Guess Paper (TERM – I) 2021-22
Class X Science (086)
Time: 90 Minutes

General Instructions:
1. The Question Paper contains three sections.
2. Section A has 24 questions. Attempt any 20 questions.
3. Section B has 24 questions. Attempt any 20 questions.
4. Section C has 12 questions. Attempt any 10 questions.
5. All questions carry equal marks.
6. There is no negative marking.

SECTION-A

1. Reema took 5ml of Lead Nitrate solution in a beaker and added approximately 4ml of Potassium Iodide solution to it. What would she observe?   [1]
   A. The solution turned red.
   B. Yellow precipitate was formed.
   C. White precipitate was formed.
   D. The reaction mixture became hot.

2. The respiration process during which glucose undergoes slow combustion by combining with oxygen in the cells of our body to produce energy, is a kind of: [1]
   a. Exothermic process
   b. Endothermic process
   c. Reversible process
   d. Physical process

3. The enzymes contained in pancreatic juices help in the digestion of: [1]
   a) Fats and carbohydrates
   b) Proteins and fats
   c) Proteins and carbohydrates
   d) Proteins, fats and carbohydrates

4. The black coating on silver and the green coating on copper are other examples of   [1]
   a) Oxidation
   b) rancid
   c) corrosion
   d) none of these

5. No matter how far you stand from a mirror, your image appears erect. The mirror is   [1]

likely to be (a) only plane. (b) only concave. (c) only convex. (d) either plane or convex.

6. The xylem in plants are responsible for (a) transport of water. (b) transport of food. (c) transport of amino acids. (d) transport of oxygen. [1]

7. Red colored light is used as a danger signal due to its [1]
   a) Shorter wavelength
   b) Larger wavelength
   c) Short penetrating power
   d) None of these

8. It is necessary to balance a chemical equation in order to satisfy the law of: [1]
   a. Conservation of motion
   b. Conservation of momentum
   c. Conservation of energy
   d. Conservation of mass

9. Movement of the synthesized products from the leaves to the roots and other parts of a plant's body takes place through the phloem. This process is known as: [1]
   a) Translocation
   b) Transpiration
   c) Transportation
   d) Excretion

10. Which of the following lenses would you prefer to use while reading small letters found in a dictionary? [1]
    (a) A convex lens of focal length 50 cm.
    (b) A concave lens of focal length 50 cm.
    (c) A convex lens of focal length 5 cm.
    (d) A concave lens of focal length 5 cm.

11. During the electrolysis of acidulated water, more volume of gas released on [1]
    a) Cathode
    b) Anode
    c) Can't say
    d) None of these

12. The image formed by a concave mirror is observed to be virtual, erect and larger than the object. Where should be the position of the object? [1]
    (a) Between the principal focus and the centre of curvature
    (b) At the centre of curvature
    (c) Beyond the centre of curvature
    (d) Between the pole of the mirror and its principal focus

13. The autotrophic mode of nutrition requires [1]
    (a) carbon dioxide and water.
    (b) chlorophyll.

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(c) sunlight.

(d) all of the above.

14. When ferrous sulphate is heated strongly it undergoes decomposition to form ferric   [1]
oxide as a main product accompanied by a change in colour from:

  a. Blue to green.

  b. Green to blue.

  c. Green to brown.

  d. Green to yellow.

15. The position at which an object be placed in front of a convex lens to get a real image   [1]
of the size of the object is

(a) At the principal focus of the lens

(b) At twice the focal length

(c) At infinity

(d) Between the optical centre of the lens and its principal focus.

16. The excretory unit of the human excretory system is known as: [1]

    a)   Nephridia

    b)   Neuron

    c)   Nephron

    d)   kidneys

17. The R.I of upper layer of air is   [1]

    a) Higher than the lower layer of air

    b) Equal

    c) Lower than the higher layer of air

    d) None of these

18. An object is placed at 100 mm in front of a concave mirror which produces an upright   [1]
image (erect image). The radius of curvature of the mirror is:

(a) Less than 100 mm

(b) Between 100 mm and 200 mm

(c) Exactly 200 mm

(d) More than 200 mm

19. Which of the following gases is used in the storage of fat and oil containing foods for a   [1]
long time?

  a. Carbondioxide gas

  b. Nitrogen gas

  c. Oxygen gas

  d. Neon gas

20. A concave mirror produces a magnification of +4. The object is placed: [1]

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(a) At the focus
(b) Between focus and centre of curvature
(c) Between focus and pole
(d) Beyond the centre of curvature

21.   The breakdown of pyruvate to give carbon dioxide, water and energy takes place in   [1]
(a) cytoplasm.
(b) mitochondria.
(c) chloroplast.
(d) nucleus.

22.   A ray of light passes from a medium X to another medium Y. No refraction of light   [1]
occurs if the ray of light hits the boundary of medium Y at an angle of:
(a) 120°
(b) 90°
(c) 45°
(d) 0°

23.   At the position of minimum deviation of a prism   [1]
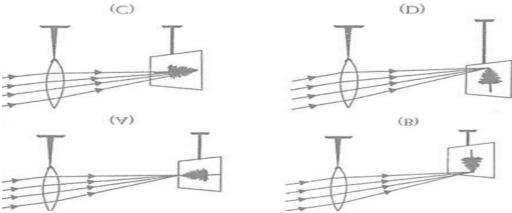a) Angle of incident = angle of reflection
b) Angle of incident = angle of emergent
c) angle of emergent = angle of reflection
d) none of these

24. $MnO_2 + 4HCl \rightarrow MnCl_2 + 2H_2O + Cl_2$ [1]
Identify the substance oxidized in the above equation.
(a) $MnCl_2$
(b) HCl
(c) H_2O
(d) MnO_2

SECTION- B

25.   While performing an experiment on determination of focal length of a convex lens, four   [1]
students obtained the image of the same distant tree on the screen as follows:
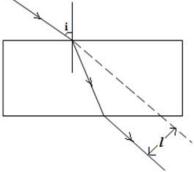
Which diagram shows the formation of image correctly?
(a) A
(b) B
(c) C
(d) D

26. Arteries and veins are connected by a network of extremely narrow tubes called: [1]
    a) Sieve tubes
    b) Capillaries
    c) Vena cava
    d) Valves

27. . A student traces the path of a ray of light passing through a rectangular slab for three [1] different values of angle of incidence (∠i) namely 30°, 45° and 60°. He extends the direction of incident ray by a dotted line and measures the perpendicular distance 'l' between the extended incident ray and the emergent ray.

He will observe that:
(a) 'l' keeps on increasing with increase in angle of incidence
(b) 'l' keeps on decreasing with increase in angle of incidence
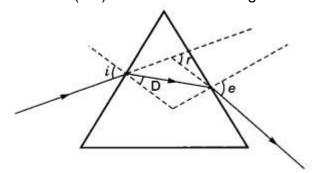(c) 'l' remains the same for all three angles of incidence

(d) 'l' is the maximum for $\angle i = 45^o$ and is less than this value for $\angle i = 30^o$ and $\angle i = 60^o$.

28. The reaction used in black and white photography is   [1]
    (a) combination reaction.
    (b) double displacement reaction.
    (c) decomposition reaction.
    (d) displacement reaction.

29. At noon the sun appears white as   [1]
    (a) light is least scattered.
    (b) all the colours of the white light are scattered away.
    (c) blue colour is scattered the most.
    (d) red colour is scattered the most.

30. $Fe2O3 + 2Al \rightarrow Al2O3 + 2Fe$ The above reaction is an example of a   [1]
    (a) combination reaction.
     (b) double displacement reaction.
    (c) decomposition reaction.
    (d) displacement reaction.

31. The break-down of glucose, a six-carbon molecule, into a three-carbon molecule called   [1]
    pyruvate takes place in
        a) the cytoplasm
        b) the muscles cells
        c) the mitochondria
        d) the yeast cell

32. When Ag is exposed to air it gets a black coating of   [1]
    (a) $AgNO_3$
    (b) Ag_2S
    (c) Ag_2O
    (d) Ag_2CO_3

33. Which of the following statements is correct regarding the propagation of light of   [1]
    different colours of white light in air?
    (a) Red light moves fastest.
    (b) Blue light moves faster than green light.
    (c) All the colours of the white light move with the same speed.
    (d) Yellow light moves with the mean speed as that of the red and the violet light.
34. In which of the following chemical equations, the abbreviations represent the correct   [1]
    states of the reactants and products involved at reaction temperature?

(a) $2H_2$ (l) + O_2 (l) > $2H_2O$(g)
(b) $2H_2$ (g) + O_2 (l) > $2H_2O$ (l)
(c) $2H_2$ (g) + O_2 (g) > $2H_2O$ (l)
(d) $2H_2$ (g) +O_2 (g) > $2H_2O$ (g)

35. What happens when dilute hydrochloric acid is added to iron fillings? [1]
   (a) Hydrogen gas and iron chloride are produced.
    (b) Chlorine gas and iron hydroxide are produced.
    (c) No reaction takes place.
    (d) Iron salt and water are produced.

36. After tracing the path of a ray of light through a glass prism a student marked the angle [1]
   of incidence ($\angle i$), angle of refraction ($\angle r$), angle of emergence ($\angle e$) and the angle of
   deviation ($\angle D$) as shown in the diagram. The correctly marked angles are:

   (a) $\angle i$ and $\angle r$
   (b) $\angle i$ and $\angle e$
   (c) $\angle i$, $\angle e$ and $\angle D$
   (d) $\angle i$, $\angle r$ and $\angle e$

37. The splitting of white light into its component colours is called [1]
   (a) refraction
   (b) reflation
   (c) dispersion
   (d) tyndall effect

38. The separation of the right side and the left side of the heart is useful [1]
            (a) to keep oxygenated and deoxygenated blood from mixing.
            (b) to allows a highly efficient supply of oxygen to the body. T
            (c) useful in animals that have high energy needs to maintain
                their body temperature.
            (d) All of the above

39. The condition produced by aerial oxidation of fats and oils in foods marked by [1]
   unpleasant smell and taste is called:

(a) antioxidation
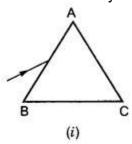(b) reduction
(c) rancidity
(d) corrosion

40. Chemically rust is   [1]
    (a) hydrated ferrous oxide
    (b) only ferric oxide
    (c) hydrated ferric oxide
    (d) none of these

41. The extracellular fluid released from the capillaries is: [1]
    (a) serum
    (b) plasma
    (c) lymph
    (d) mucus

42. The observation(s) helps us to determine whether a chemical reaction has taken place [1]
    or not is/are
    a) change in colour
    b) evolution of a gas
    c) change in temperature
    d) All of these

43. The decomposition reaction is a/an   [1]
    a) endothermic reactions.
    b) Exothermic reaction
    c) Displacement reaction
    d) None of these

44. Which of the following are exothermic processes?   [1]
    (i) Reaction of water with quick lime
    (ii) Dilution of an acid
    (iii) Evaporation of water
    (iv) Sublimation of camphor (crystals)
    (a) (i) and (ii)
    (b) (ii) and (iii)
    (c) (i) and (iv)
    (d) (iii) and (iv)

45. The back flow of blood during the pumping of blood by heart is prevented by: [1]
    (a) Walls of ventncles
    (b) Walls of atrium
    (c) Valves in heart
    (d) Walls between atria and ventricles

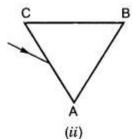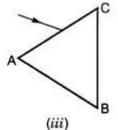
46. A prism ABC (with BC as base) is placed in different orientations. A narrow beam of white light is incident on the prism as shown in the Figures given below. In which of the following cases, after dispersion, the third colour from the top corresponds to the colour of the sky? [1]
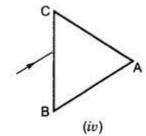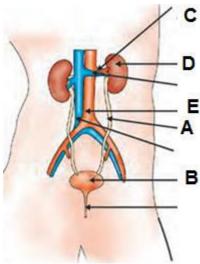

(i)   (ii)   (iii)   (iv)

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

47. Two big mirrors A and B are fitted side by side on a wall. A man is standing at such a distance from the wall that he can see the erect image of his face in both the mirrors. When the man starts walking towards the mirrors, he finds that the size of his face in mirror A goes on increasing but that in mirror B remains the same: [1]
(a) Mirror A is concave and mirror B is convex
(b) Mirror A is plane and mirror B is concave
(c) Mirror A is concave and mirror B is plane
(d) Mirror A is convex and mirror B is concave

48. If an object is placed 21 cm from a converging lens, the image formed is slightly smaller than the object. If the object is placed at a distance of 19 cm from the lens, the image formed is slightly larger than the object. The approximate focal length of the lens is: [1]
(a) 20 cm
(b) 18 cm
(c) 10 cm
(d) 5 cm

SECTION- C

Case-1 [1]

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The excretory system of human beings is shown above, it includes a pair of kidneys, a pair of ureters, a urinary bladder and a urethra. Kidneys are located in the abdomen, one on either side of the
backbone.
Based on the above data answer the following questions:-

49. The function of part B is   [1]
   a) Release the urine
   b) Store the urine
   c) To generate the pressure
   d) None of these
50. Urine is formed in the human being due to removal of
   (a) CO2 from the blood
   (b) nitrogenous waste
   (c) urea or uric acid
   (d) All of above

51. The name of the part represented by alphabet A   [1]
   a) urinary bladder
   b) urethra
   c) ureter
   d) none of these
52. The amount of water re-absorbed depends on how much   [1]
   a) excess water there is in the body
   b) dissolved waste is there
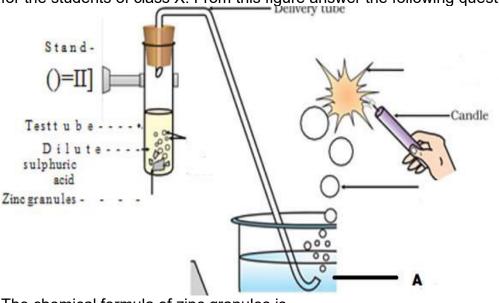   c) both (a) and (b)
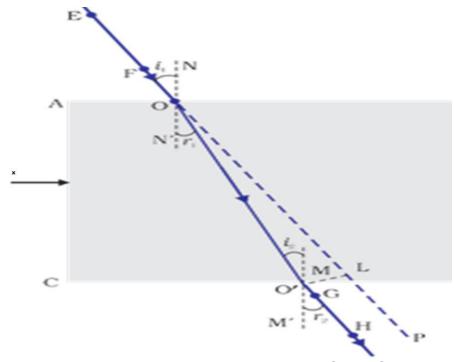   d) urine need to release

Case-2: The above set up of is made to show the formation of a gas in the laboratory [1] for the students of class X. From this figure answer the following questions;-

53. The chemical formula of zinc granules is
   a) ZnO
   b) $ZnCO_3$
   c) $Zn(OH)_2$
   d) $ZnSO_4$

54. The name of the solution A is [1]
   a) Acidulated water
   b) $NaCl$ solution
   c) Soap solution
   d) None of these

55. Consequence when the bubbles come in contact to the burning candle is [1]
   a) Brust with fluttering sound
   b) Brust with a pop sound
   c) Brust with a drum bit sound
   d) None of these

56. The gas produced in this reaction is [1]
   a) Chlorine gas
   b) Oxygen gas
   c) Hydrogen
   d) None of these

Case-3 [1]

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the light ray has changed its direction at points O and O′. Note that both the points O and O′ lie on surfaces separating two transparent media. Draw a perpendicular NN' to AB at O and another perpendicular MM′ to CD at O′. The light ray at point O has entered from a rarer medium to a denser medium, that is, from air to glass. Note that the light ray has bent towards the normal. At O′, the light ray has entered from glass to air, that is, from a denser medium to a rarer medium. The light here has bent away from the normal. Compare the angle of incidence with the angle of refraction at both refracting surfaces AB and CD.

57. The relation between r_1 and $i_{2\ is}$ [1]
    a) r1 > i2
    b) r1 = i2
    c) r1 < i2
    d) none of the above

58. The relation between r_1 and $i_{2\ is}$
    a) r2 > i1
    b) r2 = i1
    c) r2 < i1
    d) none of the above

59. O'L gives the   [1]
    a) Thickness of the glass block
    b) Lateral displacement
    c) Both (a) and (b)

----

   d) None of these

60. $\frac{\sin i_1}{\sin r_1}$ denote the R.I. of   [1]

   a) Air with respect to glass
   b) Glass with respect to air
   c) Can't say
   d) None of these

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