Summative-II

March **Class-X**

Time allowed: 3 hours **Maximum Marks: 90**

General Instructions:

- The question paper comprises of two sections, A and B. You are to attempt both the sections.
- All questions are compulsory.
- There is no overall choice. However, internal choice has been provided in all the five questions of five marks category. Only one option in such questions is to be attempted.
- All questions of section A and all questions of section B are to be attempted separately.
- Questions 1 to 3 in section A are one mark questions. These are to be answered in one word or in one sentence.
- Questions 4 to 7 in section A are two marks questions. These are to be answered in about 30 words each.
- Questions 8 to 19 in section A are three marks questions. These are to be answered in about 50 words each.
- Questions 20 to 24 in section A are five marks questions. These are to be answered in about 70 words each.
- Questions 25 to 42 in section B are multiple choice questions based on practical skills. You are to select one most appropriate response out of the four provided to you.

Section A

1. Which bonding is mostly shown by methane?
2. Name the triatomic gas which protects ultra violet rays in the ozone layer.
3. Rearrange the following according to their ascending trophic levels in a food chain:
   Hawk, snake, grass, rabbit
4. What happens to light when it passes through a prism?
5. What is the importance of a watershed management system?
6. Why does white light undergo dispersion?
7. a) Which poisonous gas is released by burning of fossil fuels?
   b) Why are coal and petroleum considered to be non- renewable sources of energy?
8. With the help of a ray diagram show that concave lens is a diverging lens? Draw a rays diagram when the objects is place between the pole and focal .
9. Represent using a ray diagram, how the defect of hypermetropia and myopia can be corrected.

10 (a) Why chemical properties of elements in same group are similar?
(b) Is it possible to have an element having atomic number 1.5 placed between hydrogen and helium?
(c) On moving across the period atomic size decreases. Explain. Why?

11 a) Name the male and female gamete.
b) Draw a labeled diagram of female reproductive organ.

12 (a) What is vegetative propagation?
(b) Explain two methods of vegetative propagation.

13 Lithium, sodium and potassium are all elements that react with water to liberate hydrogen gas. Is there any similarity in the atoms of these elements? Explain.

14 (a) Why are testes placed outside the abdominal cavity in scrotum?
(b) What is the aim of the mechanical barrier method of contraception? Give an example of this contraceptive.

15 Dentists use concave mirrors to view the teeth inside the mouth. Why? Represent using a ray diagram. Why not a convex miror?

16 An object 2 cm high is placed at a distance of 16 cm from mirror that produces a real image 3 cm high.
(a) Find the position of the image (b) What is the focal length of the mirror?

17 (a) i) In a cross between a white flowered plant and pink flowered plant, the F_1 generation was found to be pink. On the basis if this information, which are the dominant and the recessive traits?
ii) What is the ratio of the plants in F_2 generation?
(b) Mendel said that the characteristics (traits) of organisms are carried from one generation to the next by internal factors which occur in pairs. What is the modern name for these factors?

18 The far point of a myopic person is double the near point of a normal person. What will be the nature of and power of lens required to correct the defect?

19 (a) Why physical properties and chemical properties of an element are periodic function of their atomic numbers?
(B) How does Modern Periodic Law justifies one position for isotopes?

20. (a) Why in a molecule of nitrogen two atoms are joined by a triple bond?
(b) Give three points to distinguish between saturated and unsaturated hydrocarbons.

OR

(a) State any three characteristics of a homologous series.
(b) What is the valency of carbon? How it satisfies its valency in a molecule of methane?

21 (a) How is image distance, object distance and focal length of a lens are related to each other?
Why focal length of convex lens is considered positive and that of concave

lens is considered negative?
(b) An object is placed at a distance of 20 cm from a convex lens of radius curvature of 20 cm. Find the nature, position and size of the image.

OR

Image of an object formed by convex lens is of same size as object of 8 cm.
(a)What is the position of object and the image in such a case?
(b)Represent using a ray diagram.
(c) Given a series of lens of known focal lengths:
+ 5cm, + 10cm, - 5cm, - 10cm, - 20cm, - 25cm.
(i) Pick any four lens and arrange them in the order of increasing bending power.
(ii) Identify any two lens of same bending power.
(iii) Will convex and a concave lens of same focal length (same numerical value) have similar extent of bending power? What will be the difference in nature of bending in such a case?

22 (a) i) What happens to the thickened uterine lining if no fertilisation occurs?
ii) What is the process called?
iii) What is the duration of this process?
(b) Why does menstruation occur once a month?
(c) The blood of the mother never mixes with that of the foetus yet it nourishes the foetus, how?

Or

(a)
i) Why spore formation is beneficial for fungi?
ii) How multiple fission is advantageous for plasmodium?
iii) What type of division occurs in asexual reproduction?
(b) Diagrammatically explain the process of fertilization taking place in a flowering plant.

23 (a) Why Mendel chose pea plant for his experiments? Mention reasons.
(b) Will experiences of a person during his life time be passed to next generation?

24 (a) Mention the advantages of variations in individuals.
(b) i) A human being has XY pair of sex chromosome. Is it a male or a female?
ii)Give an example where environmental factors play a major role in sex determination.

Section B

25. Acetic acid reacts with zinc in all the test tubes. A pop sound is heard when a burning match stick is brought near the test tubes. Which test tube will produce this pop sound? Raisins selected for the experiment should
a) Have intact stalks
b) Be swollen raisins
c) Be without stalks
d) None of these

26. 5gm of raisins were placed in distilled water for 24 hours. The weight of soaked raisins was found to be 7 gm. The correct percentage of water observed by raisins is
a) 20%
b) 25%
c) 40%
d) 45%

27 On the basis of sequence of reactions given below, identify the most reactive and least reactive element.
$B + AX \rightarrow BX + A$ (1)
$A + CY \rightarrow AY + C$ (2)
a) B, A
b) B, C
c) C, B
d) A, B

28. The correct procedure to show that zinc is more reactive than copper is
a) Prepare copper sulphate solution and dip zinc strip in it.
b) Mix solid zinc sulphate and copper.
c) Heat zinc & copper strips
d) Add dilute nitric acid on both the strips.

29. A student added sodium bicarbonate solution to dilute ethanoic acid. He observed that -
a) A gas evolves
b) A solid settles at the bottom
c) The colour of the mixture becomes blue
d) The colour of the mixture becomes light yellow

30. A student dipped a pH paper in an unknown liquid. Orange colour was obtained. The unknown solution can be -
a) Acetic acid
b) Ethanoic acid

c) Sodium carbonate
d) Both a and b

31 During the budding, division of cell in yeast shows
a) Meiosis cell division
b) Mitosis cell division
c) Both mitosis and meiosis cell division
d) No cell division occurs

32. A student sowed two pieces of potato (A) with eye, (B) without eye In which case plant will grow.
a) A
b) B
c)Both
d) None

33. A hypertonic solution as compared to hypotonic solution will have
a) Less solute concentration.
b) Same solute concentration.
c) More solute concentration
d) Equal solute concentration

34. Which of the following organisms shows budding:
a) Spirogyra
b) Hydra
c) Amoeba
d) Paramecium

35. Radius of curvature of a lens is 40 cm. Object is placed at a distance twice of focal length. Where will the image be formed?
a) At infinity
b) Between f and 2f
c) At f
d) At 2f

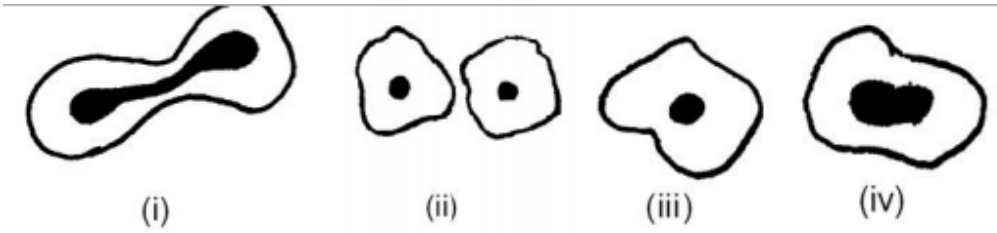
36. Why a highly diminished image of sun is obtained by a convex lens?
a) A real image is formed
b) Object is very far
c) Because it converges parallel beam of light coming from infinity to focus.
(d) None of these

37. All the distances measured in the direction of incident light are
a) Positive
b) Negative
c) Depends upon the position of the object

d) Depends upon the position of the image.

38. A student obtained an erect image of an object placed in front of a concave mirror of focal length 15 cm, the position of object should be.
a) Equal to 15 cm
b) More than 5 cm
c) Less than 15 cm
d) Equal to 30 cm

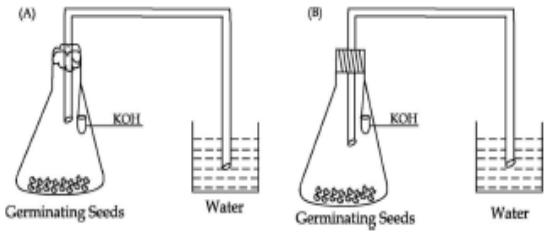
39. The following figure illustrates binary fission in Amoeba in an incorrect sequence.



The correct sequence is
a) i, iii, iv, ii
b) iii, ii, iv, i
c) iv, iii, ii, i
d) iii, iv, ii, i

40. The current flowing through a resistor and the potential difference developed across its end are shown in figures given below. The value of resistance of the resistor is.
(a) 0.5 ohm
(b) 5.0 ohm
(c) 50 ohm
(d) 500 ohm

41. Using the same number of given germinatingseeds, two students A and B set up the experiment separately. Student A used a cotton plug to hold the bent tube to the mouth of the flask. Student B used air tight rubber cork.



Which one of the following is to be observed after a few hours ?
(a) Water level would rise in the bent tube of A.
(b) Water level would rise in the bent tube of B.
(c) The cotton plug would become wet.
(d) The water in the beaker of B would turn milky.

42. The correct set of three precautions for setting up the experiment to demonstrate that CO_2 is evolved during respiration is :
(a) Thread holding KOH test tube, Airtight flask, delivery tube above water surface in the beaker
(b) Flask has just germinated seeds, Airtight set up, delivery tube dip in water in beaker.
(c) Flask has seeds covered with water, Airtight set up, KOH test tube held by a thick wire.
(d) Just germinated seeds under water in the flask, delivery tube above water level, Thread holding KOH test tube.