

CBSE Sample Paper-02
SUMMATIVE ASSESSMENT -II
SCIENCE (Theory)
Class - X

Time allowed: 3 hours

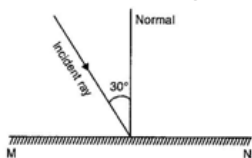
Maximum Marks: 90

General Instructions:

- a) All questions are compulsory.
 - b) The question paper comprises of two sections, A and B. You are to attempt both the sections.
 - c) Questions 1 to 3 in section A are one mark questions. These are to be answered in one word or in one sentence.
 - d) Questions 4 to 6 in section A are two marks questions. These are to be answered in about 30 words each.
 - e) Questions 7 to 18 in section A are three marks questions. These are to be answered in about 50 words each.
 - f) Questions 19 to 24 in section A are five marks questions. These are to be answered in about 70 words each.
 - g) Questions 25 to 27 in section B are 2 marks questions and Questions 28 to 36 are multiple choice questions based on practical skills. Each question of multiple choice questions is a one mark question. You are to select one most appropriate response out of the four provided to you.
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Section A

1. Name any two biodegradable substances.
2. Write the (i) name and (ii) formula of the functional group present in the compound CH_3COOH .
3. Figure below shows an incident ray and normal on a plane mirror MN. Draw the reflected ray and find the angle between the incident ray and reflected ray.



4. Why does it take some time to see objects in dim light when you enter the room from bright sunlight outside?
5. Explain why atomic number is more important than atomic weight in determining chemical properties?
6. Mention any four details that can be inferred about organisms from their fossils.
7. What is accommodation? Explain how does the ciliary muscles do help in accommodation?
8. What is persistence of vision? How do we make a motion picture possible?
9. "Industrialization is one main cause of deterioration of environment". Discuss.
10. Write the cause of depletion of ozone layer in the atmosphere.
11. What are homologous organs? How do they provide evidence in support of evolution?

12. Explain how a new species is generated.
13. Define Mendeleev's Periodic Law. Give two advantages of Mendeleev's Periodic Table.
14. Why was it necessary to change the basis of classification from atomic mass to atomic number.
15. Define the term unisexual and bisexual giving one example of each.
16. Explain double fertilization in plants.
17. Pankaj is a student of class 7. He is very passionate about doing Science experiments. Recently he visited Delhi with his parents to witness Science fair. He purchased different types of lenses, mirror and other articles. One day, during games period, a student of same class fell down and his lips started bleeding.

On observation, it was found by physical education teacher that very fine pieces of glass, difficult to observe, stranded over there. Pankaj immediately rushed to Physical Lab and brought a Lens. The bigger image of stranded glass pieces eased the first aid job.

Read the above passage and answer the following questions:

- (a) Name the lens or mirror brought by Pankaj.
- (b) Draw the ray diagram showing formation of very big image of object by lens. What should be the position of object to get such image?
- (c) What values are shown by Pankaj
18. An object 3 cm high is placed perpendicular to the principal axis of a concave lens of focal length 15 cm. The image is formed at a distance of 10 cm from the lens. Calculate:
 - (a) Distance at which the object is placed.
 - (b) Size and nature of the image formed.
19. Explain: (i) Analogous organs (ii) Natural selection

Or

What are homologous organs? How do they differ from analogous organ? How does the study of comparative anatomy provide evidence in favour of Organic Evolution?

20. (i) Define: (a) Centre of curvature (b) Pole of a concave mirror
- (ii) State the mirror formula and its magnification.
- (iii) Using the same find the distance at which an object to be placed for getting a real, inverted enlarged image at 45 cm using a concave mirror of focal length 20 cm.

Or

- (i) State the basic laws of refraction.
- (ii) Describe about refractive index.
- (iii) Does the incident and emergent ray coincide in a glass slab refraction? Give reason.
21. Explain how the ray of white light is dispersed. Why does this take place? Which colour deviates more and why?

Or

What is long-sightedness? List two causes for development of long-sightedness. Describe with the ray diagram, how this effect may be corrected by using spectacles.

22. (a) Write the name and symbol of alkali metal with the smallest atomic number.
 (b) Which element has atomic number 14? Give its valency.
 (c) Write IUPAC name of the following:
 (i) $\text{CH}_3\text{CH}_2\text{Br}$ (ii) $\text{CH}_3\text{CH}_2 - \text{C} \equiv \text{CH}$
 (d) Give one example each of (i) diprotic acid, (ii) triprotic acid.
 (e) What is meant by catenation? Why does carbon show catenation to maximum extent.

Or

- (a) Write the name and symbol of group 17 elements belonging to second period.
 (b) Write electronic configuration of K (19). To which group of periodic table does it belong?
 (c) What are substitution reactions? Give one example.
 (d) What happens when acetic acid reacts with sodium bicarbonate? Give chemical reaction involved.
 (e) Why does carbon form covalent bond?
23. (a) Name two elements of group 13.
 (b) Name most electro-negative element in periodic table. Write its atomic number.
 (c) Draw electron dot structures of (i) H_2O , (ii) CH_4 , (iii) NH_3 , (iv) BF_3
 (d) Differentiate between ores and minerals.

Or

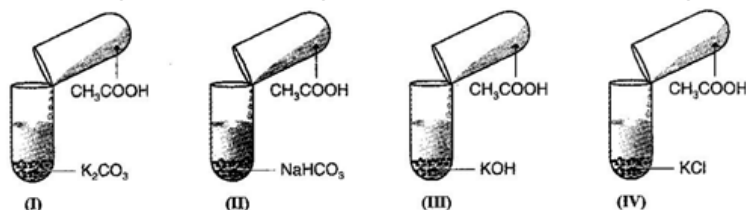
- (a) Name elements of group 2 belonging to 3rd and 4th period.
 (b) Name the element having highest ionization energy in periodic table.
 (c) Give limitation of Dobereiner's law of triads.
 (d) Why do ionic compounds not conduct electricity in solid state?
 (e) Name the chief ore of iron. Give its formula.
24. Name two bacterial diseases which are sexually transmitted. Name their causal organisms, symptoms and preventive measures.

Or

What are the advantages and disadvantages of self and cross pollination? Which of them is better and why?

Section B

25. If burning candle is brought near each of the following test tube:

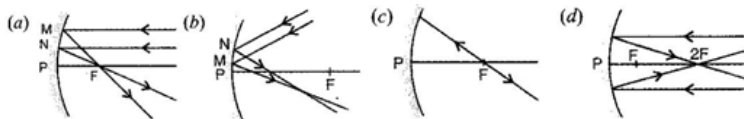


- (a) In which of the following candle will get extinguished?
 (b) Give the reason for your answer.
26. Watch the diagram given below:



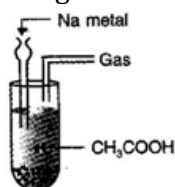
- (a) Which process is being shown here?
 (b) Give reason for your answer.

27. Watch the given diagrams and answer the following questions:



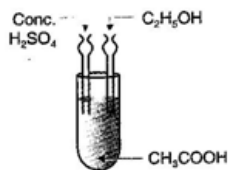
- (i) Which of the following is/are correct?
 (ii) Justify your answer.

28. The gas evolved in the experiment shown here:



- (a) O_2
 (b) H_2
 (c) CO_2
 (d) Cl_2

29. When we put acetic acid in H_2O , the ions formed are



- I. CH_3COO^- II. H_3O^+
 (a) Only I (b) Only II (c) Both I and II (d) Neither I nor II

30. Types of reproduction are:

- (a) Asexual (b) Sexual (c) Cloning (d) All of these

31. Which of the following organisms shows budding:

- (a) Spirogyra (b) Hydra (c) Amoeba (d) Paramecium

32. A male child will be born if:

- (a) father is healthy.
 (b) mother is well fed during pregnancy.
 (c) genetic composition of child has XY set of chromosomes.
 (d) genetic composition of child has XX set of chromosomes.

33. Chromosomes are made up of:

- (a) Proteins (b) DNA
 (c) Both of the above (d) RNA

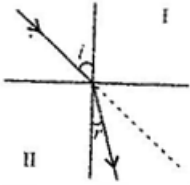
34. While performing the experiment with glass slab, pins should:

- (a) be fixed vertically
- (b) stand in a line
- (c) not be hammered
- (d) All of these

35. As light gets in from air into glass, light will bend:

- (a) towards the normal
- (b) away from the normal
- (c) parallel to incident surface
- (d) retrace its path

36. The II medium shown with refracted ray for the given incident ray is:



- (a) denser
- (b) rarer
- (c) may be denser or rarer
- (d) none of these