MT EDUCARE LTD.

CBSE - X

QUEST - II (Semi Prelim II)
(2017-18)

Roll No. ⬚⬚⬚⬚⬚⬚⬚   **Code No. 32/1**

Series RLH

- Please check that this question paper contains 6 printed pages.
- Code number given on the right hand side of the question paper should be written on the title page of the answer-book by the candidate.
- Please check that this question paper contains 27 questions.
- Please write down the serial number of the question before attempting it.

SCIENCE (Theory)

***Time allowed* :** 3 hours   ***Maximum Marks* :** 80

General Instructions :

i) The question paper comprises of **two Sections A** and **B**. You are to attempt all the sections.

ii) All questions are **compulsory.**

iii) **Internal choice** is given in **Q.No.6, 10, 13, 17, 21** and **Q.No. 26**

iv) **All** questions of **Section - A** and **Section - B** are to be attempted separately.

v) Questions numbers **1** to **2** in **Section - A** are **one mark** questions. These are to be answered in **one word** or in **one sentence**.

vi) Question numbers **3** to **5** in **Section - A** are **two marks** questions. These are to be answered in about **30 words** each.

vii) Question numbers **6** to **15** in **Section - A** are **three marks** questions. These are to be answered in about **50 words** each

viii) Question numbers **16** to **21** in **Section - A** are **five marks** questions. These are to be answered in about **70 words** each

ix) Question numbers **22** to **27** in **Section - B** are are **two marks** questions based on practical skills. These are to be answered in about **30 words** each.

SECTION - A

1. Why is it necessary to conserve forest and wildlife?   **[1]**

2. Write the names of artificial methods of vegetative propagation.   **[1]**

3. What is hydrogenation? What is its industrial application?   **[2]**

4. One half of a convex lens is covered with a black paper. Will this lens produce a complete image of the object? Justify your answer.   **[2]**

5. The near point of a hypermetropic eye is 1.0 m. Find the power of the lens required to correct this defect.
   The least distance of distinct vision for a normal eye is 25 cm.   **[2]**

6. A spherical mirror produces an image of magnification –1 on a screen placed at a distance of 50cm from the mirror.
   (a) Write the type of mirror.
   (b) Find the distance of the image from the object?
   (c) What is the focal length of the mirror?   **[3]**

OR

6. (a) (i) Define power of accommodation of the eye?
       (ii) Why does the power of accommodation decrease with age?

   (b) The fig. shown a ray of white light suffering dispersion. Correct the diagram if you feel it needs correction and redraw it.   **[3]**
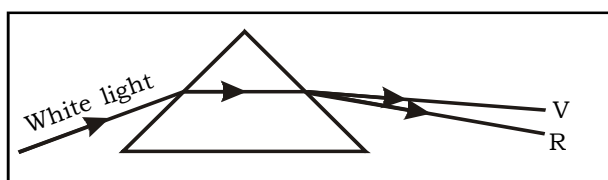
7. (a) List three common refractive defects of vision. Suggest the way of correcting these defects.
   (b) A convex lens of power 4D is placed at a distance of 40 cm from a wall. At what distance from the lens should a candle be placed so that its image is formed on the wall?   **[3]**

8. Draw the structure of the following compounds :   **[3]**
   (i) Methyl propane   (ii) Butanal   (iii) Hexyne

9. An element X has atomic number 9 and element Y has atomic number 17.
    (i) In which period each will be placed ?
    (ii) Which one of them will have larger atomic radius ?
    (iii)Would they be chemically similar ? Support your answer with reason.   **[3]**

10. How does binary fission differ from multiple fission ?   **[3]**

OR

10. Name one sexually transmitted disease each caused due to bacterial infection and viral infection. How can these be prevented ?   **[3]**

11. List the various methods to estimate the age of fossils.   **[3]**

12. (a) An object is placed at a distance of 60cm from a convex mirror the magnification produced is 1/2 Where should the object be placed to get a magnification of 1/3 ?

    (b) A small electric lamp is placed at the focus of a convex lens. State the nature of beam of light produced by the Lens.   **[3]**

13. What are structural isomers? Draw two structural isomers of butane (C_4H_{10}).   **[3]**

OR

13. Compare and contrast the arrangement of elements in Mendeleev's Periodic Table and the Modern Periodic Table.   **[3]**

14. What can you as an individual do to reduce your consumption of the various natural resources?   **[3]**

15. What is monohybrid cross?   **[3]**

16. (a) List the parts of the human eye that control the amount of light entering into it. Explain how they perform this function.
    (b) Write the function of retina in human eye.
    (c) A short sighted person cannot see clearly beyond 2m.Calculate the power of lens required to correct his vision.   **[5]**

17. An organic compound 'A' is widely used as a preservative in pickles and has a molecular formula $C_2H_4O_2$. This compound reacts with ethanol to form a sweet smelling compound 'B'. **[5]**
   (i)   Identify the compound 'A'.
   (ii) Write the chemical equation for its reaction with ethanol to form compound 'B'.
   (iii) How can we get compound 'A' back from 'B' ?
   (iv) Name the process.
   (v)   Which gas is produced when compound 'A' reacts with washing soda? Write the chemical equation.

OR

17. (A) State Modern Periodic Law. What is the Modern Periodic Table called? **[2]**
   (B) Give resons for the following : **[3]**
       (i)   Metals have tendency to form cations.
       (ii) Fluorine atom is smaller than chlorine atom.
       (iii) Non-metals have tendency to gain electrons.

18. Write any five ways in which the locals and tribal are dependent on forests. **[5]**

19. Study the diagram given below carefully and answer the following questions. **[5]**

Mirror A
Fig. A

Mirror B
Fig. B
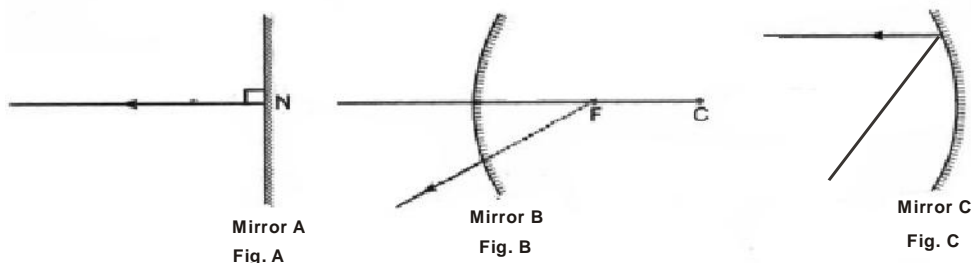
Mirror C
Fig. C

   (i)   Identify mirrors A, B, and C.
   (ii) Identify the mirror which reflects a parallel incident beam of light as(a) parallel beam, (b) a converging beam.
   (iii) Identify the mirror which reflects a parallel beam of light as a diverging beam.
   (iv) Which of these mirrors is used by a dentist to observe cavities in the teeth?

20. From the following given elements :
    Mg, Si, Na, Cl, Ar, P
    (i) Which of these form strongest basic oxide ?
    (ii) Which of these has electron configuration 2, 8, 4 ?
    (iii) Which of these is an alkaline earth metal ?
    (iv) Which of these is an alkali metal ?
    (v) Which of these is most non-metallic ? **[5]**

21. How is the sex of the child determined in human beings? **[5]**

OR

21. Describe the process of fertilisation in a flower with the help of diagram. **[5]**

SECTION - B

22. Differentiate between soap and detergent through any three differences. **[2]**

23. Give reasons for the following : **[2]**
    (i) Why is ethanol mixed with methanol known as denatured alcohol?
    (ii) Why is oxyacetylene flame used for welding purposes ?

24. A very small population of a species faces a greater threat of extinction than a larger population. Provide a suitable genetic explanation. **[2]**

25. Today we encounter the problem of water shortage, although it rains well in rainy season. 'Khushi society' has made a provision of rainwater harvesting.
    (a) Suggest two methods of rain water harvesting.
    (b) What values are seen in the members of society? **[2]**

26. We wish to obtain an erect image of an object using a concave mirror of focal length 15 cm. What should be the range of distance of the object from the mirror? What is the nature of the image ? Is the image larger or smaller than the object? Draw a ray-diagram to show the image formation in this case. **[2]**
OR

26. Study the given diagram and answer the questions that follows it:
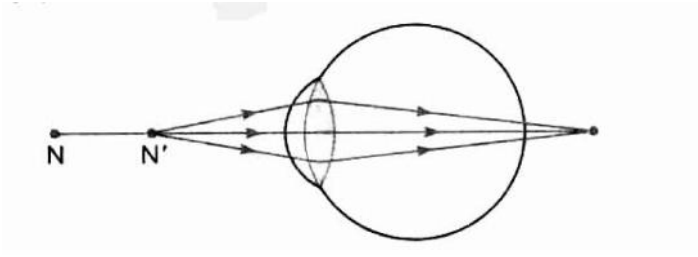
   (i) Which defect of vision is represented in this case? Give reason for your answer.
   (ii) What could be the two causes of this defect?
   (iii) With the help of a diagram show how this defect can be corrected by the use of a suitable lens? **[2]**

27. An old person is unable to see clearly nearby objects as well as distant objects:
   (i) What detect of vision is he suffering from?
   (ii) What kind of lens will be required to see-clearly the nearby as well as distant objects? Give reasons. **[2]**

All the Best 👍