SUMMATIVE ASSESSMENT – II (For 2016-17) {Code: H3QJT61} SCIENCE Class – X SET- 2

1. State the reason why covalent compounds are generally poor conductor of electricity ?

2. Give a way to prevent sexually transmitted diseases

3 .What is the meaning of Chipco Andolan ?

4 .Explain giving reason the type of lens used to correct the defect of vision Hypermetropia.

5 .We should not use polybags as they are non biodegradable and cause pollution. How can we replace them to become environment friendly ?

6 .Draw a sequence of suitable methods of disposal of waste produced at your home to minimize environmental pollution.

7. Complete the following reactions

(i) $CH_3COOH + NaHCO_3$ ---------->

(ii) $C_2H_5OH + CH_3COOH \xrightarrow{H^+}$

(iii) $CH_2=CH_2 + H_2O$ ----->

8 . Explain how covalent bonds are formed. Mention two physical properties of covalent compounds. Draw electron dot structure of CCl_4.

9. (a) Amongst the following elements identify the ones that would form anions –

K, O, Na, F, Ca, Cl, , Mg.

(b) Write the electronic configuration of anions identified above.

10. Li, Be, B, C, N, O, F and Ne are placed in the same period.

(i) What is the criterion for placing elements in the same period ? (ii) Identify the non – metals among them.

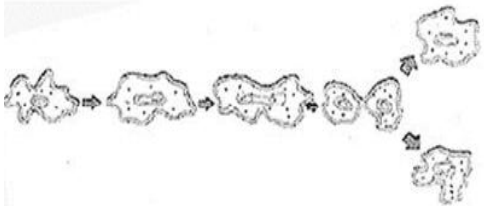
(iii) How does the atomic radius changes as we go from left to right in a period ?

11. Explain with the help of a figure that father is responsible for the sex of a child.

12. In some human families certain characters may skip a generation or two and then reappear. Why does this happen ? Explain with a proper reasoning.

13 .What are sexually transmitted diseases ? Give two examples. Which contraceptive methods should be preferred to avoid them ?

14 .Study the diagram given below : (a) Identify the process.



(b) Which organism uses the above method for reproduction ?

(c) How is the above method different from the process of fragmentation

15 .Define evolution. How are traits inherited ? Why are traits acquired during the lifetime of an individual not passed on to the next generation ?

16.What is meant by angle of a prism ? Mark it on the diagram. With the help of a diagram show refraction of light through a prism and label on it angle of deviation, emergent ray.

17.Draw the ray diagram to show reflected ray a Concave mirror when the incident ray.

(a) Passes through its centre of curvature

(b) Passes through its focus

(c) Is incident on pole of the Concave mirror

18 .Yamuna River passing through 22 km in Delhi was once described as the lifeline of the city, but today it has become one of the most polluted rivers in the country. According to the Central Pollution Control Board (CPCB) the water quality of Yamuna River falls under the category "E" which makes it fit only for recreation and industrial cooling. It is completely unfit for underwater life.

(a) Give two possible causes of water pollution in Yamuna river.

(b) Suggest any one method by which the pollution could be reduced in the Yamuna river.

(c) Mention the values portrayed by you here ?

19 .(a) Name the metals among the first five elements of the Modern Periodic Table.

(b) Write their chemical symbols. (c) Write the formula of their oxides.

20. (a) When a pesticide is sprayed on a population of insects, all insects do not get killed but few of them survive.

Give reason

(b) When is a recessive trait capable of expressing itself ? Write its expression with respect to height of plant (genotype).

21. (a) The two cells formed after DNA copying are similar but not identical. What reason can be associated for this ?

(b) Variation though leads to certain changes in an individual but is useful for the survival of species over time. Justify this statement.

(c) Is the consistency of DNA copying important during reproduction ?

22 (a) What is Tyndall effect ? Explain why is it visible in forests ?

(b) Give reasons for the following with appropriate diagram.

(i) Why does sun appear to rise early than actual sunrise ? (ii) Why planets do not twinkle like stars ?

23. (a) Write the laws of refraction. What is the ratio of the sine of the angle of incidence to the sine of the angle of refraction commonly known as ?

(b) What is meant by statement that refractive index of diamond is 2.42? If the velocity of light in air is 3×10^8 ms−1, find velocity of light in diamond ?

24. (a) Write relation between u, v, f for lens and for mirrors where u, v, f are object distance, image distance and focal length respectively.

(b) The magnification produced by a concave mirror is m = +4. Write the information about the image given by this statement.

(c) Draw a ray diagram for the following and show the formation of the images in case of concave mirror when the object is placed : (i) Between the pole and focus point (ii) at the centre of curvature

SECTION-B

25. While preparing soap in the laboratory, Sonia added “X” to vegetable oil and stirred the mixture. She observed that the test tube became hot, then she added sodium chloride and after sometime “Y” settled at the bottom of test tube.

The substances “X” and “Y” are :

(a) Sodium carbonate and soap (b) Sodium hydroxide and glycerol

(c) Sodium carbonate and soap (d) Sodium hydroxide and soap

26. The correct general equation for saponification reaction is :

(a) Ester of fatty acid+alkali ----------> soap +glycol (b) Ester of fatty acid+alkali ---------->soap +glycerol

(c) Ester of fatty acid+acid ----------> soap + glycerol (d) Ester of fatty acid+acid ----------> soap glycol

27. Temporary hardness in water can be removed by :

(a) Boiling (b) Softening (c) Filtration (d) Loading

28. A student measured the focal length of a concave mirror by focusing a distant object on the screen as 20 cm. It means that the distance between :

a) Object and screen is 40 cm. (b) Mirror and screen is 40 cm.

(c) Mirror and screen is 20 cm. (d) Mirror and object is 20 cm

29. A student wants to find the focal length of a concave mirror given to him. He focuses a distant object with this mirror, to obtain a sharp image the chosen object should not be :

(a) a building (b) a tree (c) a window, (d) the sun.

30. In the experiment on refraction of light through a glass slab done by four students A, B, C and D, the following observations were made :

(A) The emergent ray moves towards the normal after second refraction through glass slab with $< i = < e$

(B) The emergent ray moves away from the normal after second refraction through glass slab with $< i < < e$

(C) For any angle of incidence, always $< i > < e$

(D) The emergent ray moves away from normal after second refraction through glass slab with $< i = < e$

The student who has made the correct observation is :

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

31. A prism is used to :

(a) to deviate a light path by refraction. (b) to deviate a light path by reflection only.

(c) to pass the light undeviated.

(d) to refract, reflect or deviation the light depending on experimental condition.

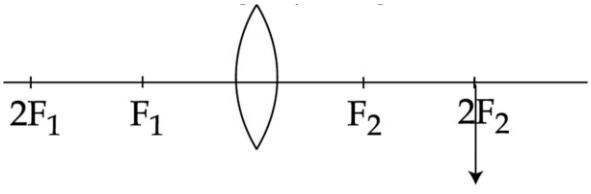
32. Potato is called as a modified stem because it :

(a) stores food. (b) stores water. (c) has nodes and internodes. (d) helps in protection of plant.

33. The region of epicotyls on the embryonic axis will give rise to future : (a) shoot (b) root (c) leaf (d) embryo

34. Write the steps of procedure to study the action of acetic acid on solid sodium hydrogen carbonate in the laboratory along with the testing of gas liberated.

35. A student observed the slide of binary fission of Amoeba under a microscope. What should be the observations reported by him?



36 . In the following ray diagram.

(i) What will be the position of the object ? (ii) Compare the size of image A' B' with the object.

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1. No free electron/No charged particles formed.

2. Mechanical barrier /Oral pills / Surgical methods (any 1)

3. Hug the trees movement

4. Convex lens, because it converges rays and rays which were meeting beyond retina are converged to meet on retina.

5 . Use jute, cloth or paper bags

Reuse polybags and do not burn it as it releases poisonous gases causing air pollution

6 (i) Segregation into biodegradable and non – biodegradable waste,

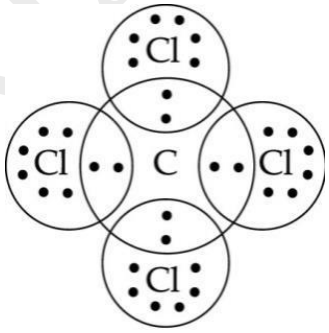
(ii) Newspapers, tin cans, glass bottles to recycle.

(iii) Safe disposal of plastic bags or any other.

7. (i) $CH_3COOH + NaHCO_3$ -----> $CH_3COONa + H_2O + CO_2$

(ii) $C_2H_5OH + CH_3COOH \xrightarrow{H^+} CH3COOC_2H_5 + H_2O$

(iii) $CH_2=CH_2 + H_2O$ -----> C_2H_5OH



8. Covalent bond is formed by mutual sharing of electrons. Poor electrical conductivity low melting point.

9. (a) O, F, Cl

(b) O : 2, 8 ; F : 2, 8 ; Cl : 2, 8, 8

10. (i) No. of shells

(ii) C, N, O, F

(iii) Decreases

12. Certain characters skip a generation as they are recessive. Marked by dominant traits Recessive trait is not lost and reappear in later generations.

13. STD - communicable diseases which are spread through sexual contact with infected person. E.g., AIDS, Warts, syphilis, Gonorrhea (any 2) Barrier method like condoms, diaphragm

14. (a) Binary fission (b) Amoeba (c) Binary fission-organism splits into two equal halves

Fragmentation – breaks into many smaller fragments

15 . Evolution sequence of gradual changes over millions of years resulting in the formation of new species.

Traits are inherited by transfer of DNA from parents to off springs . Acquired traits do not cause any change in DNA

16. The angle between two lateral faces of prism is called the angle of the prism. Figure 11.4 Pg 192 NCERT

17. (a) Fig 10.3 (a) Page 164 (b) Fig 10.4 (a) Page 165 (c) Fig 10.5 (a) Page 165

18. (a) Untreated sewage disposal, untreated industrial effluents (b) Public awareness and the government taking the issue seriously and setting a sewage treatment plant and also ensuring that the industries also install a chemical treatment plant. (c) Concern towards the society, environment friendly.

19. (a) Lithium, Beryllium (b) Li, Be (c) Li_2O, BeO

20. (a) Because with the spray of the same chemicals every time, insects evolve to resistant varieties, by undergoing gradual change in their DNA. (B) In homozygous condition. tt

21. (a) No Bio-chemical reaction is absolutely reliable

Variations occur during the process of DNA copying

(b) Variation in individual – Survival of only the species

Variation in species – Changes used to survive by different individuals of a species

(c) Yes, for maintenance of body design features

22. (a) Tyndall effect – The phenomenon of scattering of light by colloidal particles. It is seen in forest due to scattering of sunlight by water droplets. (b) (i) Delayed sunset – Atmospheric refraction occurs at sunset which causes Apparent shift in the actual position of the sun. Fig 11.10 Page 195 NCERT Textbook Explanation

(ii) Planets behave as collection of several point sized objects. It is near to earth and makes larger angle at eye. So less refraction occurs.

23. Two laws of refraction (statements), Refractive index
That the ratio of velocity of light in vacuum and that in diamond is 2.42.
So, Velocity in diamond $\frac{3\ x\ 10^8 m/s}{2.42} = 1.2\ x\ 10^8 m/s$

24. (b) It means the height of image is 4 times the height of object and image virtual and erect.

25 (d)	26 (b)	27 (a)	28 (c)
29 (a)	30 (d)	31 (d)	32 (c)

33 (a) Shoot

34 Step - (i) put a pinch of $NaHCO_3$ in a clean Test tube
(ii) Pour about 5 ml of dil. acetic acid in the above Test tube.
(iii) Fix a cork with a delivery tube in the mouth of the test tube.
(iv) Keep the other end of delivery tube dipped in lime water placed in another test tube.

35 (i) dividing nucleus (ii) dividing cytoplasm

36. (a) At $2F_1$ (centre of curvature) (b) Equal (both) in size