

**PRE BOARD EXAMINATION-I**  
**(Summative assessment – II, 2013)**

**2007**

**SCIENCE**  
**Class – X**  
**30 Jan 2013**

**Time allowed : 3 hours**

**Maximum Marks :90**

**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 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.
- (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. These are to be answered  
in **one word** or in **one sentence**.
- (vi) Question numbers **5 to 13** in **Section-A** are **two marks** questions. These are to be answered  
in about **30 words** each.
- (vii) Question numbers **14 to 22** in **Section-A** are **three marks** questions. These are to be answered in about **50 words** each.
- (viii) Question numbers **23 to 25** in **Section-A** are **five marks** questions. These are 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.
- (x) value based questions 10 Marks

**SECTION-A**

- 1.** Name the gas which is a major component of biogas. Write its chemical formula too
- 2.** A person suffering from an eye-defect uses lenses of power - 1D Name the defect he is suffering from and the nature of lens used.
- 3.** Name the organism(s) belonging to fourth trophic level in the food chain comprising of: Snakes, Insects, Frogs, Plants, Hawks
- 4.** Name the chemical compound which depletes ozone layer.
- 5.** Mention any two trends exhibited by elements when we go from left to right across the period of periodic table.
- 6.** "Elements in Periodic Table show periodicity of properties" List any four such properties.
- 7.** What is meant by DNA copying? Mention its importance in reproduction?
- 8.** Write two advantages of vegetative propagation?
- 9.** What is minimum number of rays required for locating the image formed by a concave mirror for an object? Draw a ray diagram to show the formation of a virtual image by a concave mirror.
- 10.** An old person is unable to see clearly nearby object as well as distant objects
  - (i) What defect 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?

11.What is dispersion of light ?

Name the

- component of white light that deviates the least,
- component of white light that deviates the most, while passing through a glass prism.

12. Why should fossil fuels be used judiciously? Write any two reasons.

13. Name the three 'R' s to save environment. Explain any one with the help of one example. (Write in full form)

14. With the help of a diagram,explain cleansing action of soap.

15. From the part of a periodic table, answer the following questions :

1 Lithium	2	13	14 Carbon	15	16 Oxygen	17 Fluorine
X			P			Q
Y						R
Z						T

- Which is the most reactive metal ? ½
- Name the family of fluorine Q,R,T. ½
- Name one element each of group 2 and 15. ½
- Give the name of the element P placed below Carbon. ½
- Compare X and P with respect to size of atoms. 1

16.Draw the labelled diagram of female reproductive system. Name the organ which provides nutrition to embryo? Where is it located?

17. In human beings, the statistical probability of getting either a male or a female child is 50:50. Give reasons and explain with the help of diagram.

18.Differentiate between homologous and analogous organs. Give one example of each.

19.What are fossils? How is life of a fossil estimated ?

20 (a)Two lenses have power of i) +2 D ii) -4D

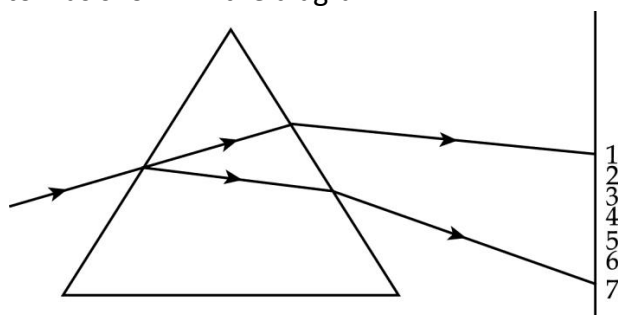
What is the nature and focal length of each lens

(b)An object is kept at a distance of 100cm for lens of power-4D. Calculate image distance.

21 (a)A concave mirror produces three times enlarged image of an object placed at 10cm. in front of it. Calculate the focal length of the mirror.

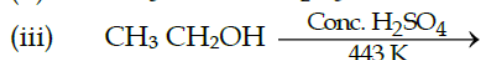
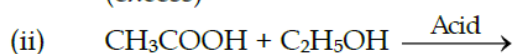
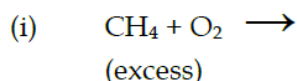
(b) Show the formation of the image with the help of a ray diagram when object is placed 6 cm away from the pole of a convex mirror.

22 A beam of white light falling on a glass prism gets split up into seven colours marked 1 to 7 as shown in the diagram



- The colour at position marked 3 and 5 are similar to the colour of the sky and the colour of gold metal respectively. Is the above statement made by the student correct or incorrect ? Justify.
- Which of the above shown positions corresponds approximately to the colour of
  - a brinjal
  - danger signal
  - Neel which is applied to clothes
  - Orange

23 (a) Complete the following equations :



(b) Write the name of the next homologue of  $\text{CH}_3\text{OH}$  and  $\text{HCOOH}$ .

(c) How does boiling point and melting point of hydrocarbons change with increase in molecular mass ?

**OR**

(a) Define homologous series of organic compounds. Mention any two characteristics of homologous series.

(b) Describe a chemical test to distinguish between ethanol and ethanoic acid.

(c) Identify functional group in Pentanone.

24 (a) Draw a labelled diagram of longitudinal section of flower

(b) Name the male and female reproductive part in a bi-sexual flower. Explain function of each in brief .

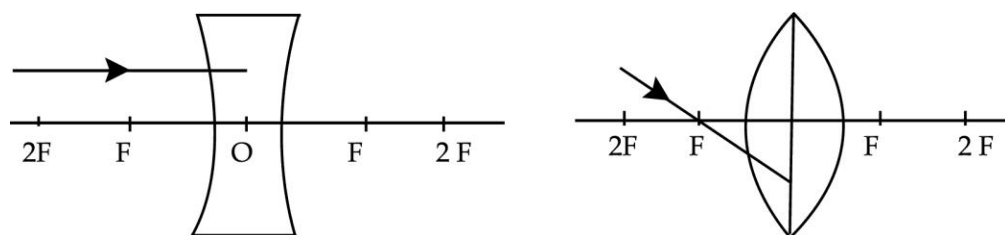
**OR**

(a) Draw a labelled diagram of germination of pollen on stigma

(b) Explain the process of germination.

25 (a) The refractive index of diamond is 2.42. What is the meaning of this statement?

(b) Redraw the diagram given below in your answer book and complete the path of ray.



(c) What is the difference between virtual images produced by concave, plane and convex mirrors ?

(d) What does the negative sign in the value of magnification produced by a mirror indicates about a image ?

**OR**

(a) Write one use of concave mirror as well as convex mirror.

(b) Draw ray diagrams for the following cases when a ray of light

(i) passing through centre of curvature of a concave mirror is incident on it.

(ii) parallel to principal axis is incident on convex mirror

(iii) is incident at the pole of a convex mirror

(iv) passing through focus of a concave mirror incident on it

#### SECTION - B

26 A piece of granulated Zn was dropped into  $\text{CuSO}_4$  solution. After some time, the colour of the solution changed from :

(a) light green to blue

(b) blue to colourless

(c) light green to colourless

(d) light green to light blue

27 Soap solution is

(a) Acidic

(b) Basic

(c). Neutral

(d). Highly Acidic

**28** Acetic acid is ---

- (a) Soluble only in boiling water      (b) Soluble in water at room temperature  
(c) Partially soluble in water      (d) insoluble in water

**29** The odour of acetic acid resembles that of

- (a) rose      (b) burning plastic  
(c) vinegar      (d) kerosene

**30** Soap Solution gives

- (a) Maximum foam with hard water      (b) Minimum foam with hard water  
(c). No foam with hard water      (d). foam with hard water equally as with soft water

**31** While finding out the focal length of a convex lens, Ashok kept it on a stand on the optical bench at 10.5 cm. He adjusted the stand carrying the screen to obtain sharp image of a distant tree on it and finally got it when this stand was at 20.8 cm on the optical bench. The focal length of the lens is

- (a) 10.3 cm      (b) 10.5 cm      (c) 20.8 cm      (d) 5.1 cm

**32** Ritu obtained a distinct image of a distant tree on the screen with the help of a concave mirror. To find focal length of the mirror she shall have to measure distance between-

- (a) mirror and the tree      (b) screen and the tree  
(c) mirror and the screen      (d) mirror and tree as well as between screen and the tree

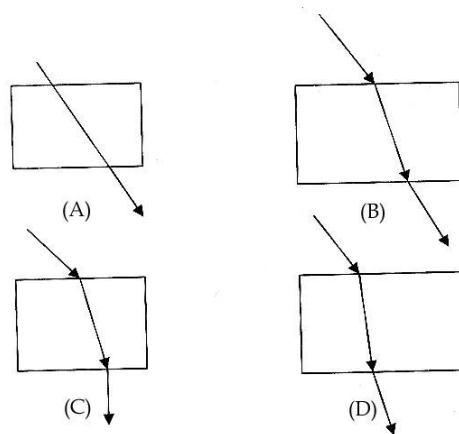
**33** A teacher obtains distinct image of a distant tree on a screen with the help of a convex lens and then asks her four students A,B,C, D to describe nature and size of image. Answers given by them were

- (A) virtual, inverted, smaller than object  
(B) real, inverted, smaller than object  
(C) virtual, erect, same size as that of object  
(D) real, erect, same size as that of object

Correct answer was given by

- (a) A      (b) B      (c) C      (d) D

**34** Four students A, B, C, D traced the path of a ray of light through a glass slab as shown below. Who has traced the path correctly ?



The student who has drawn correct path is.

- (a)(A)      (b)(B)      (c)(C)      (d)(D)

**35** After performing the experiment of tracing path of a ray of light through a glass slab, four students A,B,C, D measured angle of incidence and angle of emergence and worked out the relationship between the two as

- A -  $i = e$       B -  $i < e$       C -  $i > e$       D -  $i = 1/e$

Correct relationship has been obtained by

- (a) A      (b) B      (c) C      (d) D

36 Shape of amoeba is

- (a)Regular
- (b)Everchanging
- (c)Regular as well as everchanging
- (d)Oval

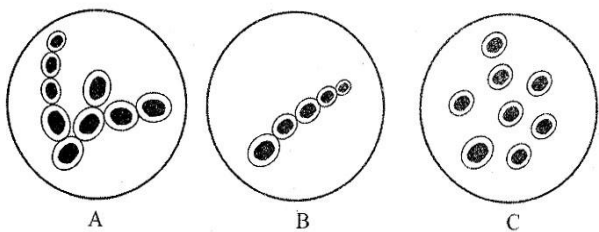
37 In binary fission of Amoeba

- (a) Cytoplasm and nucleus divide at the same time.
- (b) Cytoplasm divides first and followed by division of the nucleus.
- (c) Neither Cytoplasm nor nucleus divide.
- (d) Nucleus divides first followed by division of cytoplasm.

38 A yeast cell in which budding occurs, can have:

- (a) One bud cell
- (b) three bud cells
- (c)Two bud cells
- (d) A chain of bud cells

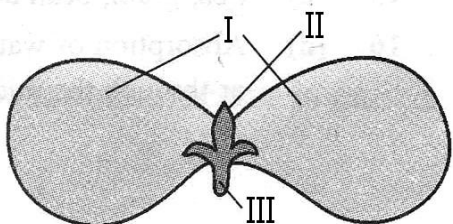
39 Given below are some of the diagrams drawn by students.



Which of the above figure does not show budding

- (a) A
- (b) B
- (c) C
- (d) None of these

40 In the following diagram, the parts I, II, and III were labelled differently by four students. The correct figure is



- a) I – cotyledon      II – plumule      III – radicle
- b) I – cotyledon      III – radicle      III – plumule
- c) I – plumule      II – radicle      III – cotyledon
- d) I –radicle      II – cotyledon      III – plumule

41



The above figure

- a) represents homologous organs
- b) these organs have different function but have common origin
- c) these organs have different origin and different function
- d) represents analogous organs

**VALUE BASED QUESTIONS 10M**

**42.** Ethanol, commonly called as alcohol is an excellent solvent, is used in medicines and is an important chemical compound involved in synthesis of many chemical compounds. However in spite of its benefits to man, its impact on social behaviour has always been questioned. Media has often show abnormal behaviour of people while drunk. It is considered as a curse in the lives of those who are addicted to alcohol – ‘Alcoholic’ people are not only lowering their metabolism and affecting Central Nervous System, they are also a threat to the lives of others. Anger and rude behaviour are some of its ill effects.

- (i) Comment on the statement – ‘Should production of alcohol should be banned’, give three valid reasons to justify. **2M**
- (ii) As a student what initiative would you take in the common concern of ‘Save Life, Do not Drink’. Give two suggestions. **1M**

‘Sania and Shreya’ are best friends and study in grade 4, recently, Sania has been facing difficulty in reading the black-board text from the last desk. Shreya is little uncomfortable and wonders why sania avoids sitting on the last desk. On observation she found that sania often carries junk food in her lunch. Shreya has started sharing her lunch – full of green vegetables and fruits with her. Sania is now better and hasalso started taking a ‘balanced diet’.

- (i) Name the eye defect Sania is suffering from? **1 ½M**
- (ii) What are the two possible deformities related to her eye defect? **2M**
- (iii) What value is shown by Shreya and Sania? **1½ M**

**43.** Which is by-product of saponification process? **1M**

- (a) Glycol                      (b) Glycerol                      (c). Ethanol                      (d). Methanol

**44.** The part of Soap hydro phobic is **1M**

- (a) Hydro carbon                      (b) COONa                      (c). Both                      (d). None of these