)

Sol. Electric motors operating at low voltage tend to burn out because they draw more current which is inversely proportional to the voltage

Q1. The mutation theory of evolution was enunciated by विकास के उत्परिवर्तन के सिद्धांत को किसके द्वारा अभिव्यक्त किया गया था?

- (a) Huxley / हक्सले
- (b) Darwin / डार्विन
- (c) Lamarck / लैमार्क
- (d) Hugo de Vries / ह्यूगो डे विल्स

Show Answer

Ans.(d)

Sol. Hugo De Vries is known for his mutation theory of evolution. According to him, new species are not formed by continuous variations but by the sudden appearance of variations, which he named as mutations. He stated that mutations are heritable and persist in successive generations.

Q2. The main factor of evolution is- विकास का मुख्य कारक है-

- (a) Mutation / परिवर्तन
- (b) Achieved quality / प्राप्त गुणवत्ता
- (c) Vaginal birth / योनि जन्म
- (d) Natural selection / प्राकृतिक चयन

Show Answer

Ans.(d)

Sol. According to Darwin's theory of evolution, natural selection is one of the basic mechanism of evolution along with mutation, migration and genetic drift.

Q3. Alfa toxins are produced by – अल्फा विषाक्त पदार्थ किसके द्वारा निर्मित होते हैं

- (a) Fungi/ कवक
- (b) Algae/ शैवाल
- (c) Bacteria/ जीवाणु
- (d) Viruses / वायरस

Show Answer

Ans.(a)

Sol. Aflatoxin is a poison produced by a fungus, called Aspergillus flavus. This fungus resides in soil and dead/decaying matter in the field. Aflatoxin contaminates 25%+ of maize and groundnut crops produced in Nigeria. It is very dangerous to humans and animals.

Q4. Pleura is the covering of – प्लूर किसका आवरण है-

- (a) Liver/ यकृत
- (b) Kidney/ वृक्क
- (c) हृदय/
- (d) Lung / फेफड़ा

Show Answer

Ans.(d)

Sol. A pleura is a serous membrane which folds back onto itself to form a two-layered membranous pleural sac. The outer pleura (parietal pleura) is attached to the chest wall, but is separated from it by the endothoracic fascia. The inner pleura (visceral pleura) covers the lungs and adjoining structures, including blood vessels,

Q5. Which is the largest mammal? सबसे बड़ा स्तनपायी कौन सा है?

- (a) Blue Whale / ब्लू व्हेल
- (b) African Elephant / अफ्रीकी हाथी
- (c) Hippopotamus / दरियाई घोड़ा
- (d) Polar bear / ध्रुवीय भालू

Show Answer

Ans.(a)

Sol. BlueWhales are largest mammals ever known to have lived on earth.

Whales range in size from the blue whale, the largest animal known to have ever existed at 30m (98 ft) and 180 ton (180 long tons; 200 short tons) to pygmy species such as the Pygmy Sperm Whale at 3.5 m (11 ft).

Q6. Which of the following species is the largest of the 'toothed-whales? निम्नलिखित में से कौन सी प्रजाति 'दांतदार व्हेल' में सबसे बड़ी है?

- (a) Finback whale / फ़िनबैक व्हेल
- (b) Blue whale / ब्लू व्हेल
- (c) Sperm whale / स्पर्म व्हेल
- (d) Humpback whale / हंपबैक व्हेल

Show Answer

Ans.(c)

Sol. The sperm whale (Physeter microcephalus) is the largest of the toothed whales with males growing up to 20 meters in length. The mass of sperm whales ranges between 35000-57000 kg. Female only weight about 1/3 of the males.

Q7. Which among the following one lays eggs and does not produce young ones directly? निम्नलिखित में से कौन अंडे देता है और सीधे बच्चों को जन्म नहीं देता है?

- (a) Echidna / इकिडना
- (b) Kangaroo / कंगारू
- (c) Porcupine / साही
- (d) Whale / व्हेल

Show Answer

Ans.(a)

Sol. Echidnas sometimes known as spiny anteaters belong to the family Tachyglossidae in the monotreme order of egg-laying mammals.

Q8. From the following option, seal is the species of- निम्नलिखित विकल्प से, सील किसकी प्रजातियां है-

- (a) fish / मछली
- (b) bird / चिड़िया
- (c) Reptiles / सरीसृप
- (d) mammal / स्तनपायी

Show Answer

Ans.(d)

Sol. Seals are semi-aquatic mammals, they are in a group called pinnipeds mean fin-footed. All seals are carnivores. Their diet consists of mostly fish, crustaceans, and shellfish.

Q9. Amphibia are- एम्फ़ीबिया हैं

- (a) Very fastly moving boats / बहुत तेजी से चलने वाली नौका
- (b) Animals living in water only / केवल पानी में रहने वाले जीव
- (c) Animals living on land only / केवल भूमि पर रहने वाले जीव
- (d) Animals living equally in water and on land both / पानी और जमीन पर समान रूप से रहने वाले जीव

Show Answer

Ans.(d)

Sol. The word "amphibian" is derived from the ancient Greek term amphibious, which means "both kinds of life". The term was initially used as a general adjective for animals that could live on land or in water. They are ectotherms or cold-blooded animals, means they are unable to regulate their own body temperature.

Q10. Which of the following property separate a man/human from apes:-

निम्नलिखित में से कौन सा गुण एक मानव को एपिस से अलग करता है:

- (a) Envice a desire to learn / सीखने की बेहतर क्षमता
- (b) By a rudimentary sense of smell / गंध को समझने का बेहतर भाव
- (c) Contrary thumb / विपरीत अंगूठे
- (d) Broader chin / चौड़ी ठोड़ी

Show Answer

Ans.(a)

Sol. Human is the smartest creature in the animal kingdom. They are they only creature, who has a desire to learn and the ability to express.

Q11. Octopus is:

ऑक्टोपस क्या है

- (a) arthropod / एक आर्थ्रोपॉड
- (b) An echinoderm/ एक एचिनोडर्म
- (c) A hemichordate/ एक हेमिकोर्डेट
- (d) A mollusc / एक मोलस्क

Show Answer

Ans.(d)

Sol. An octopus is a cephalopod mollusc of the order Octopoda, also knows as devil fish. It has two eyes and four pairs of arms and like other cephalopods, it is bilaterally symmetric.

Q12. The largest invertebrate is-

सबसे बड़ा अकशेरुक है-

- (a) Octopus / ऑक्टोपस
- (b) Squid / स्क्वीड
- (c) Coral / मूंगा
- (d) Jellyfish / जेलिफ़िश

Show Answer

Ans.(b)

Sol. Invertebrate is the animals that do not have a backbone. The colossal squid is the largest invertebrate. It's maximum size is 12-14 metre.

Q13. Among the following organisms, which one does not belong to the class of other three?

निम्नलिखित में से किस जीव में, कौन सा अन्य तीनों के वर्ग से संबंधित नहीं है?

- (a) Crab / केकड़ा
- (b) Mite / घुन
- (c) Scorpion / बिच्छू
- (d) Spider / मकड़ी

Show Answer

Ans.(a)

Sol. Class of crab : Malacostraca

Class of mite : Arachnida

Class of scorpion : Arachnida

Class of spider : Arachnida

Q14. Ringworm is a disease.

दाद एक बीमारी है

- (a) Bacterial/ जीवाणु
- (b) Protozoan/ प्रोटोजोआ
- (c) Viral/ वायरल
- (d) Fungal/ कवक

Show Answer

Ans.(d)

Sol. Ringworm, also known as dermatophytosis or tinea, is a fungal infection of the skin.

Q15. Ticks and mites are actually:

टीक्स और मैट्स वास्तव में हैं:

- (a) Arachnids / अरचिड्स
- (b) Crustaceans / क्रस्टेशियन
- (c) Insects / कीट
- (d) Myriapods / माईरियापॉड्स

Show Answer

Ans.(a)

Sol. Ticks and mites belongs to one of the most diverse groups of class, Arachnids. They have 4 pairs of legs, although some juveniles only have 3 pairs gaining the fourth pair with their first molt. There is no external segmentation of the abdomen, individuals appear as a single body mass.