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CBSE
Class IX Science
Term 2
Sample Paper – 2

Biology

Q1. Kala azar used and transmitted and transmitted respectively by
(a) Leishmania and Phlebatomus
(b) Trypanosoma and sand fly
(c) Leishmania and tse – tse fly
(d) Trypanosoma and Glossina palpalis

Sol. (a)

Q2. Fever
(a) Decrease interferon production
(b) Decrease the concentration of iron in the blood.
(c) Decrease the activity of phagocytes
(d) Increase the reproduction rate of invading bacteria

Sol. (b)

Q3. Which of the following is a mismatch?
(a) AIDS – Bacterial infection
(b) Polio – Viral infection
(c) Malaria – Protozoan infection
(d) Elephantiasis – Helminth infection

Sol. (a)

Q4. Ascar is lumricoides is common roundworm of
(a) Large intestine
(b) Liver
(c) Bile duct
(d) Small intestine

Sol. (d)

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Q5. Most common pesticides used in the crops are
(a) BHC, aldrin, malathion, pyrethrin
(b) Aldrin , malathion , lead arsenate, sodium fluride
(c) Aldrin, malathion, sodium arsenate, lead arsenate
(d) Cryolite, aldrin, pyrethrin

Sol. (c)

Q6. Silver Revolution is related to
(a) Egg production
(b) Milk production
(c) Grain production
(d) Meat production

Sol. (a)

Q7. A solution was dropped over a slice of potato. It turned blue – black. The solution was
(a) Iodine solution
(b) Metanil solution
(c) Benedict's solution
(d) HCl

Sol. (a)

Q8. Culture of marine fin fish is called
(a) Mari culture
(b) Pisiculture
(c) Aquaculture
(d) None

Sol. (a)

Q9. What one of the following group of organisms is able to fix atmosphere nitrogen by living organisms?
(a) Plants
(b) Fungi
(c) Insects
(d) Bacteria

Sol. (d)

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Q10. Choose the correct sequences

(a) CO_2 in atmosphere → decomposers → organic carbon in animals → organic carbon in plants

(b) CO_2 in atmosphere → organic carbon in plants → organic carbon in animals → inorganic carbon in soil

(c) Inorganic carbonates in water → organic carbon in plants → organic carbon in animals → scavengers

(d) Organic carbon in animals → decomposers CO_2 in atmosphere → organic carbon in plants.

Sol. (b)

Q11. Of the total fresh water available on earth. What percentage is in frozen state?

(a) 90%

(b) 77%

(c) 22%

(d) 10%

Sol. (b)

Q12. Which of the following statements does not give the correct definition?

(a) The addition of undesirable substances to water bodies

(b) The removal of desirable substance from water bodies

(c) A change in presence of the water bodies

(d) A change in temperature of the water bodies.

Sol. (c)

Q13. Cell to cell contact in plant cells in maintained through

(a) Tight junctions

(b) Desmosomes

(c) Inter digitations

(d) Plasmodesmata

Sol. (d)

Q14. Raisins are soaked in water for determining the percentage of water absorbed by raisins. The formula, used by a student, for calculating the percentage of water absorbed, is

(a) $\frac{Initial\ weight - Final\ weight}{Initial\ weight} \times 100$

(b) $\frac{Final\ weight - Initial\ weight}{Initial\ weight} \times 100$

(c) $\frac{Final\ weight - Initial\ weight}{Final\ weight} \times 100$

(d) $\frac{Initial\ weight - Final\ weight}{Final\ weight} \times 100$

Sol. (b)

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Q15. Thin filaments in myofibrils consist of
(a) Actin and accessory proteins
(b) Sarcomeres
(c) Cross – bridges
(d) Z lines

Sol. (a)

Q16. The mesophyll of a leaf consist of
(a) Spongy parenchyma cells
(b) Palisade parenchyma cells
(c) Both spongy and palisade parenchyma cells
(d) Pith cells

Sol. (c)

Q17. Striations appear in striped muscles due to
(a) Presence of alternate light and dark banks
(b) Dispersion of pigments
(c) Presence of intercalated discs
(d) Occurrence of actin strands

Sol. (a)

Q18. Chlorenchyma is known to develop in the
(a) Cytoplasm of chlorella
(b) Mycelium of a green mould such as aspergillus
(c) Spore capsule of a moss
(d) Pollen tube of pinus

Sol. (c)

Q19. Which of the following pairs is correctly matched?
(a) Water – vascular system – sponge
(b) Flame cell – flat worm
(c) Bludder – kangroo
(d) Marsupium – platypus

Sol. (b)

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Q20. Which of the following categories includes all other in the list?

(a) Arthropod
(b) Insect
(c) Invertebrate
(d) Arachnid

Sol. (c)

Chemistry

Q21. The boiling point of water on celcius and Kelvin scale respectively is

(a) 373, 373
(b) 0, 273
(c) 273,373
(d) 100, 373

Sol. (d)
Boiling point of water = 100° C = 100 + 273 = 373 k

Q22. Volume of a gas at a particular temperature and on atmosphere pressure is 200 ml. Keeping the temperature constant if pressure is increased to 5 atmosphere, then volume of th gas will be

(a) 100 ml
(b) 40 ml
(c) 200 ml
(d) 205 ml

Sol. (b)
$P_1 = 1\ atm,\ V_1 = 200\ ml$
$P_2 = 5\ atm\ \ V_2 =$
According to Boyle'
$P_1\ V_1 = P_2 V_2$
$V_2 = \frac{P_1 V_1}{P_2} \quad = \frac{1 \times 200\ ml}{5} \quad = 40\ ml$

Q23. What term is used to describe the phase change of a solid to a liquid?

(a) Freezing
(b) Melting
(c) Boiling
(d) None of the above

Sol. (b)

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Q24. Select the correct order of evaporation for water, alcohol. Petrol and kerosene oil
(a) Water > alcohol > kerosene oil > petrol
(b) Alcohol > petrol > water > kerosene oil
(c) Petrol > alcohol > water > kerosene oil
(d) Petrol > alcohol > kerosene oil > water

Sol. (d)

Q25. In which of the following the constituents are present in any ratio?
(a) Mixture
(b) Compound
(c) Solution
(d) Colloid

Sol. (a)

Q26. A mixture of $ZnCl_2$ and $PbCl_2$ can be separated by
(a) Distillation
(b) Crystallization
(c) Sublimation
(d) Adding acetic acid

Sol. (b)

Q27. A student was given a mixture of iron filing and sulphur in the ratio 1 : 2 by weight. He was then asked to heat the mixture over a flame and to observe the colour change. The student will observe that the mixture becomes:
(a) Black
(b) Grey
(c) Yellow
(d) Orange

Sol. (a)

Q28. Before the most beneficial for separating
(a) Yes
(b) No
(c) Initially physical then chemical change
(d) Initially chemical then physical change

Sol. (b)

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Q29. Aspartame , an artificial sweetener, has the molecular formula $C_{14}H_{18}N_2O_5$. What is the mass in grams of one molecule? (Atomic weight :C = 12.01, H = 1.008, N = 14.01, O = 16.00).

(a) 4.89×10^{-21}
(b) 2.24×10^{-21}
(c) 3.85×10^{-22}
(d) 4.89×10^{-22}

Sol. (d)

Q30. The total number of atoms represented by the compound $CuSO_4.5H_2O$ *is*

(a) 27
(b) 21
(c) 5
(d) 8

Sol. (b)

1 atom of Cu + 1 atom of sulphur + 9 atoms of oxygen +10 atoms of hydrogen. Total number of atoms in compound is 21

Q31. Volume of a gas at STP is 1.12×10^{-7} cc. Calculate the number of molecules in it -

(a) 3.01×10^{20}
(b) 3.01×10^{12}
(c) 3.01×10^{23}
(d) 3.01×10^{24}

Sol. (b)

$\because$ $22400\ cc\ of\ gas\ at\ STP\ has\ 6 \times 10^{23}\ molecules$

$\therefore$ $1.12 \times 10^{-7}\ of\ gas\ at\ STP\ has$

$\frac{6\times10^{23}\times1.12\times10^{-7}}{22400} = 0.03 \times 10^{14} = 3 \times 10^{12}$

Q32. The volume occupied by 4.4 g of CO_2 at STP is

(a) 22.4 L
(b) 2.24 L
(c) 0.224 L
(d) 0.1 L

Sol. (b)

44 g CO_2 occupies 22.4 L at STP

4.4 g CO_2 occupies $\frac{22.4}{44} \times 44 = 2.24\ L$

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Q33. The angular momentum of the electron in first excited energy state of hydrogen atom is

(a) h/π

(b) h/2π

(c) $\sqrt{2\,(2+1)}\,\frac{h}{2\pi}$

(d) $None\ of\ these$

Sol. (a)

Angular momentum, mvr = $n\frac{h}{2\pi}$

Q34. Proton bombardment of Th^{230} followed by emission of two alpha particles produces

(a) Rn^{232}

(b) Fr^{223}

(c) Ra^{223}

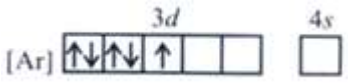
(d) Fr^{222}

Sol. (b)

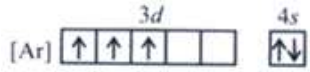
$_{90}Th^{230} + {}_{1}H^{1} \xrightarrow{-\alpha} 89\,Ac^{227} \xrightarrow{-\alpha} {}_{87}Fr^{223}$

Q35. The electronic configuration of Mn^{2+} is

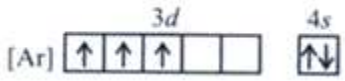
(a)



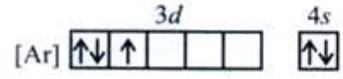
(b)



(c)



(d)



Sol. (c)

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Q36. In the radioactive decay

$zA^{A} \rightarrow z-2^{B^{A-4}} \rightarrow z-1^{C^{A-4}} \rightarrow z^{A^{A-4}}$

the sequence of radiation emitted is

(a) α, ß, γ
(b) α, ß, ß
(c) ß, α, α
(d) α, ß, ß

Sol. (b)

Q37. Dry ice is

(a) Ice having no water of crystallisation
(b) Ice that has been dried
(c) Solid carbon dioxide
(d) None of these

Sol. (b)

Q38. Smoke is an example of

(a) Gas dispersed in liquid
(b) Gas dispersed in solid
(c) Solid dispersed in gas
(d) Solid dispersed in solid

Sol. (c)
Smoke consist of carbon particles (solid) dispersed in air (gas).

Q39. When dispersed phase is liquid and dispersion medium is gas then the colloidal system is called

(a) Smoke
(b) Clouds
(c) Jellies
(d) Emulsions

Sol. (b)
Cloud consists of fine droplets of water suspended in air.

Q40. Cloud or fog is an example of colloidal system of

(a) Liquid dispersed in gas
(b) Gas dispersed in gas

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(c) Solid dispersed in gas
(d) Solid dispersed in liquid

Sol. (a)
Fog is a colloidal system consisting water droplets dispersed in air.

Physics

Q41. The unit of power is _____
(a) watt per second
(b) joule
(c) kilojoule
(d) joule per second

Sol. (d)

Q42. 3730 watts = _____h.p.
(a) 5
(b) 2
(c) 746
(d) 6

Sol. (a)

Q43. A coolie carries a load of 500 N to a distance of 100 m. The work done by him is
(a) 5 N
(b) 50,000 Nm
(c) 0
(d) 1/5 N

Sol. (c)

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Q44. The P.E. of a body at a certain height is 200 J. The kinetic energy possessed by it when it just touches the surface of the earth is

(a) > P.E.
(b) < P.E.
(c) = P.E.
(d) cannot be known

Sol. (a)

Q45. The frequency of a wave travelling at a speed of 500 ms-1 is 25 Hz. Its time period will be _____.

(a) 20 s
(b) 0.05 s
(c) 25 s
(d) 0.04 s

Sol. (d)

Q46. The amplitude of a wave is _____.

(a) the distance the wave moves in one second
(b) the distance the wave moves in one time period of the wave
(c) the maximum distance moved by the medium particles on either side of the mean position
(d) the distance equal to one wave length

Sol. (c)

Q47. Which of the following is not a characteristic of a musical sound?

(a) Pitch
(b) Wavelength
(c) Quality
(d) Loudness

Sol. (b)

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Q48. Sound waves do not travel through
(a) solids
(b) liquids
(c) gases
(d) vacuum

Sol. (d)

Q49. Name the fundamental force which holds the planets in their orbits around the sun.
(a) Gravitational force of attraction
(b) Electrostatic static force of attraction
(c) Nuclear force of attraction
(d) Electro static force of attraction

Sol. (a)

Q50. When an object is thrown up, the force of gravity _____.
(a) is opposite to the direction of motion
(b) is in the same direction as the direction of motion
(c) becomes zero at the highest point
(d) increases as it rises up

Sol. (a)

Q51. What is the final velocity of a body moving against gravity when it attains the maximum height?
(a) Zero
(b) $u^2/2g$
(c) h/t
(d) 2gh

Sol. (a)

Q52. A stone is dropped from a cliff. Its speed after it has fallen 100 m is
(a) 9.8 m/s
(b) 44.2 m/s
(c) 19.6 m/s
(d) 98 m/s

Sol. (b)

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Q53. The law that gives a qualitative definition of force is _____
(a) Newton's second law of motion
(b) Law of inertia
(c) Newton's third law of motion
(d) Law of gravitation

Sol. (b)

Q54. Name the property of matter due to which a body continues in its state of rest or uniform motion unless an external force acts on it.
(a) Inertia
(b) Elasticity
(c) Viscosity
(d) Density

Sol. (a)

Q55. The S.I. unit of force is
(a) erg
(b) joule
(c) newton
(d) dyne

Sol. (c)

Q56. When a force of 1N acts on a mass of 1kg that is free to move, the object moves with
(a) a speed of 1 m/s
(b) a speed of 1 km/s
(c) an acceleration 10 m/s^2
(d) an acceleration of 1 m/s^2

Sol. (d)

Q57. An object moving with a speed of 5 m/s comes to rest in 10 s, after the brakes are applied. What is the initial velocity?
(a) zero
(b) 5 m/s
(c) 15 m/s
(d) 50 m/s

Sol. (b)

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Q58. A body moving along a straight line at 40 m/s undergoes an acceleration of 4 m/s2. After 10 seconds its speed will be

(a) 20 m/s
(b) 28 m/s
(c) 16 m/s
(d) 80 m/s

Sol. (d)

Q59. SI unit of acceleration is _____.

(a) m /s^2
(b) km /h^2
(c) cm / s^2
(d) km / min^2

Sol. (a)

Q60. Retardation is _____.

(a) negative acceleration
(b) positive acceleration
(c) uniform acceleration
(d) variable acceleration

Sol. (a)