

**SUMMATIVE ASSESSMENT – II, 2016-17**

**SCIENCE  
Class – X**

**Time Allowed : 3 hours**

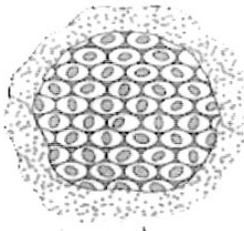
**Maximum Marks : 90**

**General Instructions :**

- The question paper comprises of **two Sections, A and B**. You are to attempt both the sections.
- All** questions are **compulsory**
- All** questions of **Section-A** and **all** questions of **Section-B** are to be attempted separately.
- Question numbers **1 to 3** in **Section-A** are **one mark** questions. These are to be answered in **one word** or in **one sentence**
- Question numbers **4 to 6** in **Sections-A** are **two marks** questions. These are to be answered in about **30 words** each.
- Question numbers **7 to 18** in **Section-A** are **three marks** questions. These are to be answered in about **50 words** each
- Question numbers **19 to 24** in **Section-A** are **five marks** questions. These are to be answered in about **70 words** each.
- Question numbers **25 to 33** 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.
- Question numbers **34 to 36** in **Section-B** are questions based on practical skills. Each question is of two **marks**.

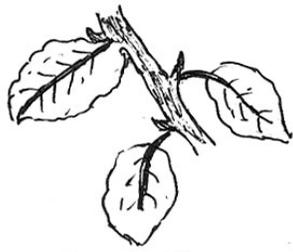
**SECTION-A**

1	Draw the structure of butanone molecule.	1
2	When a round seeded pea plant is crossed with a wrinkled seeded pea plant, what type of plant we get in F <sub>1</sub> generation ?	1
3	In the food chain given below identify the trophic level in which number of organisms available would be minimum. Grass → Grasshopper → Frog → Snake → Peacock	1
4	A person is not able to see distinctly the objects placed beyond 2 m from him. Giving reason identify the defect in his eye. Write the nature of lens used to correct the defect.	2
5	The 3 R's to save the environment, can make a difference. What do these R's refer to ?	2
6	Name the gas present in atmosphere that prevents UV radiations to reach earth. How are UV radiations harmful to living beings ?	2
7	(a) What is meant by the term valency? (b) Explain with reason the variation of valency in a period on going from left to right in the modern periodic table. (c) Explain with reason the variation of valency on going down in a group.	3
8	When we take 1 mL ethanol and 1 mL ethanoic acid along with a few drops of concentrated	3

	<p>sulphuric acid in a test tube a sweet smelling substance is formed. Name the compound and give the balanced chemical equation for the reaction. What do we call the reverse reaction to give back alcohol and carboxylic acid which is used in the preparation of soap ?</p>	
9	<p>Carbon has four electrons in the valence shell. How does it attain stable electronic configuration ? Draw electron dot structure of <math>\text{CO}_2</math> and <math>\text{CH}_4</math> to justify your answer.</p>	3
10	<p>(a) Name the element with atomic number 13.  (b) To which group does it belong?  (c) In which period it is placed?  (d) Write its electronic configuration.</p>	3
11	<p>Why do human females produce only one type of gamete and males produce two types of gametes ?</p>	3
12	<p>Explain three factors which can lead to rise of new species.</p>	3
13	<p>The picture given below depicts the process of asexual reproduction in Plasmodium,</p>  <p>(a) Name the process depicted above and define it.  (b) What is meant by asexual reproduction ?</p>	3
14	<p>Some organisms are created from a single parent while some are created by using the DNA content of both parents.</p> <p>(a) Name the processes of reproduction in the two cases.  (b) Give examples of organisms which use the above methods of reproduction.  (c) Which method out of the above two would be used respectively by Hydra and hens for their reproduction ?</p>	3
15	<p>Define artificial selection with reference to Kohlrabi and Cauliflower.</p>	3
16	<p>State one main function each of iris, pupil, and cornea.</p>	3
17	<p>Define the power of a lens. The power of a lens is +2.0 D.</p> <p>(a) Find the focal length of this lens in metre.  (b) Name the kind of this lens. Explain with the help of figure whether this lens would converge or diverge a beam of light.</p>	3
18	<p>Shikha lives in a remote village, where cooking is done on coal stove or burning wood. She saw her mother coughing. She told her about the ill effects of smoke in a closed room and asked her father to put a window in kitchen.</p> <p>(a) List any two values shown by shikha by her action.  (b) Mention the consequences of burning coal in a closed room ?</p>	3

19	<p>(a) How does the atomic size vary as we move</p> <p>(i) down a group</p> <p>(ii) across a period from left to right</p> <p>Justify the answer with reason.</p> <p>(b) What will be the relative atomic size of the 18<sup>th</sup> group element of a period as compared to other elements of the same period ?</p>	5
20	<p>(a) Give appropriate terms for the following.</p> <p>(i) Trait which expresses itself in next generation.</p> <p>(ii) The trait an organism has due to inheritance.</p> <p>(iii) Origin of new species from existing ones.</p> <p>(b) Genes are the unit of inheritance. Mention any two characteristics of genes.</p>	5
21	<p>(a) Explain what happens if the egg is not fertilized in a female's body. What is the time duration for this process ?</p> <p>(b) Explain the function of fallopian tube and uterus.</p>	5
22	<p>(a) "The refractive index of rock salt is 1.54." What is meant by this statement ?</p> <p>(b) Draw a ray diagram to show that the incident ray of light is parallel to emergent ray when light falls obliquely on a side of a rectangular glass slab.</p> <p>(c) The refractive index of diamond is 2.42 and that of glass is 1.51. How much faster does light travel in glass than in diamond ?</p>	5
23	<p>(a) Draw a diagram to explain how a rainbow is formed. Also state the conditions in which a rainbow is formed.</p> <p>(b) Write the seven colours seen in a rainbow in increasing order of their wavelength.</p>	5
24	<p>(a) Write relation between <math>u</math>, <math>v</math>, <math>f</math> for lenses and for mirrors where <math>u</math>, <math>v</math>, <math>f</math> are object distance, image distance and focal length respectively.</p> <p>(b) The magnification produced by a concave mirror is <math>m = +4</math>. Write the information about the image given by this statement.</p> <p>(c) Draw a ray diagram for the following and show the formation of the images in case of concave mirror when the object is placed :</p> <p>(i) Between the pole and focus point</p> <p>(ii) at the centre of curvature</p>	5
<b>SECTION - B</b>		
25	<p>The common salt helps in separating soap from solution after saponification by :</p> <p>(a) decreasing solubility of soap</p> <p>(b) increasing solubility of soap</p> <p>(c) decreasing density of soap</p>	1



	<p>them. The positions of the three are adjusted to get a sharp image of the candle flame on the screen. If now the candle flame were to be replaced by a distant lamp on a far away electric pole, the student would be able to get a sharp image of this distant lamp on the screen by moving.</p> <p>(a) the screen in the direction of the lens <b>or</b> the lens in The direction of the screen.  (b) the lens away from the screen.  (c) the screen away from the lens.  (d) neither the screen nor the lens.</p>	
30	<p>In the experiment on refraction of light through a glass slab done by four students A, B, C and D, the following observations were made :</p> <p>(A) The emergent ray moves towards the normal after second refraction through glass slab with <math>\angle i = \angle e</math>  (B) The emergent ray moves away from the normal after second refraction through glass slab with <math>\angle i &lt; \angle e</math>  (C) For any angle of incidence, always <math>\angle i &gt; \angle e</math>  (D) The emergent ray moves away from normal after second refraction through glass slab with <math>\angle i = \angle e</math></p> <p>The student who has made the correct observation is :</p> <p>(a) (A) (b) (B)  (c) (C) (d) (D)</p>	1
31	<p>In an experiment to trace the path of a ray of light through a glass prism, the emergent ray obtained :</p> <p>(a) is parallel to the incident ray.  (b) is perpendicular to the incident ray.  (c) bends at an angle to direction of incident ray.  (d) is parallel to the refracted ray.</p>	1
32	<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  <p>Passiflora (I)</p> </div> <div style="text-align: center;">  <p>Pea (II)</p> </div> <div style="text-align: center;">  <p>Bougainvillea (III)</p> </div> </div> <p>Identify the plants which are similar in function but structurally dissimilar :</p> <p>(a) (i), (ii) (b) (ii), (iii)  (c) (i), (iii) (d) (i), (ii), (iii)</p>	1

33 Label the part A in the adjoining diagram, from the following :

1



- (a) Plumule (b) Radical  
(c) Cotyledon (d) Embryo

34 Acetic acid was added to a solid 'x' taken in a test tube. A colourless and odourless gas 'y' was evolved. Identify 'x' and 'y'. How gas 'y' can be tested ?

2

35 Write two precautions while viewing a permanent slide of budding in Yeast cell.

2

36 A student performed an experiment to find the image formation for a convex lens at the different positions. Match the following :

2

Position of object	Position of image
(a) At Infinity	(a) At centre of curvature
(b) Beyond centre of curvature	(b) Beyond centre of curvature
(c) At centre of curvature	(c) Between centre of curvature and focus.
(d) Between centre of curvature and focus	(d) At focus

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