

# CBSE Class 10 Science Sample Paper Solution SA 2 Set 2

## ANSWER KEY CLASS X SUMMATIVE ASSESSMENT II SCIENCE

1. Bio magnification- concentration of harmful chemicals will be maximum at fourth trophic level- bird. 1
2. The screen has to be moved away from the mirror. 1
3.  $\text{Al}_2(\text{SO}_4)_3$  1
4. Seminal vesicles are a pair of thin walled muscular sac which secretes fluid for nourishment of  
Sperms. Prostate glands-nourishment and transportation of sperm. 1+1
5. Sustainable management of natural resources is necessary so that it lasts for a longer period and future generations can benefit from it.  
Any example for alternative sources of energy. 1+1
6. Those compounds which have same molecular formula but different structural formulae are called Isomers.  
Catenation, tetravalency. 1 + 1
7. Reduce, recycle, reuse. Explain giving examples. 2
- 8.a) (i)Increasing order atomic mass as physical properties and similarities in chemical properties of Elements.  
(ii)The formulae and nature of hydrides and oxides formed by elements was treated as basic chemical properties for its classification.
- b. Periodic law.
- c. It is because it resembles both with alkali metals as well as halogens. 1+1+1
9. A. Saturated hydrocarbons- single bond- general formula  $\text{C}_n\text{H}_{2n+2}$ , Alkane  
Unsaturated hydrocarbons- double or triple bond- Alkene- $\text{C}_n\text{H}_{2n}$ , Alkyne- $\text{C}_n\text{H}_{2n-2}$   $\frac{1}{2}+\frac{1}{2}$
- B. Hexanal 1
- C.  $\text{CH}_3 - \text{CH}_2\text{OH} \xrightarrow[\text{H}_2\text{SO}_4]{\text{Hot conc}} \text{CH}_2 = \text{CH}_2 + \text{H}_2\text{O}$  1
10. A. (a) Sodium or potassium. (b) Phosphorus (c) Carbon (d) helium 1
- B. (i) Atomic size decreases from left to right because one proton and one electron is being added therefore force of attraction between valence electron and nucleus increases. 1
- (ii) Number of shells keep on increasing therefore distance between nucleus and valence electron increases, hence atomic size increases down the group. 1
11. DNA- deoxy riboneuclic acid  $\frac{1}{2}$

DNA copying is called DNA replication. In this process one copy each of replicated DNA will be passed to daughter cells.

1

Variations may be introduced during DNA copying. This inbuilt tendency for variation during reproduction form the basis of evolution.

1 1/2

12. Bacteria and fungi break down the dead and waste products of organisms. They breakdown the complex organic substances into simple inorganic substances that go into the soil and used by the plants.

Any two advantages

2

13. Diagram

1 1/2

A. Fallopian tube or oviduct B. Uterus C. ovary

1/2 + 1/2 + 1/2

14. Definition

1/2 + 1/2 + 1/2

Example for each

1/2 + 1/2 + 1/2

15 . a) Snell's law and other law-

2

b)( i) bending is more in A – refracted ray bends towards normal when it moves from rarer to denser medium  
1/2

(ii) Speed of light is more in rarer medium, that is in A

1/2

16. it is the ratio of height of image to height of object

1

$$1/v - 1/u = 1/f$$

1/2

$$m = 3, \quad v/u = 3, \quad v = 3u$$

1/2

$$\text{ie } 1/3u - 1/u = 1/20$$

1/2

$$u = 13.33 \text{ cm}$$

1/2

17a) image can be obtained on a screen –real

1/2

image can not be obtained on a screen –virtual

1/2

Image is of the same size as the object -real

1/2

Image is not of the same size as the object –virtual

1/2

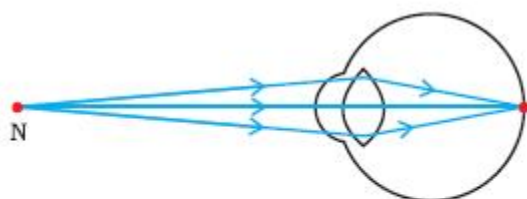
b) They have a wider view as they are curved upwards hence it has got larger area –

1

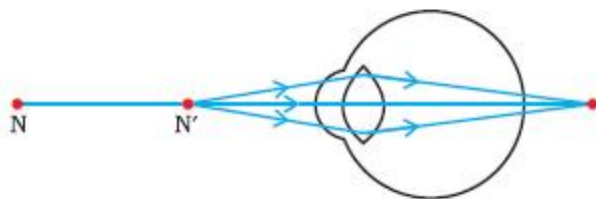
18. a) hypermetropia or far sightedness

1/2

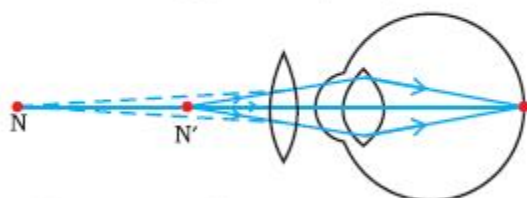
b) This defect arises because – i) focal length of the eye lens is long & ii) The eye ball has become too small –



(a) Near point of a Hypermetropic eye



(b) Hypermetropic eye



(c) Correction for Hypermetropic eye

1

1 marks ( only 2<sup>nd</sup> diagram is required)

Corrected by using a convex lens of appropriate power

½

19. 1. It brings in the resistivity wherever required (survival)

2. It is responsible for acclimatization in varied environmental conditions (adjustment)

3. It also makes on species different from the other (diversity)

1+1+1

20. Diagram

2

Labeling

1

Process of fertilization (Page 135 NCERT Text book)

2

OR

Explanation and examples- Methods of asexual mode of reproduction(Page No.131 &132 NCERT book.)

3

Fragmentation ,regeneration – explanation with proper diagram

1+1

21. A.Mendel took pea plants with two different characteristics such as a tall plant with round seeds and short plant with wrinkled seeds

F<sub>1</sub> progeny are all tall with round seeds. Thus tallness and round seeds are dominant traits.

F<sub>2</sub> Progeny are tall plants with round seeds and some short plants with wrinkled seeds.

But some F<sub>2</sub>progeny showed new mixtures like tall having wrinkled seeds and short having round seeds

Therefore tall and short trait and round and wrinkled seed trait are independently inherited.

3

B. Definition

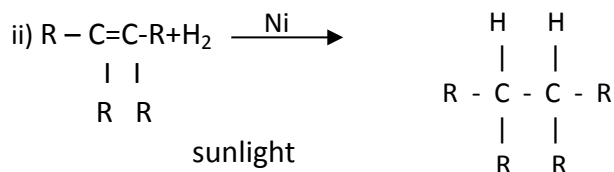
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Evolution can not be equated to progress from lower forms to higher form. It seems to have given rise to more complex body designs even while the simpler body designs continue to flourish. Eg. human beings have not evolved from chimpanzees but both have common ancestor

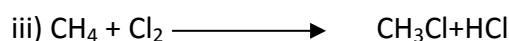
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1



1



1

B) Structure of ethanoic acid and butanone

$\frac{1}{2} + \frac{1}{2}$

C) Esters are pleasant fruit-smelling compounds. They are formed by the reaction of carboxylic acids and alcohols. They are used in making perfumes. (any other use)

$\frac{1}{2} + \frac{1}{2}$

OR

A) Soap is a sodium or potassium salt of fatty acid. It does not give lather in hard water because hard water contains  $\text{Ca}^{2+}$  and  $\text{Mg}^{2+}$  ions react with soap to form calcium and magnesium salts of fatty acids which are insoluble in water.

1+1

B) Cleansing action of soap- page 75 NCERT text book

2

C) A soap micelle is not formed in other solvents like ethanol. It is because soap molecule will not ionize in ethanol and no micelle formation can take place.

1

23..A

4

Sl No.	Device	Position of Object	Position of Image	Nature of Image
1	Concave mirror	Beyond C	Between F & C (1/2)	Real and inverted (1/2)
2	Convex mirror	At infinity (1/2)	Behind the mirror	Virtual and erect (1/2)
3	Concave lens	For any position	Between focus and optical centre (1/2)	Virtual and erect (1/2)
4	Convex lens	Between f and 2f (1/2)	Away from 2f	Real & inverted (1/2)

B. Any ray diagram

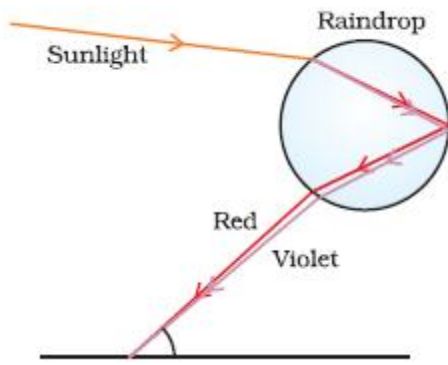
1

24. A. rainbow

$\frac{1}{2}$

B. prism

$\frac{1}{2}$



2

C. rainbow is always forming opposite to sun -

1

D. any one moral value -

1

### MCQ

25. (C)

26. (B)

27. (A)

28. (B)

29. (D)

30. (C)

31. (D)

32. (C)

33. (D)

34. (B)

35. (A)

36. (C)

37. (A)

38. (C)

39. (D)

40. (B)

41. (C)

42. (B)