# Elite 11 (PBC) Sample Paper

This question paper is a model test paper. Some of these questions may have appeared in the previous years' tests. The actual test may have a different number of questions and questions of different types. This paper is meant only to provide an idea of the kind of questions that may be asked in the test

2. If salivary amylase is lacking in the saliva, which of the following events in the mouth cavity will be affected?
   a) Proteins breaking down into amino acids
   b) Starch breaking down into sugars
   c) Fats breaking down into fatty acids and glycerol
   d) Absorption of vitamins

3. Wings of birds and insects are –
   a) Vestigial organs
   b) Homologous organs
   c) Analogous organs
   d) Paralogous organs

4. Two arteries and two veins are labelled in the diagram. Which two are veins?
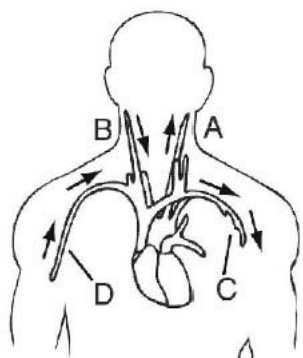

   a) B and D
   b) A and B
   c) B and C
   d) C and D

5. After an accident, Ram lost his memory, intelligence and ability to think and reason out. It also affected his ability to hear and see. Which part of the central nervous system was most likely affected in the accident?
   a) Spinal cord
   b) Forebrain
   c) Midbrain
   d) Hindbrain

6. Arun leaves home while it is still dark and returns late at night because the factory he works in is very far away. He was suffering from severe back ache and had a fracture in his hand. On consulting a doctor, he was told that he could be suffering from a vitamin deficiency. The doctor recommended that he take a walk in the morning sun for half an hour every day. Arun followed his doctor's advice and in six month's time, he was feeling much better.
   Based on the doctor's recommendations, which of these could be the vitamin that his body was lacking?
   a) Vitamin A
   b) Vitamin B
   c) Vitamin C
   d) Vitamin D

7. Which of these would be found in all prokaryotic and eukaryotic cells?
   a) chromosome
   b) chloroplast
   c) nucleus
   d) cell wall

8. Two pea plants one with round green seeds (RRyy) and another with wrinkled yellow (rrYY) seeds produce F_1 progeny that have round, yellow (RrYy) seeds. When F_1 plants are selfed, the F_2 progeny will have the new combination from the following:
   (i) Round, Yellow (ii) Round, green (iii)Wrinkled, yellow (iv) Wrinkled, green
   Choose the new combination –
   a) (i) & (iv)
   b) (i) & (ii)
   c) (ii) & (iii)
   d) (i) & (iii)

9. The diagram below shows the locations of the pituitary gland and the kidneys in the human body.
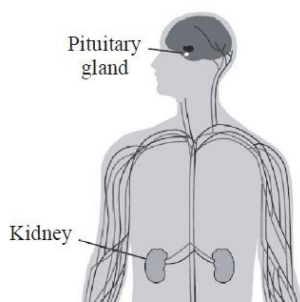
The pituitary gland can release a substance into the bloodstream that signals target cells in the kidneys to reabsorb more water. The released substance is an example of

a) An enzyme
b) **A hormone**
c) Neurotransmitter
d) A vitamin

10. The enzyme pepsin is secreted by –
    a) Inner lining of oesophagus
    b) Inner lining of duodenum
    c) Gall bladder
    d) **Gastric lining of stomach**

11. Protein part of an enzyme is termed as –
    a) **Apoenzyme**
    b) Holoenzyme
    c) Ribosome
    d) Prosthetic group

12. Presence of plastids are characteristic feature of –
    a) Fungi
    b) Animals
    c) Bacteria
    d) **Plants**

13. Which of the following is the first step of photosynthesis?
    a) Splitting of water molecules into hydrogen and oxygen
    b) **Absorption of light energy by chlorophyll molecules**
    c) Reduction of carbon dioxide to carbohydrates

d) Conversion of light energy into chemical energy

14. Neurons have a unique property that makes them to communicate with other cells via:
    a) Nerve Cords
    b) Glial Cells
    c) **Synapses**
    d) Schwann Cells

15. Which of the following has the longest small intestine?
    a) Carnivore
    b) Omnivore
    c) Autotrophs
    d) **Herbivore**

16. Formation of RNA from DNA template is called as –
    a) Transition
    b) Transversion
    c) **Transcription**
    d) Translation

17. The pH of water sample collected from a river was found to be acidic in the range of 3.5 – 4.5. On the banks of the river were several factories that were discharging effluents into the river. The effluents of which one of the following factories is the most likely cause for lowering the pH of river water?
    a) Soap and Detergent factory
    b) **Lead battery manufacturing factory**
    c) Plastic Cup manufacturing factory
    d) Alcohol Distillery

18. In an ecosystem, the 10% of energy available for transfer from one trophic level to the next level is in the form of –
    a) **Chemical Energy**
    b) Heat Energy
    c) Mechanical Energy
    d) Light Energy

19. In the following diagram, which labellings are correct?
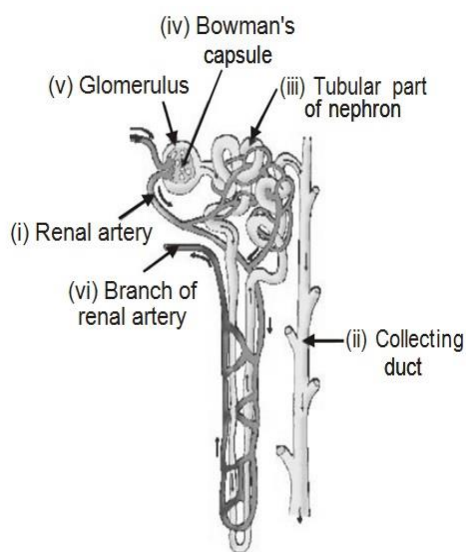
a) (i), (ii) and (iv)
b) (ii), (v) and (vi)
c) (iv), (v) and (vi)
d) **(i), (ii) and (iii)**

20. Which reaction takes place in the stroma of the chloroplast?
    a) **Light independent reaction**
    b) Light dependent reaction
    c) Glycolysis
    d) Krebs cycle

21. Pick the odd one out –
    a) Haemophilia
    b) Down Syndrome
    c) **Malaria**
    d) Phenylketonuria

22. Fluid part of the blood after the removal of corpuscles is –
    a) **Plasma**
    b) Serum
    c) Lymph
    d) Vaccine

23. The growth of the pollen tubes towards ovules is due to –
    a) Hydrotropism
    b) Geotropism
    c) **Chemotropism**
    d) Phototropism

24. In the following set up which shows that "carbon dioxide is given out during respiration", the KOH kept in the flask :
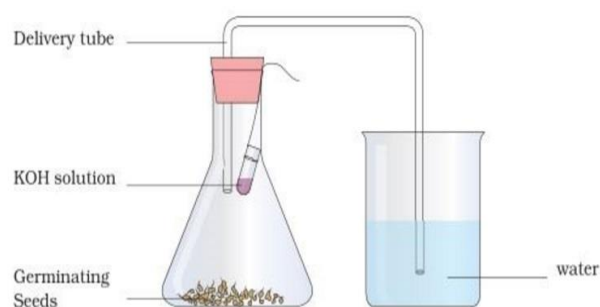

a) Makes the air in the flask alkaline
b) Absorbs Moisture present in the flask
c) Provides oxygen for respiration to the germinating seeds
d) **Creates Partial vacuum**

25. Which of the following bacterial component is made up of DNA?
    a) Ribosome
    b) Lysosomes
    c) **Plasmid**
    d) Protein

26. The process by which seedless fruits are produced is known as –
    a) Apomixis
    b) Polyembryony
    c) Parthenogenesis
    d) **Parthenocarpy**

27. Select **incorrect** statement(s) regarding the given diagram of human brain –
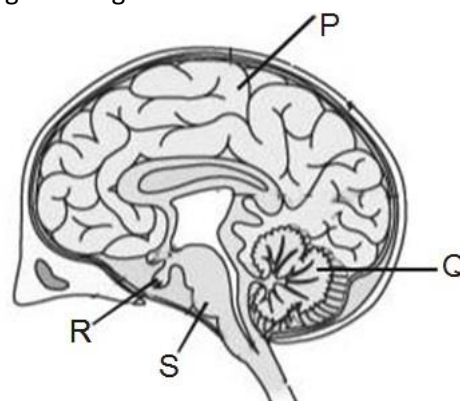
i. **P** is responsible for precision of voluntary actions.
ii. Centre associated with hunger is a part of **P**.
iii. Involuntary actions like salivation and vomiting are controlled by **R**.

iv. **Q** helps in maintaining posture and balance of the body.

v. Reflex actions are controlled by **S**.

a) (i), (ii) and (iii)

b) Only (i)

c) (ii) and (iii)

d) (iii), (iv) and (v)

28. Among mammals, which one plays an important role in the digestion of milk proteins?

a) Pepsin

b) Trypsin

c) Amylase

d) Renin

29. Thorns of Bougainvillea and a tendril of Passiflora are –

a) Modified Leaves

b) Modified Flowers

c) Modified Roots

d) Modified Branches

30. Cut leaves remain green for longer time if dipped in –

a) Cytokinins

b) Auxin

c) Ethylene

d) Gibberellins

31. Which process is taking place in the diagram –

Ribs
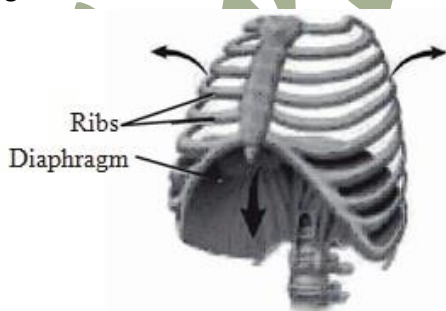
Diaphragm

a) Inhalation; the diaphragm is contracting.

b) Exhalation; the diaphragm is relaxing.

c) Inhalation; the chest cavity is reduced.

d) Exhalation; the rib cage is expanding.

31. What is the minimum resistance which can be made using five resistors each of $1/5 \ \Omega$?

a) $1/5 \ \Omega$

b) $25 \ \Omega$

c) $1/10 \ \Omega$

d) $1/25 \ \Omega$

32. An object placed on a horizontal surface was given a push. It moved some distance and then it stopped. At what time was friction acting on the object?

1. The moment the object was pushed

2. When the object was moving

3. When it was finally in a resting position

a) only 2

b) only 1 and 2

c) only 2 and 3

d) all - 1, 2, and 3

33. The speed-time relation of a car whose weight is 1500 kg is as shown in the given graph. How much braking force has been applied at the end of 7 sec. to stop the car in 2 sec?
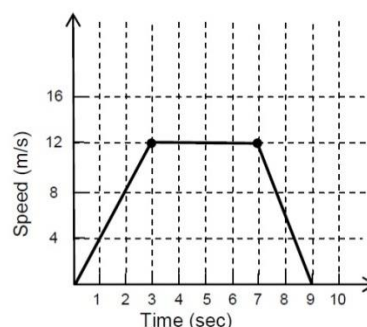
a) 9000 N

b) 2000 N

c) 1200 N

d) 4800 N

34. What is the total resistance between A and B in the circuit shown in the figure –

a) $4 \ \Omega$

b) $5 \ \Omega$
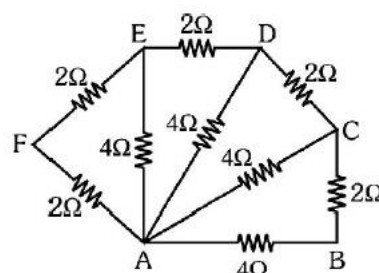
c) $9 \, \Omega$

d) $2 \, \Omega$

35. A positively charged particle going eastwards enters a region of uniform and perpendicular magnetic field. If the particle is deflected vertically upwards, the direction of magnetic field is –
   a) Southwards
   b) Northwards
   c) Due West
   d) Vertically Downwards

36. A ball of mass 50gm moving with a velocity of 6 m/s strikes another ball of mass 25 gm moving in the opposite direction with a speed of 2 m/s. After the collision, the 50 gm ball moves with a velocity of 3 m/s in the same direction. What is the velocity of 25 gm ball?
   a) 4 m/s
   b) 5 m/s
   c) 2 m/s
   d) 3 m/s

37. A person cannot see a distinctly object kept beyond 2 m. This defect can be corrected by using a lens of power –
   a) +0.5 D
   b) -0.5 D
   c) +0.2 D
   d) -0.2 D

38. A ray of light passes through four transparent media with refractive indices μ_1, μ_2, μ_3 and μ_4 as shown in the figure. The surfaces of all media are parallel. If the emergent ray CD is parallel to the incident ray AB, we must have –
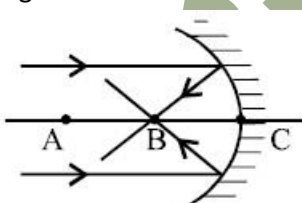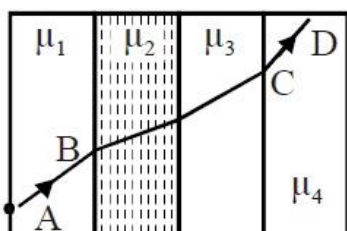

   a) $\mu_1 = \mu_2$
   b) $\mu_2 = \mu_3$

c) $\mu_3 = \mu_4$

d) $\mu_4 = \mu_1$

39. A water heater is rated at 220 V - 2kW. This heater is used for heating 20 kg of water which is initially at 10°C. If the heater is switched on for 14 minutes, what will be the final temperature of water? Take specific heat capacity of water as 4200 J/kg°C.
   a) 30 °C
   b) 20°C
   c) 40°C
   d) None of these

40. A Parachutist of weight W strikes the ground with his legs fixed and come to rest with an upward acceleration of magnitude 3g. Force exerted on him by the ground during landing is –
   a) W
   b) 2 W
   c) 4 W
   d) 3 W

41. Which of the following soundwave shape has least pitch and is softest :
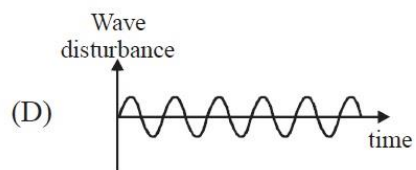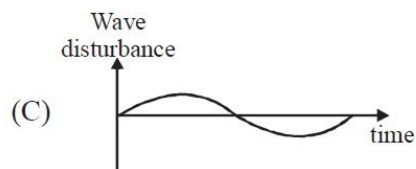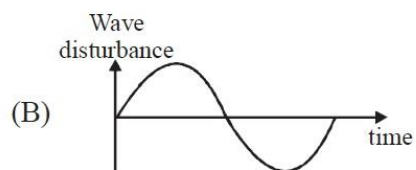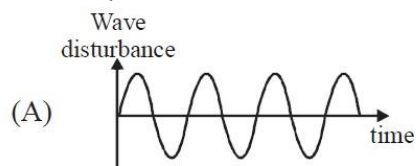
42. An object 4 cm in size is placed at 25 cm in front of a concave mirror of focal length 15 cm. The nature of image is –
    a) virtual, magnified and erect
    b) real, magnified and erect
    c) **real, magnified and inverted**
    d) real, diminished and inverted

43. The strength of magnetic field inside a long current-carrying straight solenoid is –
    a) More at the ends than at the centre
    b) Minimum at the middle
    c) Found to increase from one end to another
    d) **Same at all the points**

44. A ball having a certain mass is moving with a velocity v_0 on a horizontal surface. The ball collides with a stationary ball having four times its mass. The first ball immediately comes to rest after collision, then with what velocity will the second ball move? (Assume frictionless surfaces)
    a) $0.5 V_0$
    b) V_0
    c) **$0.25 V_0$**
    d) $4 V_0$

45. If AB = BC in the below ray diagram following assertions are made :

    [1] B is the focus of the mirror
    [2] A is the centre of the curvature
    [3] C is the pole of the mirror
    Then which of the assertions are correct –
    a) [1] & [2] only
    b) [2] & [3] only
    c) Only [1] is correct
    d) **[1], [2] & [3] are correct**

46. A person clapped his hands near a cliff and heard the echo after 5 s. What is the distance of the cliff from the person if the speed of the sound, **v** is taken as 346 m/s?
    a) **865 m**
    b) 1730 m
    c) 3460 m
    d) 6920 m

47. Acid rain happens because –
    a) Sun leads to heating of upper layer of atmosphere
    b) **Burning of fossil fuels releases oxides of carbon, nitrogen and sulphur in the atmosphere**
    c) Electrical charges are produced due to friction amongst clouds
    d) Earth's atmosphere contains acid

48. A boy of mass 50 kg runs up a staircase of 45 steps in 9 sec. If the height of each step is 15 cm, find power. Take g = 10 m/s^2.
    a) **375 W**
    b) 225 W
    c) 425 W
    d) 525 W

49. Eight identical spherical mercury drops charged to a potential of 20 v each are coalesced into a single spherical drop –
    a) The internal Energy of the system remains the same
    b) **The new potential of the drop is 80 v**
    c) Internal Energy of the system decreases
    d) The potential remains the same i.e. 20 v

50. When light passes through a prism, the colour which deviates the most is –
    a) Red
    b) Blue
    c) Green
    d) **Violet**

51. Superconductors are materials that appear to exhibit no resistance. Therefore, electrons passing through a superconductor will –
   a) generate no current
    b) **generate no heat**

c) increase the current's power

d) decrease the electrons' charge

52. The table below gives data for wires of different materials (the diameters and lengths of all the wires are the same). Which material out of these is the poorest electrical conductor?

Substance	Voltage applied	Current flow
aluminum wire	63 units	35 units
copper wire	27 units	25 units
silver wire	57 units	57 units
gold wire	42 units	30 units

a) Copper

b) Silver

c) Aluminium

d) Gold

53. An astronomical telescope typically has two convex lenses, while a terrestrial telescope has three. The extra lens in a terrestrial telescope_____

a) helps us to see a straight image instead of an inverted one

b) filters out blue which is the predominant colour on earth

c) allows us to use a terrestrial telescope in the daytime also

d) makes it possible for us to see objects that are not too far away

54. The speed of a wave in a certain medium is 960 m/s. If 3600 waves pass over certain point of the medium in 1 minute then the wavelength of wave is –

a) 16 m

b) 8 m

c) 2 m

d) 4 m

55. If mass of the earth and its radius is decreased by 50%, then the acceleration due to gravity would :

a) Remain the same

b) Increase by 100%

c) Decrease by 100%

d) Increase by 50%

56. The diagram below shows the arrangement of three charged hollow metal spheres, A, B, and C. The arrows indicate the direction of the electric forces acting between the spheres. At least two of the spheres are positively charged. Which sphere, if any, could be negatively charged?
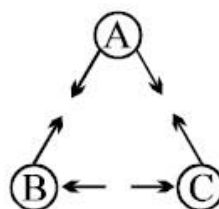
a) Sphere A

b) Sphere B

c) Sphere C

d) None of the above

57. A real, inverted and reduced image of a real object placed a distance *d* in front of a concave spherical mirror with radius of curvature *R* will be formed by the process of reflection –

a) For all values of *d*

b) Only if *d* < *R/2*

c) Only if *d* > *R*

d) Only if *R* > *d* > *R/2*

58. The diagram below shows the position of a long straight wire perpendicular to the page and a set of directions labelled A trough H.

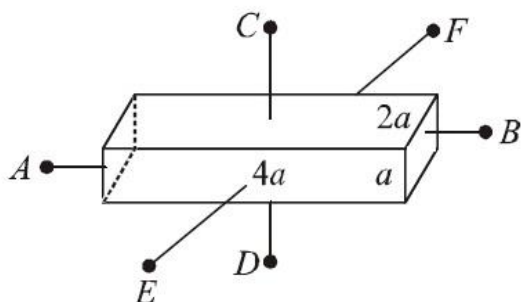When the current in the wire is directed up out of the page, the direction of the magnetic field at point P is –

a) A

b) D

c) B
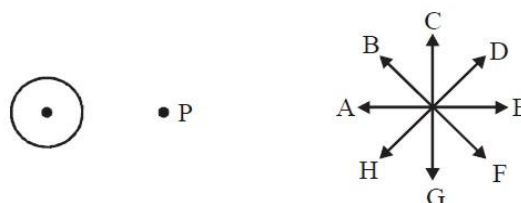
d) C

59. A conductor with rectangular cross-section has dimensions (a × 2a × 4a) as shown in figure. Resistance across AB is x, across CD is y and across EF is z. Then –


a) x > z > y
b) x = z = y
c) x > y > z
d) y > z > x

60. A hammer of mass 500 g moving at 50 m/s, strikes a nail. The nail stops the hammer in a very short time of 0.01 s. The force of the nail on the hammer is :
a) 24 N
b) 25 N
c) 1500 N
d) 2500 N

61. A body undergoes a displacement of 8 m when a force of 6N is applied. The direction of force makes an angle of 60° with displacement. The work done by the force on the body is –
a) $24\sqrt{3}$ J
b) $48\sqrt{3}$ J
c) 24 J
d) 48 J

A rotating device is shown in the fig. Observe the figure and answer the questions 62 and 63
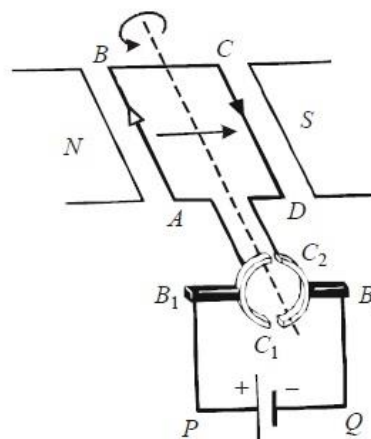

62. The device shown in the figure is –
a) AC motor
b) DC motor
c) AC generator
d) DC generator

63. The direction of force acting on arm AB is
a) Leftwards
b) Outwards (out of the paper)
c) Inwards (into the paper)
d) No force will act on AB

64. What is the current in the battery?
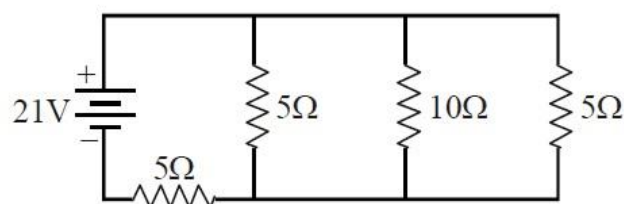
a) 3.0 A
b) 0.60 A
c) 1.2 A
d) 2.4 A

65. The graph below shows the position of a body at different times. The velocity of body is maximum for part
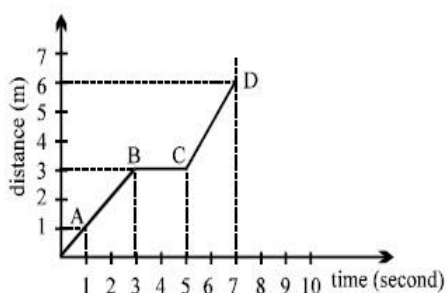
a) CD
b) AB
c) BC
d) AC

66. Barium Chloride on reacting with ammonium sulphate forms barium sulphate and ammonium chloride. Which of the following correctly represents the type of the reaction involved?

[1] Displacement Reaction
[2] Precipitation Reaction
[3] Combination Reaction
[4] Double Displacement Reaction

a) [1] and [2]
b) [2] only
c) [4] only
d) [2] and [4]

67. Which of the following salt does not contain water of crystallisation?

a) Baking Soda
b) Blue Vitriol
c) Washing Soda
d) Gypsum

68. Which one of the following metal does not react with cold as well as hot water?

a) Fe
b) Na
c) Ca
d) Mg

69. A metal from period 4 is added to water and a vigorous reaction takes place with the evolution of a gas. For this you are given four statement:

[1] Oxygen gas is evolved
[2] Hydrogen gas is evolved
[3] The resulting solution is acidic

[4] The resulting solution is alkaline

Select correct option for the above four statement:

a) [1] and [3] only are true
b) [2] and [3] only are true
c) [2] and [4] only are true
d) [1] and [4] only are true

70. An element exists in only two isotopic forms in nature, one having 8 neutrons and other 10. Both of them have eight protons each. If the average atomic weight of the element is 16.2 u then % abundance of isotope with 8 neutrons is

a) 10%
b) 80%
c) 20%
d) 90%

71. How many moles of ferric alum $(NH_4)_2SO_4.Fe_2(SO_4)_3.24H_2O$ can be made from the sample of Fe containing 0.0056 gm of it. (Atomic mass of Fe = 56u)

a) 10^{-4} mol
b) 0.33×10^{-4} mol
c) 2×10^{-4} mol
d) 0.5×10^{-4} mol

72. A sample of a compound consists of C, H and N only. If 24 gm of carbon, 6.022×10^{24} atoms of hydrogen and 2 gm-atom of nitrogen is present in the compound and the vapour density of the compound is 16.5, then its molecular formula will be –

a) $C_2H_{10}N$
b) C_2H_6N
c) CH_3NH_2
d) $CH_3CH_2NH_2$

73. Coal gas is a mixture of –

a) $CH_4 + H_2 + CO_2 + H_2S$
b) $CH_4 + H_2 + CO + H_2S$
c) $CH_4 + H_2 + CO$
d) Ethane, Propane, Butane

74. A colourless and odourless gas P is evolved during thermal decomposition of lead nitrate. P reacts with natural gas to

form compounds Q and R. P, Q and R respectively are –
a) O_2, CO_2 and H_2O
b) N_2O, O_2 and H_2O
c) O_2, CO_2 and H_2
d) CO_2, O_2 and Cl_2

75. Arrange the following elements in the order of their increasing ionisation energies – O, S, Se, Te, Po
a) O, S, Se, Te, Po
b) S, Se, Te, Po
c) Po, Te, S, Se, O
d) Po, Te, Se, S, O

76. A soap molecule has a –
a) Hydrophobic head and a hydrophilic tail
b) Hydrophilic head and a hydrophobic tail
c) Hydrophobic head and a hydrophobic tail
d) Hydrophilic head and a hydrophilic tail

77. The elements A, B, C, D and E have atomic numbers 9, 11, 17, 12 and 13 respectively. Which pair of elements belongs to the same group?
a) A & C
b) A & B
c) B & D
d) D & E

78. Non-metals and metals both react with oxygen to form oxides. What will happen if these oxides are dissolved in water separately?
a) Both the metallic oxides and the non-metallic oxides will form acids.
b) The oxides will get dissolved in water and will not change chemically.
c) The metallic oxides will form bases and non-metallic oxides will form acids.
d) They will react with water to form respective elements and will liberate oxygen gas.

79. The reaction of one mole of bromine with ethyne yields –
a) $BrCH_2 – CH_2Br$
b) $BrCH = CHBr$
c) $Br_2CH – CHBr_2$
d) $CH_3 – CH_2Br$

80. In an attempt to demonstrate electrical conductivity through an electrolyte, the following apparatus was set up.
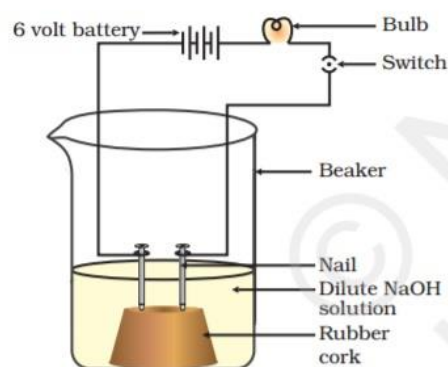
Which statement(s) is (are) correct?
(i) Bulb will not glow because electrolyte is not acidic.
(ii) Bulb will not glow because NaOH is a strong base and furnishes ions for conduction.
(iii) Bulb will not glow because it the circuit is incomplete.
(iv) Bulb will not glow because it depends upon the type of electrolytic solution.

a) (i) and (iii)
b) (ii) and (iv)
c) (ii) only
d) (iv) only

81. Which of the following statements is **INCORRECT**?
a) The conjugate base of $H_2PO_4^-$ is HPO_4^{2+}
b) H_3PO_3 is a tribasic acid
c) The pH of 1 M HCl is 0

d) The concentration of H^+ ions in pure water is 10^{-7} mol L^{-1} at 298 K.

82. 20 cm^3 of a gaseous element X reacts with excess of an element Y to form $40cm^3$ of a gaseous compound of X and Y. All volumes are measured under the same conditions of temperature and pressure. From this it can be deduced that –
    a) The molecule of X contains at least two atoms of X.
    b) Molecule of X cannot have more than two atoms.
    c) <mark>The formula of the gaseous compound formed is XY</mark>.
    d) X is less dense than the product formed.

Read the passage and answer question number 83 and 84

Rutherford's atomic model resembles the planetary motion in solar system. Therefore, Rutherford's model of atom is also called planetary model.

83. When alpha particles are sent through a thin metal foil only one out of ten thousand of them is reversed. This observation led to the conclusion that –
    a) <mark>An extremely small positively charged particles are concentrated at the centre of the atom</mark>
    b) more number of electrons are revolving around the nucleus of the atom
    c) unit positive charge is only present in an atom
    d) a massive sphere with more negative charge and unit positive charge is present at the centre of the atom

84. Which of the following concepts was not considered in Rutherford's atomic model?
    a) the electrical neutrality of atom
    b) <mark>the quantization of energy</mark>

c) electrons revolve around nucleus at very high speeds
d) existence of nuclear forces of attraction on the electrons

85. A tri-positive ion of an atom consists of 7 electrons & 9 neutrons. Its mass number will be –
    a) <mark>19</mark>
    b) 16
    c) 13
    d) 20

86. Based on the table below, what can you say about Co and Ni?

|	Atomic Number	Atomic Mass
Co	27	59
Ni	28	59

a) They have the same number of protons.
b) They have the same number of neutrons.
c) They have the same number of electrons.
d) <mark>None of these is possible.</mark>

87. Which of the following pairs are members of a Homologous series?
    a) CH_3OCH_3 ; $CH_3CH_2–OH$
    b) $CH_3–CHO$; CH_3CHO
    c) CH_3CH_2COOH ; CH_3COOCH_3
    d) <mark>$CH_3–CHO$; CH_3CH_2CHO</mark>

88. $H_2S(g) + Cl_2 (g) \rightarrow 2HCl(g) + S(s)$
    The above reaction may be interpreted as:
    a) <mark>H_2S is getting oxidized and Cl_2 is getting reduced</mark>
    b) H_2S is getting reduced and Cl_2 is getting oxidized
    c) Only H_2S is oxidized
    d) Both H_2S and Cl_2 are reduced

89. $a$$MnO_2 + b$$HCl \rightarrow c$$MnCl_2 + d$$H_2O + e$$Cl_2$
    $p$$C_2H_5OH + q$$O_2 \rightarrow r$$CO_2 + s$$H_2O$
    a, c, q and r in the above chemical equations respectively are –
    a) 2, 4, 2 and 1
    b) 4, 2, 2 and 1
    c) <mark>1, 1, 1 and 3</mark>

d) 2, 1, 4 and 2

90. Reaction between **X** and **Y** forms compound **Z**. **X** loses electron and **Y** gains electron. Which of the following properties is not shown by **Z**?
    a) Has high melting point
    b) Conducts electricity in molten state
    c) Occurs as a solid
    d) Has low melting point

91. 5.85 grams of NaCl was treated with concentrated H_2SO_4 and the gas evolved was passed into a solution of silver nitrate. The white precipitate obtained was filtered, dried and weighed. Assuming complete reaction, how many grams of precipitate was obtained?
    [Atomic mass of Ag = 108 u, Na = 23 u & Cl = 35.5 u]
    a) 10.8 grams
    b) 14.35 grams
    c) 35.5 grams
    d) 3.65 grams

92. The figure shows a simplified diagram of a cell used in chlor-alkali process.
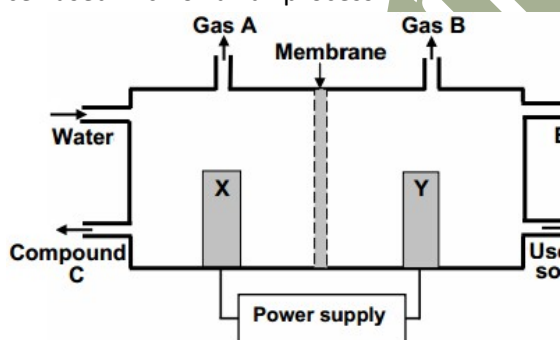
What are the products of chlor-alkali process?
    a) NaCl, Cl_2 and H_2
    b) H_2, Cl_2 and NaOH
    c) Cl_2, Na_2CO_3 and H_2O
    d) NaOH, Cl_2 and HCl

93. Which of the following is **NOT** an addition polymer?
    a) Polyamide
    b) Teflon
    c) Neoprene

d) Polyvinyl Chloride

94. If 0.01 N acid is diluted to 1000 times, then the pH of that acid is –
   a) 2
    b) 10
    c) 3
    d) 5

95. Consider the given table –

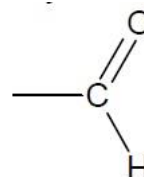| Elements	Number of Protons	Number of Electrons
Carbon	A	8
X	B	7
Y	8	8
Z	C	9

If carbon and element **X** are isobars while **Y** and **Z** are isotopes, then **A, B, X** and **Z** respectively represent –
    a) 6, 7, oxygen and fluorine
    b) 6, 6, nitrogen and fluorine
    c) 6, 7, nitrogen and oxygen
    d) 7, 7, oxygen and nitrogen

96. Which of the following is the functional group for carboxylic acids?
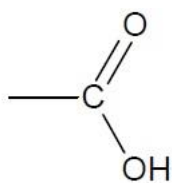   a)

    b)

    c)

    d)
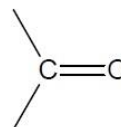
97. The normality of 0.3 M phosphoric acid is-
    a) **0.9**
    b) 0.1
    c) 0.3
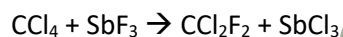   d) 0.6

98. An example of a soap is –
    a) CH_3COONa
    b) **$C_{17}H_{35}COONa$**
    c) CH_3ONa
    d) $C_{17}H_{35}COOC_2H_5$

99. Pentane has a molecular formula C_5H_{12}. It has –
    a) 5 Covalent Bonds
    b) **16 Covalent Bonds**
    c) 12 Covalent Bonds
    d) 17 Covalent Bonds

100. How many grams of SbF_3 are needed to produce a gram of Freon – 12 CCl_2F_2, according to the reaction :
    $CCl_4 + SbF_3 \rightarrow CCl_2F_2 + SbCl_3$

Substance	Molar Mass
SbF_3	179 g mol^{-1}
CCl_2F_2	121 g mol^{-1}

a) **0.667 gm**
b) 0.986 gm
c) 1.50 gm
d) 2.22 gm