

SAMPLE PAPR / MODEL TEST PAPER
SUBJECT – SCIENCE 10TH CBSE SA 2 2011

Section – A

- 1. Explain the mechanism of sex determination in the zygote.**
- 2. The atomic number of an element is 17.**
 - (a) Whether it is a metal or non – metal?**
 - (b) Whether it is bigger or smaller in size than an element of atomic number 18?**
 - (c) What is its valency?**
 - (d) How would its oxide behave with litmus solution?**
 - (e) What type of bonds it will form with element of group 18?**
- 3. What is fertilization? Differentiate between external and internal fertilization?**

Name the site of fertilization
- 4. What is accommodation of the eye? Explain how our eyes are able to see both near and distant objects with equal clarity.**
- 5. A 5.0 cm tall object is placed perpendicular to the principal axis of a convex lens of focal length 20 cm. The distance of the object from the lens is 30 cm. By calculation determine (i) the position and (ii) the nature of the image formed.**
- 6. (a) How do chlorofluorocarbons (CFCs) enter the atmosphere and how do they affect humans? Explain.**

(b) Give example of three step food chain of forest.
- 7. (a) State the relation between object distance, image distance and focal length of a spherical mirror.**

(b) A concave mirror of focal length 15 cm forms an image of an object kept at a distance of 10 cm from the mirror. Find the position, nature and size of the image formed by it.

(c) Describe an activity to find the rough focal length of a concave mirror.
- 8. Explain the flow of energy between various components of the environment.**
- 9. How is ethyl alcohol obtained from sweet fruit? Why is air excluded during this process? What happens when ethanol is burnt in air?**
- 10. How do atomic sizes of elements vary in a period? Is there some exception? Explain giving an example.**
- 11. (a) Name the elements of third period which are non – metals.**

(b) Identify the group and period where three isotopes of carbon A, B, C with atomic masses 12, 13 and 14 respectively will be placed in Modern Periodic Table. Justify your answer.
- 12. Two compounds A and B have the molecular formula C₃H₆ and C₃H₈ respectively. Which of these is most highly likely to give an addition reaction? Explain?**

13. With is water harvesting? Mention any two water harvesting structures.
14. Why are stop single on roads in red coloured light?
15. What will be the observed colour of the sky in the absence of the atmosphere? Why?
16. Name the product other than water formed on burning of ethanol in air.
17. In terms of evolution, what is the significance of homology between a human hand and a wing of a bird?
18. Rearrange the following elements in order of the decreasing chemical activity:
- (i) K, Li, Na (ii) Na, Hg, Al
19. What are fossils? What do they tell us about process of evolution?
20. What is scattering of light? What is the cause of blue colour of ocean?
21. Some plants can be grown from a seed as well as vegetative from propagation in such cases.
22. Name the various in which sulphate products which people living near to it it may use:
23. Light enters from air into diamond which has a refractive index of 2.42. Calculate the speed of light in diamond. The speed of light in air is $30 \times 10^8 \text{ ms}^{-1}$.
24. The following table gives the value of refractive indices of a few media:

S.No.	1	2	3	4	5
Medium	Water	Crown glass	Rock salt	Diamond	
Refractive index	1.33	1.52	1.52	1.71	2.42

Use this table to give an example of:

- (i) a medium pair so that light speed up when it goes from one of these media to another.
- (ii) A medium pair so that light slows down when when it goes from one of these media to another.
25. With the help of diagram show the different stages of binary fission in Amoeba.

Section – B

26. A student is to find the focal length of a (i) concave mirror, (ii) concave lens by using a distant object. He will observe that the screen is on the same side as the object:
- (a) in neither of the two cases (b) in both the cases
- (c) in case (i) but not in case (ii) (d) in case (ii) but not in case (i)
27. In Yeast, budding takes place by the following steps:
- (i) Thus, they may form a colony.
- (ii) A bud comes out in any direction from the parent cell.
- (iii) The body bud develops and give rise to another body buds.
- (iv) The bud may become separate from the parent body and develop into a new individual.

The proper sequence of steps is:

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

28. Aluminium sulphate and copper sulphate solutions were taken in two test tubes I and II, respectively. A few pieces of iron fillings were then added to both the solutions. The four students A, B, C and D recorded their observations in the form of a table as given below:

Student	$Al_2(SO_4)_3$ Solution (I)	Copper Sulphate Solution (II)
A	Colourless solutions changes to light green	Blue colour of the solution is retained
B	Colourless of the colourless solution does not change	Blue colour of the solution changes to green
C	Colourless solution changes to light blue	Blue colour of the solution changes to green
D	Colour of the colourless solution remains unchanged	Blue colour of the solution fades away

(a) C (b) A (c) B (d) A The correct sets of observations have been recorded by student.

29. An object moves a distance 'f' between $2f$ and f of a concave mirror. The image would have traveled a distance of:

(a) $2f$ (b) $f/2$ (c) f (d) Infinity

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30. Acetic acid was added to a solid X kept in a test tube. A colourless, odourless gas Y was evolved. The gas was passed through lime water, which turned milky. It was concluded that:

- (a) solid X is sodium bicarbonate and the gas Y is SO_2
- (b) solid X is sodium hydroxide and the gas Y is CO_2
- (c) solid X is sodium bicarbonate and the gas Y is CO_2
- (d) solid X is sodium acetate and the gas Y is CO_2

31. When the stopper of a bottle containing a colourless liquid was removed, the bottle gave out a smell like that of vinegar. The liquid in the bottle could be:

- (a) acetic acid
- (b) sodium hydroxide solution
- (c) hydrochloric acid solution
- (d) saturated sodium bicarbonate solution

32. In the slides showing binary fission in Amoeba and budding in Yeast, the correct observations are:

- (a) The daughter cells of Amoeba and the bud of Yeast are of the same size as their respective parental cells.

(b) The daughter cells of Amoeba and the bud of Yeast are smaller than the parent cell but of yeast is smaller than the parent.

(c) The daughter cells of Amoeba and the bud of Yeast are smaller than their respective parental cells.

(d) The daughter cells of Amoeba are smaller than the parent but bud of Yeast is larger than parent.

33. While doing experiments with candle to find focal length of a concave mirror, the candle is placed between:

(a) At focus

(b) Focus and centre of curvature

(c) Pole and focus

(d) Beyond focus

34. A student added Zinc granules to copper sulphate solution taken in a test tube. Out of the following the correct observation (s) made by the student will be

(i) Zinc granules have no regular shape.

(ii) Zinc granules have silvery grey colour

(III) The colour of zinc granules changed to brownish black.

(a) II only

(b) III only

(c) I, II, and III

(d) I only

35. Dilute acetic acid was added to the four test tubes containing the following chemicals:

(i) NaHCO_3

(b) K_2CO_3

(c) NaCl

(d) KOH

Brisk effervescence was observed in test tubes:

(b) II & III

(b) I & IV

(c) II & III

(d) I & II

36. To find the focal length of a concave mirror, the four students, Ram, Shamim, Kamla and Ruksana obtained the image of the window grill on a wall. They measured the distances as given below between:

Ruksana – window grill and the wall and also between the mirror and the wall

Kamla – mirror and wall only

Ram – window grill and the wall only

Shamim – window grill and the mirror only

Correct focal length will be obtained by the student

(a) Shamim

(b) Kamla

(c) Ruksana

(d) Ram

37. Which of the following set of materials represents the minimum material required for determining the focal length of a convex lens by obtaining the image of a distant object on a screen in your school laboratory?

(i) Set A – A convex lens, a lens holder, a screen with a stand, a measuring scale.

(ii) Set B – A candle, a match box, a convex lens, a lens holder, a screen with stand.

(iii) Set C – A lens holder, a convex lens, a concave lens, a measuring scale.

(iv) Set D – A convex lens, a burning candle, a screen with stand, a lens holder.

(a) Set B

(b) Set C

(c) Set D

(d) Set A

38. On using a candle to find focal length of concave mirror, one should keep:

a : Flame vertically up

b : Candle of longer size

c : Fan off

(A) b only

(b) a only

(c) a and b only

(d) a, b and c

39. Adjustment of the position of the screen ensures proper fixing of the point called as:

(a) $2f$

(b) Focus (f)

(c) Radius of curvature (R)

(d) None of the above

40. To demonstrate absorption of water raisins should be immerse into water:

(a) Partially

(b) Completely

(c) Both of above

(d) None of the above

41. With increase in the thickness glass slab the lateral displacement:

(a) Decreases

(b) Remains same

(c) Increases

(d) May be (a) or (b)

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