Std IX - Dr Homi Bhabha Bal Vaidyanik Spardha
2013 Test Paper

1. SI unit of momentum is_____

a. g cm S^{-1} b. kg m S^{-1}

c. kg cm S^{-1} d. None of these

2. Convex mirror is used in street lamps while concave mirror is used in headlights of car because_____.

a. Focal length of convex mirror is negligible and focal length of concave mirror is sizable.

b. Convex mirror produces erect and enlarged image while concave mirror produces erect and diminished image.

c. Convex mirror produces diverge light and concave mirror produces strong parallel beam of light.

d. Convex mirror produces large field of view and concave mirror produces acute field of view.

3. Mars happens to be closer to the Earth every__ months.

a. 26   b. 12   c. 40   d. 32

4. If glass rod is rubbed on silk cloth, what will be the direction of transfer of electrons?

a. From air to glass rod

b. From silk cloth to glass rod

c. From glass rod to silk cloth

d. Both ways, from silk cloth to glass rod and from glass rod to silk cloth

5.

a. Ventilators are located near roof of the room.

b. Heaters are placed at lower levels of room.

Choose the correct option to justify above statements.

a. To balance light and air in the room

b. Heat radiation travels in straight line

c. This arrangement saves energy

d. Warm air rises arid cold air sinks

6. In which of the following media, speed of sound will be maximum?

a. Solid b. Liquid   c. Gas   d. Plasma

7.

A pure metal ring shown in figure is heated over 200 °C. What will be its shape then? •
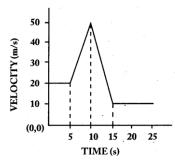

8.   "School bags have broad shoulder straps." Which formula can justify above statement; if symbols have their standard meanings.

a. $F = mg$ b. $P = F/A$ c. $F_1 = -F_2$ d. $F = F_1 + F_2$.

9. Mass of electron = K x mass of proton. Here approximate value of 'K' will be_____

a. 1/1000   b. 1/2000 c.1/10000 d. 1/20000

10.   Convert 72 km/hr into MKS system.
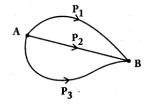
a. 200 m/s   b. 2 m/s   c. 0.2 m/s d. 20 m/s

11.

Study the velocity - time graph.
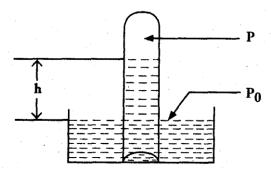
Choose the incorrect statement from the following.

a.After 5 sec, body increases its velocity.

b.Between 10 s and 15 s, body has negative acceleration.

c. In first 5 sec, body travels 100 meter

d. After 15 sec, body comes to rest.

12. Brightest star in the night sky is_

a. Sirius   b. Polaris   c. Antares   d. Pollux

13. Which of the following pairs of instruments work on same principle?

a. Thermos and Thermometer

b. Thermos and Calorimeter

c. Calorimeter and Pressure Cooker

d. Solar water heater and Thermos

14. A stone tied with string is in uniform circular motion at 5 rotations/minute. Choose the incorrect statement.

a. It has uniform velocity

b. It takes 12 sec to complete one rotation

c. Its speed depends on the length of the string

d. It will be thrown tangentially if cut off from the string

15. A car travels 30 km at uniform speed of 40 km/h and next 30 km at uniform speed of 20 km/h. What will be the average speed of car?

a. 20 km/h b.30 km/h   c. 26.6 km/h   d. 32.3 km/h

16. Three persons travel from 'A' to 'B' from three different paths P_1, P_2 and P_3 as shown in the figure. If W_1 W_2 and W_3 represent respective work done by them, then choose the correct option for above situation.

a.$W_1 < W_2 < W_3$ b. $W_2 = W_1 < W_3$

c. $W_1 = W_2 = W_3$ c. $W_2 = W_3 > W_1$

17.   Identify the scientist associated with following inventions, a. Reflecting speaker system b. Revolutionary suspension system for car c. Active noise reducing headphones

a. Amar Bose b. Satyendranath Bose d. J. C. Bose

d.Ranjan Bose

For a mercury barometer shown above, what will be 'P' if P_0 is atmospheric pressure.
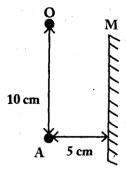
a.$P = P_0$ b. $P = 0$ c. $P = hpg$ d. $P = P_0 - 9.8566$ $x10^{-4}$

19.   If an object of 10 kg is taken to the centre of the Earth, what will be its weight ?

a. 98 kg   b.98 N   c. 0 kg   d. 0 N

20. In electric circuit ' $\sim\!\!\sim$ ' symbol means?

a. Key   b. Battery   c. Resistance d. Insulator

21.   Choose the incorrect statement for electric guitar.

a. Electric guitar is heavier than normal guitar

b. It has a hollow body

c. Magnets are inbuilt components of electric guitar .

d. No. of strings in electric guitar and normal guitar are same

22. Gas —$\xrightarrow{Energy}$— Plasma This change is categorised as_____
a. Subtle change   b. Cooling by evaporation
c. hysical change   d. Chemical change
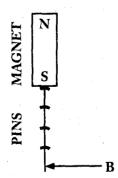
23.

The diagram shows observer 'O' and object 'A'. What will be the distance between 'O' and image of 'A' in mirror?
a. 10 cm   b. 5 cm c. 10√2 cm   ® 5√5 cm

24.   "On a highway, it is necessary to tie safety belts while travelling in a car." This can be explained by_____.
a. Law of gravitational force   b. First law of motion
c. Second law of motion   d. Third law of motion

25.
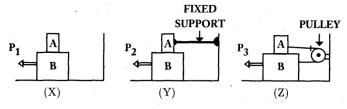

Observe the diagram. Which 'pole will be induced at 'B' end of the fourth pin?
a. Interchanging   b. Nil c. North   d. South

26.   Mass of a block of length 4 cm, breadth 3 cm and thickness 2 cm is 20 gm. Density of liquid in which it will float should be_____
a. 0.8 gm/cm^3 b. 0.6 gm/cm^3 c. less than 0.6 gm/cm^3
d. greater than 0.9 gm/cm^3

27.   Mineral oil is found nearly _____ meter deep in the bowels of the Earth.
a. 25,000   b. 20,000 c. 15,000   d. 10,000
Question Paper 2013

28.   Which two planets in the solar orbit do not have any moons?
a. Mercury and Uranus   b. Uranus and Neptune
c.Venus and Neptune   d.Mercury and Venus

29.

Observe the diagram which shows object 'A' and 'B' kept on each other. If force applied on each to move object B to its left, is P_1 P_2 and P_3 respectively, choose the correct option. a. $P_1 > P_2 > P_3$ b. $P_3 > P_2 > P_1$
c. $P_1 = P_3 < P_2$ d. $P_1 = P_2 = P_3$

30.   Which instrument is preferred to detect direction and strength of small current in circuit?
a. Ammeter   b. Gyrometer
 c. Galvanometer   d. Voltmeter

 31.   The current system of chemical notation was invented by_____.
a. Mendeleev b. Berzelius c. Dalton   d. Rutherford
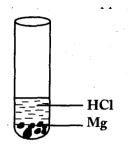
32. Select the incorrect statement for matter. It_____.
a. occupies space   b. has volume
c. is ductile   d. is made up of particles

33. Select the correct expression from the following_____
a. A = Number of neutrons   b. For isobars 'Z' will be same
c. Z = No. of protons + No. of neutrons   d. N = A - Z

34. Observe the diagram. When a burning matchstick will be taken near the test tube, what will happen?

a. It will burn with white crackles
b. It will be put off immediately
c. It will burn with a pop
d. It will burn with a bright while flame

35. Calculate the number of atoms in 5 g of Hydrogen.
a. 3.011×10^{24} b. 1.505×10^{24} atoms
c. 1.25×10^{23} atoms   d. 7.5275×10^{23} atoms

36. Which type of coal will give out maximum heat?
a. Lignite   b. Peat   c. Bituminous   d. Anthracite

37. In wafer packets Nitrogen is used to keep wafers crisp because _____ .
a. it is major component of air   b. it is non-reactive
c. it absorbs moisture   d. it acts as antifungal agent

38. When Copper sulphate crystals are heated in a dry test tube, some water droplets are observed in the test tube. This water is _____ •
a. atmospheric moisture   b. water of hydration
c. water of crystallisation   d. water of sublimation

39. Cranes have metallic rope-wires for lifting load because metals _____ .
a. are hard   b. are malleable
c. are ductile   d. have tensile strength

40. Choose the best option for demonstration of Tyndall effect,
a. Molten ghee   b. Vinegar
c. Refined oil   d. Fresh orange juice

41. Which method is used in industries to separate sugar crystals from saturated sugar soulution?
a. Fractional distillation   b. Distillation
c.Centrifugation   d. Sublimation   ..   .

42. Which of the following holds true for number of electrons in outermost shell of an atom of a non-metal?
a. ≥ 3 b. ≥ 5 c. <4 d. ≤ 3

43. Duralumin used in manufacture of aeroplanes is an alloy of.
a. Al, Cu, Mg, Mn   b. Al, Zn, Cr, Sn
c. Al, Cu, Mn, Sn   d. Al, Zn, Mg, Mn

44. Electronic configuration of an element is, $1S^2\ 2S^2\ 2P^6\ 3S^2\ 3P^8$. What will be its valency?
a. 2   b. 8   c. 0   d. 6

45. Which of the following is a normal salt?
a. Baking soda   b. Washing soda
c. Caustic soda   d. Caustic potash

46. Liquids and gases are called fluids, because_____
a. they acquire shape of the container
b. they freeze on cooling
c. they evaporate on heating
d. they can flow

47. Permanently hard water can be softened by____
a. boiling   b. distillation
c. adding Sodium carbonate   d. adding Epsum salt

48. Which method you can use to separate acetone and water from the mixture of both?
a. Distillation   b. Centrifugation.
c. Separating funnel   d. Sublimation

49. Which noble gas is used in miner's cap lamp?
a. Argon   b. Helium   c. Krypton ,   d. Radon

50. Number of molecules present in 1 mole of Hydrogen and 1 mole of Oxygen are respectively_____.
a. 6.023×10^{23} and 6.023×10^{23}
b. 6.023×10^{19} and 6.023×10^{23}
c. 6.023×10^{24} and 6.023×10^{16}
d. 6.023×10^{22} and 6.023×10^{23}

51. Which of the followng is a decomposition reaction?
a. $Fe + CuSO_4 \rightarrow FeSO_4 + Cu$
b. $2Pb(NO_3)_2 \rightarrow 2PbO + 4NO_2 \uparrow + O_2\uparrow|$
c. $2Al + 3I_2 \rightarrow 2AlI_3$
d. $Fe + 2AgNO_3 \rightarrow Fe(NO_3)_2 + 2Ag$

52. Which of the following represents cane-sugar (sucrose)?
a. $C_6H_{12}O_6$ b. $C_6H_{12}O_3$ c. $C_{12}H_{22}O_{11}$ d. $C_6H_{22}O_6$

53. Select the incorrect option for O_2 and CO_2
a. Both are colourless and odourless gases
b. CO_2 is collected by upward displacement of air in laboratory preparation
c. O_2 is freely soluble in water
d. O_2 is collected by downward displacement of water in laboratory preparation

54. Select a group of ions having equal valency.
a. Mercurous, Ferrous, Cuprous
b. Ferrous, Cupric, Mercuric
c. Plumbous, Ferric, Cuprous
d. Plumbic, Stannic, Cupric

55. Type of solution of Sodium amalgum is _____
a. solid in Gas   b. solid in solid
c. gas in solid   d. liquid in solid

56. Identify the reaction that takes place in a fire extinguisher.
a. $CaCO_3 + 2HCl \rightarrow CaCl_2 + H_2O + CO_2$
b. $CH_4 + 2O_2 \rightarrow CO_2 \uparrow + H_2O + Heat$
c. $2NaHCO_3 + H_2SO_4 \rightarrow Na_2SO_4 + 2H_2O + 2CO_2\uparrow$
d. $CO_2 + H_2O \rightarrow H_2CO_3$

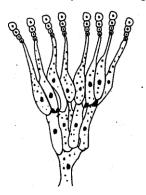57. Identify the crystal lattice of Diamond from the following.

58. Chlorine atom is_____
a. bigger in size than chloride ion
b. smaller in size than chloride ion s
c. ame in size as chloride ion
d. Can't say

59. Maximum how many electrons can fit in third orbit of an atom?

a. 2   b. 8   c. 32   c. 18

60. Which of the following molecular formulae of compounds is not correct?

a. $Al_2(SO_4)_3$ b. KNO_3 c. $Ca_2(PO_4)_3$ d. $CuSO_4 . 5H_2O$

61. Which of the following contains maximum amount of vitamin C?

a. Amla   b. Lemon   c. Orange   d. Sweet lime

62. Which of the following plants does not bear flowers?

a. Grass   b. Betelnut   c. Banyan   d. Cycas

63. Identify the following figure.

a. Aspergillus   b. Chlamydomonas
c. Penicillium   d. Yeast

64. Which of the following cell organelle has cis and trans faces?

a. Nucleolus   b. Golgi complex
c. Chloroplast   d. Endoplasmic reticulum

65. What are the applications of deep well injection system?

a. Disposal of nuclear waste

b. Disposal of hazardous waste water

c. Enhancing oil production from oil well

d. All of the above

66. Select the correct statement.

a. Rohu has both; cartilage and bones as endoskeleton.

b. Dog fish and Dolphins do not have scales.

c. Ray fish has no scales.

d. Myxine is an eel.

67. Select the odd one out on the basis of commercial use. a. Serpentina   b. Raanbhendi   c. Gulvel   d. Asparagus

68. Which of the following is not related to commands carried by efferent nerve?

a. Holding a bag tightly b. To run away on spotting a snake c. To detect fragrance of a flower   d. Chewing food

69. Which of the following is not cultivated for human consumption?

a. Barseem   b. Barley   c. Lettuce   d. Oats

70. Which one of the following would lack cell organelles? A. Salmonella   b. Nitrasomonas   c. WBC   d. H1N1

71. Select the odd one out.

a. Pollen grain   b. Ovum   c. Zygote   d. Sperm

72. Identify the correct diagram for a piece of Lady's finger in 'Bhindi Masala'.
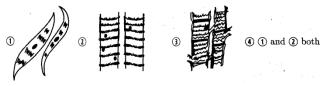

73. Select the odd one out of the following.

a. Gum   b. Starch   c. Resin   d.Catechu

74. Digestion of which of the following food-nutrient will start in mouth?
a. Starch   b. Protein   c. Fat   d. All of these

75. Select the correct statement for difference between xylem tracheids and xylem vessels.
a. Tracheids are dead cells while vessels are living cells.
b. Tracheids are permeable while vessels are impermeable to water.
c. Tracheids conduct food while vessels conduct water.
d. Tracheids have tapering ends while vessels are wider continuous tubes.

76.   Which rays help in preventing spoilage of potatoes due to sprouting?
a. α rays   b. Infrared rays   c. γ rays   d. uv rays

77. Select the incorrect statement about photosynthesis.
a. Rate of photosynthesis varies with wavelength of light.
b. It is the way of releasing solar energy.
c. Insectivorous plants carry out photosynthesis.
d. It is the nature's way of fixing CO_2.

78.   Select the odd one out on the basis of vegetative propogation.
a. Sweet potato   b. Turmeric   c. Colocasia   d. Canna

79.   Which of the following muscles will bring about contraction of stomach?

① ② ③ ④ ① and ② both

80.   Select the correct statement of the following.
a. All plants are producers.
b. Flow of energy in an ecosystem is cyclic.

c. Ecological role of an organism in an ecosystem is niche. d. A tree is an example of a biome.

81. Ariitbiotics are not effective in which of the following diseases?
a. Typhoid   b. Malaria   c. Diarrhoea   d. Common cold

82.   Which of the following is not the use of lac?   .
a. Grinding wheel used for sharpening knives
b. To produce red ink for gel pen
c. For sealing envelopes
d. Jewellery making

83.   Select the odd one out.
a. Shrikhand   b. Cheese   c. Basundi   d. Yogurt

84. Pathogens of which of the following diseases primarily affect nervous system?
a. Rabies, Tetanus, Polio   b. Rabies, Rubella. Mumps
c. Diphtheria. Polio, German measles
d. Polio. Measles, Tetanus

85. Petals of shoeflower are made up of_____ tissue.
a. epidermis   b. parenchyma   c. phloem d. sclerenchyma

86. Water slides down fast from the surface of lotus leaf, because_____
A. water floats on small air pockets present on leaf surface
B. leaf has waxy coat
C. leaf is flat
a. Only a   b. b and c   c. a and b   d. Only b

87.   Select the odd one out on the basis of parasitism.
a. Cuscuta   b. Vanda   c. Sandal wood   d. Loranthus

88. In pasterisation of milk, it is heated to a temperature of _____ and cooled down quickly.
a. 60 °C   b. 70 °C   c. 75 °F   d. 80 °C

89. Select the correct option for humus.
a. It is a non living substance
b. It is the micro organisms in soil
c. It does not contain Carbon
d. It is decayed soil

90. Identify unicellular alga of the following.
a. Ulothrix   b. Moss   c. Diatom   d. Rhizobium

91. Choose the correct option for gorrilla glass.
a. Pyrex
b. Aluminosilicate glass dipped in hot Potassium salt bath c. Lithium glass
d. Borosilicate glass dipped in hot Potassium salt bath

92. What is the peculiarity of 'Pinak', the new antivenin produced in Maharashtra ?
a. Tablets made from traditional antivenin
b. Intravenous drip made from ayurvedic extracts of flame of forest. Jasmin, Jamun etc.
c. Tablets made from extracts of flame of forest. Jasmin. Jamun etc.
d. Injection made traditional antivenin

93. Select the correct option for rainfall in a cloudburst.
a. > 50 mm/hr.   b. > 2 inches/hr.
c. > 100 mm/hr.   d. > 8 inches/hr.

94. What is the main purpose of the project IRNSS by ISRO?
a. To provide India's very own GPS system.
b. To develop indegenous technique to position a satellite in geosynchronus orbit.
c. Continuation of Chandrayan/moon probing.
d. Cloud mapping and weather forecasting to aid INSAT.

95. INS Sidhurakshak, was a 'kilo class' submarine. A 'kilo class' submarine uses _____ type of fuel.
a. Nuclear   b. Diesel-electric
c. Kryogenic   d. White Kerosene

96. What is 'Project Loon' by Google?
a. Cloud computing by Google
b. Providing internet services in remote areas of the world c. Internet call system
d. Database safety programme by Google

97. Sunscreen lotion contains _____ and _____ to protect skin from solar radiation.
a. Magnesium oxide and Zinc oxide
b. Zinc oxide and oil
c. Zinc oxide and Titanium oxide
d. Magnesium oxide and oil

98. What is 'GRIHA' ?
a. Organisation to design eco-housing for developing cities.
b. Training tribals to protect forest through life style changes.
c. Environmental audit of construction activity.
d. National rating system for green buildings.

99. The 'election-ink' leaves mark on skin because it contains ._____
a. ink from ink sacs of octopus
b. iron gall ink
c. silver nitrate
d. charcoal powder and gum arabica

100. Person having the rare 'Bombay blood group' does not have _____ in his blood.
a. Rh factor   b. H antigen
c. A and B antibody   d.O antigen

****

Standard IX – Model Answers 2013 *(with Explanations)*

A. 1. (2) **Explanation:** Momentum of an object is equal to the mass of the object times the velocity of the object.

∴ Momentum (P) = Mass (m) x Velocity (v)

SI unit of mass is kg and that of velocity is m/s.

∴ SI unit of momentum is kg ms⁻¹

A. 2. (3)

A. 3. (1)

A. 4. (3) **Explanation:** Different materials have different electron affinities. When a glass rod is rubbed on silk cloth, the atoms of rod and the atoms of the silk interact and due to the inherent characteristics, the silk atoms pull electrons from the rod's atoms. Thus, the silk becomes negatively charged and rod becomes positively charged.

A. 5. (4) **Explanation:** Due to heat, air becomes lighter and move upwards, hence get exhausted from the ventilators located near the roof of the room. Cold air enters from upper level and then sinks in the room.

A. 6. (1) **Explanation:** Sound travels fastest through solids. This is because molecules in a solid medium are much closer than those in a liquid or gas, allowing sound waves to travel more quickly through it.

A. 7. (3) *Explanation: Pure metals expand regularly and uniformly.*

A. 8. (2) **Explanation:** Pressure is inversely proportional to area. The broader the straps of the school bags, the lesser will be the pressure (felt on the back).

A. 9. (3)

A. 10. (4) **Explanation:** 72 km/hr

= (72 x 1000 m)/ 3600 s

= 20 m/s

A. 11. (4)

A. 12. (1)

A. 13. (2) **Explanation:** In both thermos and calorimeter, heat loss is prevented.

A. 14. (1) **Explanation:** In circular motion, direction changes at each moment. Hence it can not be uniform velocity.

A. 15. (3) **Explanation:** 30 km distance is travelled with a speed of 40 km/h

∴ Time required = 3/4 hr.

Further 30 km distance is travelled with a speed of 20 km/h

∴ Time required = 3/2 hr.

Total distance travelled = 30 km + 30 km = 60 km

∴ Total time taken = 3/4 + 3/2 = 9/4 hr.

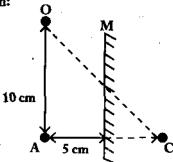$$\text{Average speed} = \frac{60}{9/4} = \frac{60 \times 4}{9} = \frac{240}{9} = 26.6 \text{ km/h}$$

A. 16. **(3) Explanation:** Work is directly proportional to displacement. Here, displacemewnt is from A to B.

$$\therefore W_1 = W_2 = W_3$$

A. 17. **(1)**
A. 18. **(2)**
A. 19. **(4)**
A. 20. **(1)**
A. 21. **(2)**
A. 22. **(3)**

A. 23. **(3) Explanation:**

Let us form a Pythagoras triangle OAC.
Let OA = a = 10 cm
AC = b = 5 + 5 = 10 cm
and OC = C
By Pythagoras' theorem,
$a^2 + b^2 = c^2$
$c^2 = (10)^2 + (10)^2 = 200$

$$\therefore c = \sqrt{200} = \sqrt{100 \times 2} = 10\sqrt{2}$$

A. 24. **(2)**
A. 25. **(4)**
A. 26. **(4) Explanation:** Volume = Length x Breadth x Height (Thickness)
4 x 3 x 2 = 24 cm³
Density (ρ) = 20 gm/ 24 cm³ = 0.833 gm/cm³
$\therefore$ Density of liquid should be greater than 0.9 gm/cm³

A. 27. **(1)**
A. 28. **(4)**
A. 29. **(2)**
A. 30. **(3) Explanation:** Galvanometer is the most sensitive instrument.
A. 31. **(2)**
A. 32. **(3) Explanation:** Matter need not be always ductile. E. g. Non-metals such as Graphite (pencil point) are not ductile.

A. 33. (4) Explanation: A = No. of nucleons, Z is atomic number
and N = No. of neutrons
And, A = Z + N
∴ N = A − Z

A. 34. (3) Explanation: Hydrogen gas is evolved in the reaction shown in the diagram. Hence matchstick will burn with a pop.

$$Mg + 2\ HCl \rightarrow MgCl_2 + H_2 \uparrow$$

A. 35. (1) Explanation: Note that Hydrogen is bi-atomic
Molecular weight of H_2 = 2 g molecule
No. of moles = 5/2 = 2.5
No. of atoms = 2 x 2.5 x 6.023×10^{23} 1 mol = 6.023×10^{23}
= 5 x 6.023×10^{23} (Avogadro constant)
= 3.011×10^{24}

A. 36. (4) Explanation: Anthracite has maximum percentage of Carbon (80%). The Bituminous, Lignite and Peat Coal has 60%, 22% and 11% of Carbon respectively.

A. 37. (2)

A. 38. (3) Explanation: Copper sulphate crystals contain water of crystallization. ($CuSo_4.5H_2O$) on heating, hydrated Copper sulphate loses its water molecule.
$$CuSO_4.5H_2O \xrightarrow{\text{Heat}} CuSo_4 + 5\ H_2O$$

A. 39. (4)

A. 40. (4) Explanation: Rest of the three are clear liquids.

A. 41. (3)

A. 42. (2) Explanation: Metals are electron donors.

A. 43. (1)

A. 44. (3) Explanation: For the given element, the outermost orbit contains 8 electrons, i. e. it is satisfied. Hence the valency is '0'.

A. 45. (2)

A. 46. (4)

A. 47. (3) Explanation: Permanent hardness is caused due to sulphates and chlorides of Calcium and Magnesium. Addition of Sodium carbonate to such water leads to formation of carbonates of Ca and Mg. These carbonates can be removed by filteration because they are insoluble in water.

$$MgSO_4 + Na_2CO_3 \rightarrow MgCO_3 + Na_2SO_4$$
$$CaCl_2 + Na_2CO_3 \rightarrow CaCO_3 \downarrow + 2NaCl$$

A. 48. (1) Explanation: Acetone is miscible in water.

A. 49. (3)

A. 50. (1) Explanation: 1 Mole of a substance is equal to atomic/molecular mass expressed in terms of grams. 1 mole of any atom/molecule is contains 6.022×10^{23} atoms/molecules (Avogadro number)
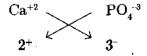
A. 51. (2) **Explanation:** Options 1 and 4 represents displacement reactions; while option 3 represents combination reaction.

A. 52. (3)

A. 53. (3)

A. 54. (2) **Explanation:** All three have valency +2. Note that for variable valency, lower valency is represented by the name ending with 'ous' and higher valency with 'ic'. E. g. Fe^{++} is ferrous and Fe^{+++} is ferric.

A. 55. (4) **Explanation:** Sodium amalgum is prepared by the addition of weighed amount of metallic Sodium to liquid Mercury or vice versa.

A. 56. (3)

A. 57. (3)

A. 58. (2) **Explanation:** Chloride ion is formed by gaining one electron

A. 59. (4) **Explanation:** In any orbit,
No. of elements $= 2n^2$
$\therefore$ In third orbit electrons would be
$2 (3)^2 = 2 \times 9 = 18$

A. 60. (3) **Explanation:**

$$Ca^{+2} \quad\diagdown\kern-1em\diagup\quad PO_4^{-3}$$
$$2^+ \qquad\qquad 3^-$$

$\therefore$ Correct molecular formula would be $Ca_3 (PO_4)_2$

A. 61. (1)

A. 62. (4) **Explanation:** Rest all are angiosperms.

A. 63. (3)

A. 64. (2)

A. 65. (4)

A. 66. (1)

A. 67. (2) **Explanation:** *Raanbhendi* is used for extraction of biodiesel. Rest of the three are medicinal plants.

A. 68. (3) **Explanation:** In the nervous system, efferent nerves or motor neurons carry nerve impulses away from the central nervous system to effectors such as as muscles or glands. Actions described in options 1, 2 and 4 fall in this category. Afferent nerves or sensory neurons carry nerve impulses from sensory organs towards the central nervous system. 'Detecting the fragrance of a flower' fall in this category.

A. 69. (1) **Explanation:** Barseem is raised as fodder for livestock.

A. 70. (4) **Explanation:** H1N1 is a virus. (It is responsible for swine flu pandemic)

A. 71. (3) **Explanation:** Rest all are haploid.

A. 72. (2)

A. 73. (2) **Explanation:** Rest all are excretory products of plant.

A. 74. (1) **Explanation:** Saliva (secreted by salivary glands in the mouth) dissolves some of the chewed food and act as a lubricant while passing the food through digestive tract. Saliva also contains a starch digesting enzyme called amylase (ptyalin). In this way, the process of digestion begins in the mouth itself.

A. 75. (4)

A. 76. (3)

A. 77. (2) **Explanation:** It is the way of trapping solar energy.

A. 78. (1) **Explanation:** It is a root. Rest all are stem modifications.

A. 79. (1) **Explanation:** Stomach is lined by smooth muscle fibers. Option 2 shows skeletal; while option 3 shows cardiac muscles.

A. 80. (3)

A. 81. (4) **Explanation:** It is a viral disease.

A. 82. (2)

A. 83. (3) **Explanation:** In rest of the options fermented milk is used.

A. 84. (1)

A. 85. (2)

A. 86. (3)

A. 87. (2) **Explanation:** Vanda - also known as Blue Orchid falls in the category of plants that show commensalism. Commensalism is a relation in which one species obtain food or other benefits from the other species without either harming or benefitting the latter.

A. 88. (4)

A. 89. (1)

A. 90. (3)

A. 91. (2)

A. 92. (3)

A. 93. (3)

A. 94. (1) **Explanation:** The Indian Regional Navigational Satellite System (IRNSS) is an autonomous regional satellite navigation system being developed by ISRO. The applications of IRNSS include terrestrial, aerial and marine navigation, disaster management, vehicle tracking and visual and voice navigation for drivers.

A. 95. (2)

A. 96. (2) **Explanation:** Project Loon is a network of balloons travelling on the edge of space, designed to connect people in rural and remote areas, help fill coverage gaps, and bring people back online after disasters. The project began in June 2013 with an experimental pilot in New Zealand.

A. 97. (3)

A. 98. (4) **Explanation:** GRIHA - which stands for Green Rating for Integrated Habitat Assessment is India's national rating system for Green Buildings.

A. 99. (3)

A. 100. (2)

SUCCESS

······· {IS A} ·······

SERIES

OF

SMALL

WINS

JAIME TARDY

THEEVENTUALMILLIONAIRE.COM