

# Ashwani Gupta



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## Class - X Science (Theory)

**Time: 3hrs**

**MM: 80**

### **General Instructions:**

- i) The question paper comprises of two sections, A and B. You are to attempt both the sections.
- ii) All questions are compulsory.
- iii) There is no over all choice. However, internal choice has been provided in all the three question of five marks category. Only one option in such question in to be attempted.
- iv) All questions of section A and all questions of section B are to be attempted separately.
- v) Question numbers 1 to 4 in section A are one mark questions. There are to be answered in one word or one sentence.
- vi) Question numbers 5 to 13 are two mark questions, to be answered in about 30 words each.
- vii) Question numbers 14 to 22 are three mark questions, to be answered in about 50 words each.
- viii) Question numbers 23 to 25 are five mark questions, to be answered in about 70 words each.
- ix) Question numbers 26 to 41 in section B are multiple choice questions based on practical skills. Each question is a one mark question. You are to select one most appropriate response out of the four provided to you.

### **Section-A**

- Q1. How is rainbow formed?
- Q2. What is the structural formula for ethanol?
- Q3. If all the waste we generate is biodegradable, will this have no impact on the environment?
- Q4. Name the award recently instituted by the government of India in the memory of Amrita Devi Bishnoi.
- Q5. Is the position of a star as seen by us is true position. Justify your answer.
- Q6. A mirror form 2 times real & inverted image when object is placed at a distance of 10cm. at what distance should an object be placed so that image is 3 times virtual & erect?
- Q7. Give reason:
  - (i) Danger signals are made of red colour.
  - (ii) The sky appears to be blue during day time to a person on earth.
- Q8. (a) What do mean by coliform?  
(b) Why there is need to clean aquarium time to time?
- Q9. How does electronegativity of an element vary on moving from:
  - 1) Left to right in a period.
  - 2) Bottom to top in a group.
- Q10. (a) What is isomerism?  
(b) Draw the electron dot structure of CO<sub>2</sub>

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- Q11. What are the problems addressed by the cruiser's about large dams?
- Q12. What is ovulation & when does it take place during the menstrual cycle? Where does fertilization take place?
- Q13. What are sexually transmitted diseases? Name four such diseases. Which one of them damaged the immune?
- Q14. (a) An 8cm tall object is placed perpendicular to the principal axis of a convex lens of focal length 25cm. The distance of the object from the lens is 30cm. Find the position, nature and size of the image formed?
- Q15. Show hypermetropic eye defect with a ray diagram. Which type of lens is suitable to correct this defect? Show with a diagram a corrected vision.
- Q16. (a) Why is the refractive index of a medium always greater than one? Explain briefly.  
(b) The refractive index of a diamond is 2.42. What is the meaning of this statement?
- Q17. What is esterification? What are its uses?
- Q18. Compare & contrast the arrangement of elements in the Mendeleev's Periodic Table & Modern Periodic Law.
- Q19. How did evolution occur by a single ancestral linkage?
- Q20. How have feathers evolved? Explain.
- Q21. What is the contribution of Mendel in genetics?
- Q22. Describe the reproductive system of a human male.
- Q23. When a magnifying glass converges the sun's rays on a sheet of paper, it starts burning. Why?

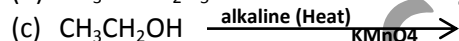
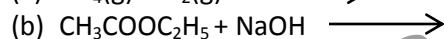
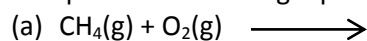
**OR**

An object is placed at a point between infinity & optical centre O in front of a concave lens. Using a ray diagram, explain the image formation. What are the properties of the image?

**OR**

Describe an activity to plot the refraction of a light ray through a parallel glass slab.

Q24. Complete the following equation:



- Q25. (a) How does the embryo get nourishment inside the mother's body?  
(b) What are the functions of testes in human males?  
(c) Why does menstruation occur?

**OR**

- (a) What are the different methods of contraception?  
(b) Where are the vegetative buds present in Bryophyllum?  
(c) Where does the formation of DNA copy occur?



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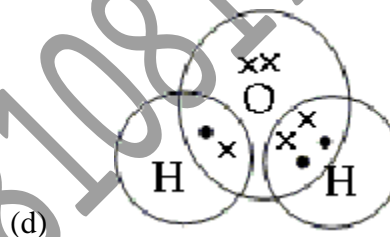
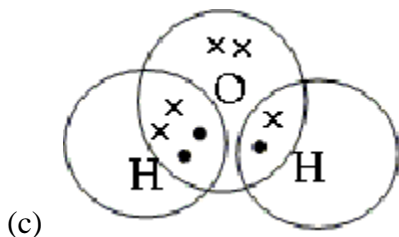
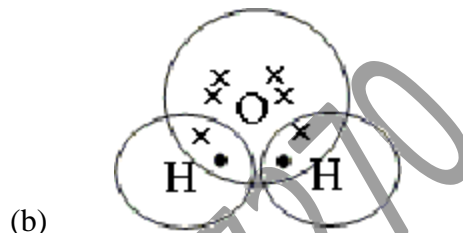
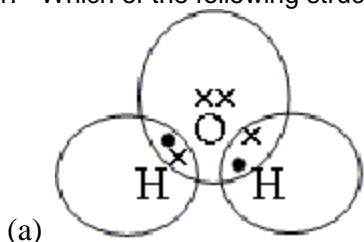
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- Q30. What is the nature and size of the image formed when an object is placed at focus  $F_1$  of a convex lens?
- (a) Virtual and erect, enlarged (b) Real and inverted, diminished  
(c) Virtual and erect, diminished (d) Real and inverted, enlarged

- Q31. Which of the following structures correctly represents the electron dot structure of a water molecule?



- Q32. Which of the following compounds is first in the alkyne series?

(a) Methyne (b) Ethyne  
(c) Propyne (d) Ethylene

- Q33. The element 'Eka-Aluminium' predicted by Mendeleev is \_\_\_\_\_.

(a) boron (b) silicon  
(c) gallium (d) aluminium

- Q34. Which of the following orders of elements is correct in terms of decreasing atomic size?

(a)  $F > Cl > Br$  (b)  $K > Rb > Cs$   
(c)  $B > C > N$  (d)  $S > P > Si$

- Q35. Which of the following carbon compounds has the highest melting point?

(a) Acetic acid (b) Calcium carbonate  
(c) Ethanol (d) Methane

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Q36. In the Following figure:

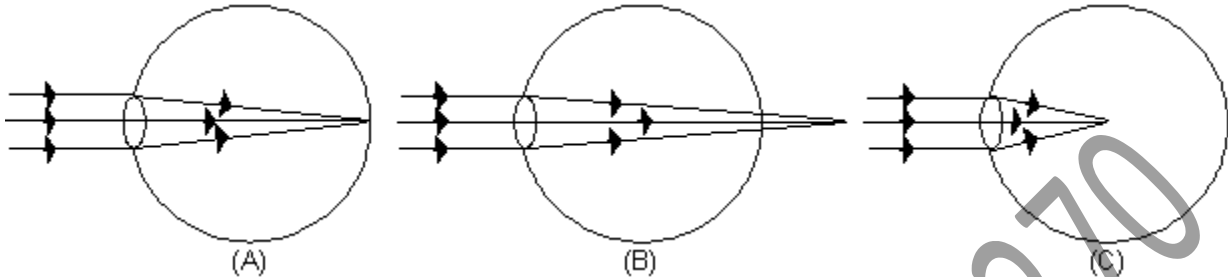


Figure (A), (B) and (C) indicates the point of focus in case of

- (a) the normal eye, the hypermetropic eye and myopic eye
- (b) the hypermetropic eye, the myopic eye and normal eye
- (c) the normal eye, the myopic eye and hypermetropic eye
- (d) the myopic eye, the normal eye and hypermetropic eye

Q37. Which of the following does not have a well-defined nucleus in its cells?

- (a) Tiger
- (b) Rose flower
- (c) Bacteria
- (d) Mushroom

Q38. An organ 'X' in three different species A, B and C has similar structure and becomes more complex on going from  $A \rightarrow B \rightarrow C$ . Then, which of the following statement is true?

- (a) A, B, C have separate evolutionary origins
- (b) A, B, C have common evolutionary origins
- (c) A, B, C are not different but form a single species.
- (d) A is more evolved than C.

Q39. What is the accumulation of non-biodegradable substances at each trophic level referred to as?

- (a) Food web
- (b) Biological magnification
- (c) Decomposition
- (d) Fermentation

Q40. Which part of Bryophyllum plant helps in vegetative propagation?

- (a) Roots
- (b) Leaves
- (c) Stem
- (d) Flowers

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- Q41. A Mendelian experiment consisted of breeding tall pea plants bearing violet flowers with short pea plants bearing white flowers. The progeny all bore violet flowers, but almost half of them were short. This suggests that the genetic make-up of the tall parent can be depicted as
- (a) TTWW (b) TTww  
(c) TtWW (d) TtWw

## Answer Key for MCQ's

- |     |   |     |   |
|-----|---|-----|---|
| 26. | a | 34. | c |
| 27. | c | 35. | a |
| 28. | d | 36. | a |
| 29. | b | 37. | b |
| 30. | d | 38. | b |
| 31. | b | 39. | b |
| 32. | b | 40. | b |
| 33. | c | 41. | c |

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