Summative Assessment II - (2014 - 15)

HOLY MISSION HIGH SCHOOL

[Affiliated to C.B.S.E, Delhi] upto +2 Level
SAMASTIPUR - 848101

Set - B **SCIENCE** **Class – X** Code:- **4FVU1BZ**

Time allowed : 3 hours **Maximum Marks : 90**

SECTION-A

1 Write molecular formula of alcohol which can be derived from butane. 1

2 Give a method used by *Rhizopus* to increase its population. 1

3 Mention the two areas emphasized by watershed management. 1

4 With the help of ray diagrams show the path of reflected ray from a concave mirror when – 2
(a) incident ray is passing through the principal focus of mirror.
(b) incident ray is passing through the centre of curvature of the mirror.

5 **Compare reuse and recycle, methods for conservation of environment.** 2

6 Suggest any two methods that should be adopted to ensure that the local air and local water bodies are not polluted. 2

7. An organic compound 'A' has a molecular formula C_2H_6O. 'A' on addition of oxygen gives compound 'B' which gives effervescence with baking soda. 3
(i) Identify 'A' and 'B'. ethanol
(ii) Write the reaction of B with baking soda.

8 Separate out alkanes, alkenes and alkynes from the following hydrocarbons : 3
CH_4, C_2H_6, C_2H_4, C_3H_6, C_3H_4, C_2H_2

9 The electronic configuration of four elements A, B, C, and D, is given as follows : 3
A - 2, 8
B - 2, 8, 1
C - 2, 8, 2
D - 2, 8, 8
(a) Which of them belong to the same period ? Name the period.
(b) Which of them belong to the same group ? Name the group.
(c) Which amongst them would form
(i) Monovalent cation (ii) Divalent cation

10 Inert gases are placed in a separate group in the Modern Periodic Table. 3
(a) State the group number 18th
(b) How many valence electrons do most of them have ?
(c) Why are they unreactive ?
(d) Name any two inert gases.

11 (a) What are hybrids ?
(b) Give a term for the following :
(i) Externally exhibited trait
(ii) Traits developed by genes

12 An organ like a wing in birds are an advantage to the organism. Did they appear in different stages or were formed due to a single sudden change in them ? 3

13 Explain the process of binary fission by giving two, examples. 3

14 Draw the female reproductive part of a flower and label it. 3

15 (a) "Each organism has its own identity". Explain. 3
(b) What is speciation ?

16 Give the factors on which the colour of scattered white light depends. Give any two examples where we observe scattering of light. 3

17 (a) With the help of ray diagram explain how a thin paper can be burnt with the help of convex lens during sunny day. 3
(b) Why the same paper cannot be burnt with the help of a concave lens ?

18 In a colony, it was decided to remove a green park and construct an air conditioned shopping mall. Children of the colony took out a march against this decision with several placards to make the colony people aware of the importance of green plants. 3
(a) What are the ill effects of air conditioning ?
(b) Design two placards which the children would have carried ?
(c) Is the action taken by the children justified ?
(d) How does the ecosystem get affected when plants are removed ?

19 H, He, Mg and C are some well known elements. 5
(a) Arrange these elements in increasing order of their atomic numbers.
(b) Write the atomic numbers of each.
(c) Write the electronic configuration of each.

20 (a) Why do we say that homozygous plants produce pure progeny ? 5
(b) Define heterozygous.
(c) Explain how the process of speciation takes place.

21 Differentiate between the following : 5
(a) Pollen tube and Style
(b) Fission in *Amoeba* and *Plasmodium*
(c) Fragmentation and Regeneration
(d) Bud of *Hydra* and bud of *Bryophyllum*
(e) Vegetative propagation and Spore formation

22 Draw a ray diagram showing the dispersion through a triangular glass prism when a narrow beam of white light is incident on one of its refracting surfaces. Also indicate the order of the colours of the spectrum obtained. Why does it take place ? 5

23 A student has three concave mirrors A, B, C of focal lengths 20 cm, 15 cm and 10 cm respectively. For each concave mirror he performs the experiment of image formation for three values of object distance of 30 cm, 10 cm and 20 cm. 5
Giving reason answer the following :
(a) For the three object distances identify the mirror which will form an image equal in size to that of object. Find at least one value of object distance.
(b) Out of the three mirror identify the mirror which would be preferred to be used for shaving purpose.
(c) For the mirror B draw ray diagram for image formation for any two given values of object distance.

24 A student has difficulty in reading the black board while sitting in the last row. What could be the defect he is suffering from ? How can it be corrected ? Draw ray diagrams for 5

(a) The defective eye (b) Its correction

SECTION - B

25 The use of alcohol in preparation of soap is : 1

(a) as solvent (b) as oxidising agent
(c) as hydrolysing agent (d) as coolant

26 The completion of saponification reaction is marked when : 1

(a) Red litmus turns blue (b) Red litmus turns colourless
(c) Blue litmus turns red (d) Blue litmus turns colourless

27 Water containing calcium ion is called :

(a) ionic water (b) soft water
(c) hard water (d) heavy water

28 A student was given the following "suggestions" for finding the focal length of a convex lens : 1

(A) Select an object very far away from the window of laboratory
(B) Select a well illuminated object far but not very far from the window of laboratory
(C) Keep all lights of the laboratory on
(D) Place the lens between the object and the screen
(E) Place the screen between the object and the lens
(F) Obtain the sharpest image of the object on the screen .

For getting better results he should follow the suggestions marked :

(a) B, C, E (b) A, D, F
(c) B, C, F (d) B, D, F

29 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. (c) Mirror and screen is 20 cm.
(b) Mirror and screen is 40 cm. (d) Mirror and object is 20 cm.

30 Two students A and B are performing glass slab experiment. Student A uses a glass slab of thickness 5 cm and student B uses a glass slab of thickness 3 cm. Both take $\angle i = 30°$. Which of the following results is **incorrect** for their experiment ?

(a) Both will get same $\angle r$
(b) Both will get emergent ray parallel to incident ray
(c) Both will get $\angle i = \angle e$
(d) Both will get same lateral displacement

31 While doing the experiment of tracing the path of ray of light through a triangular glass prism a student takes precautions : 1

(A) position of prism should be fixed while doing experiment.
(B) angle of incidence should not be less than 30°.
(C) two pins taken as object should be placed on incident ray at proper distance from each other.
(D) locate the position of image keeping both eyes open.

One of the precautions is not appropriate. It is :

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

32 The organs are said to be homologous if they have similar :

(a) Structure and dissimilar function
(b) function and dissimilar structure
(c) mechanical strength
(d) DNA content

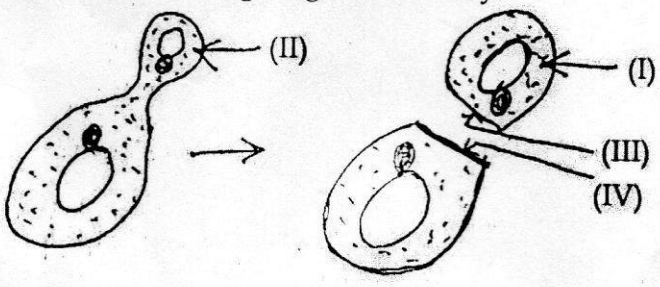
33 The embryonic leaf is represented by : 1

(a) Plumule (b) Embryo
(c) Cotyledon (d) Radicle

34 A Teacher asked a student to study the properties of Acetic acid in the laboratory. The student wrote her two observations as follows : 2

(a) Blue litmus paper turned red.
(b) No two layers were formed in the ~~test~~ tube when acetic acid was added. to water. On the basis of her observations infer the results about the properties of acetic acid.

35 Label the following diagram correctly. 2



36 When an object is placed at F_1 of a convex lens complete the ray diagram after refractions. 2