

7. SCIENCE
Sample Question Paper
Class-X
2010-2011
Summative Assessment - II
Design of the Question paper

TIME : 3 Hrs

MM : 80

S. No.	Content	Marks Theory	Marks MCQ	Total
1.	Chemical Substances- nature & behaviour	16	5	21
2.	World of living	21	6	27
3.	Natural Phenomenon	21	5	26
4.	Natural Resources	6	-	6
		64	16	80

Weightage to form of questions

S. No.	Form of Question	Marks for each Question	No. of Questions	Total Marks
1.	V S A	1	4	4
2.	SA-I	2	9	18
3.	SA-II	3	9	27
4.	LA	5	3	15
	MCQ	1	16	16
	Total		41	80

Sample Question Paper
SCIENCE
Class-X
Summative Assessment - II
2010-2011
Blue Print

S. No.	Form of Questions	VSA	SA-I	SA-II	LA	MCQ	Total
	UNITS						
1.	Chemical Substances- Nature and behaviour a) Carbon Compounds b) Periodic classification of elements	1(1) –	– 4(2)	3(1) 3(1)	5(1) –	5(5) –	14 7 } 21(11)
2.	World of Living a) Reproduction b) Heridity and evolution	– –	4(2) –	3(1) 9(3)	5(1) –	6(6) –	18 9 } 27(13)
3.	Natural Phenomenon a) Reflection and refraction of light b) Human eye and the colourful world	– 1(1)	2(1) 4(2)	6(2) 3(1)	5(1) –	5(5) –	18 8 } 26(13)
4.	Natural Resources a) Fossil Fuels b) Management of natural resources, The regional environment c) Our environment	– – 2(2)	2(1) 2(1) –	– – –	– – –	– – –	2 2 2 } 6(4)
		4(4)	18(9)	27(9)	15(3)	16(16)	80 (41)

Sample Question Paper
SCIENCE (Theory)
Class-X
Summative Assessment - II
2010-2011

Time : 3 hours

Maximum Marks : 80

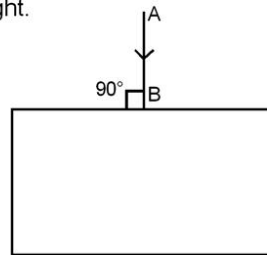
General Instructions:

- 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)

1. List the three phenomenon of light responsible for formation of rainbow in the sky.
2. Draw the electronic dot structure of ethane molecule (C_2H_6).
3. List any two common methods by which solid wastes of urban areas are disposed off.
4. Identify which one of the following would have a hazardous impact if they persist in the environment for a long time:
Newspaper, vegetable peels, pesticides, waste from cattle shed.
5. Why do we see stars twinkling where as, where as planets do not twinkle.
6. An object is placed perpendicular to the principle axis of a convex lens of focal length 10 cm. The distance of the object from the optical centre of the lens is 15 cm. Calculate the position of the image formed. Mention the nature of the image formed.

7. i) What is meant by 'power of accommodation of the eye'?
- ii) How does the focal length of the eye lens change when we shift looking from a distant object to a nearby object?
8. a) Why are coal and petroleum called fossil fuels?
- b) Name the two elements which are present both in CNG and petroleum.
9. (i) What is the position of hydrogen in the modern periodic table?
- (ii) Where are isotopes of the same element having different atomic masses placed in the periodic table?
10. Account for the following:
- (i) Elements in a group of the periodic table have similar chemical properties.
- (ii) Elements of group 18 are called zerovalent.
11. "Construction of dams ensures electricity generation for a large number of villages". State two reasons for opposition to construction of dams in spite of this advantage.
12. a) Which glands contribute fluid to the semen?
- b) State two advantages semen offers to the sperms.
13. List two advantages of vegetative propagation. In which two of the following plants is vegetative propagation practised:
- Banana, Rice, Tomato, Rose
14. i) Define power of a lens and write its S.I. Unit.
- ii) The image of an object formed by a convex lens is of the same size as the object. If the image is formed at a distance of 50cm from the lens, at what distance from the lens is the object placed? Find the focal length and power of the lens used.
15. A person cannot see objects farther than 10 m from the eye clearly. Name the defect of vision he is suffering from. How can it be corrected? Draw ray diagrams for (i) the defective eye, (ii) its correction.
16. i) A ray of light AB is incident on a glass slab, as shown. Mention the values of angle of incidence and angle of refraction for this ray of light.



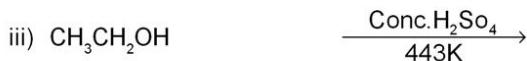
- ii) Light enters from air into a glass plate having refractive index 1.5, Calculate the speed of light in glass. (speed of light in air = 3×10^8 m/s)

17. What is saponification? Explain the cleansing action of soap.
18. How would the following properties of the element vary along the period from left to right in the modern periodic Table. Give reasons.
- Tendency to lose electrons
 - Atomic Size
 - Valency
19. a. What are fossils? 1
 b. List and describe two ways to decide how long ago the organisms were alive. 1
20. "The sex of the new born child depends on its father and not on its mother." Justify the statement and support your answer with a neat illustration.
21. What are acquired traits? "Acquired traits are not capable of directing evolution". Justify this statement by giving atleast two reasons.
22. List and describe any three methods of birth control.
23. Name the type of mirror (s) that should be used to obtain
- a magnified and virtual image 1
 - a diminished and virtual image of an object. 1

Draw labelled ray diagrams to show the formation of the required image in each of the above two cases. Which of these mirrors could also form a magnified and real image of the object? State the position of object for which this could happen.

OR

- (a) Draw a ray diagram in each of the following cases to show the position and nature of the image formed when the object is placed:
- between optical centre and principal focus (F) of a convex lens.
 - between F and 2F of a convex lens.
 - as 2F of a convex lens.
- (b) How will the nature and position of image formed change in case (i) and (ii) in part (a) of this question if the lens is replaced by a concave lens?
24. a) Complete the following equations:
- $\text{CH}_4 + \text{O}_2$
(excess) —————>
 - $\text{CH}_3\text{COOH} + \text{C}_2\text{H}_5\text{OH}$
—————>
Acid



b) Write the IUPAC name of the next homologue of CH_3OH , $\text{CH}_2 = \text{CH}_2$

OR

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

(b) Name the compound formed on heating ethanol at 443K with excess of conc. H_2SO_4 .

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

25. (a) Name one organ each in female and male reproductive system which plays a role of endocrine gland along with production of germ cells. Name one hormone secreted by each them.

(b) State two advantages to the development of the embryo in the mother's womb.

(c) Where does fertilization occur in case of human female and name the place where fertilized egg gets implanted.

OR

(a) Give an example of a bisexual flower. What is its female reproductive part known as?

(b) Draw a diagram of its longitudinal section showing the process of germination of pollen on stigma and label the following on it:

(i) male germ cell

(ii) female germ cell

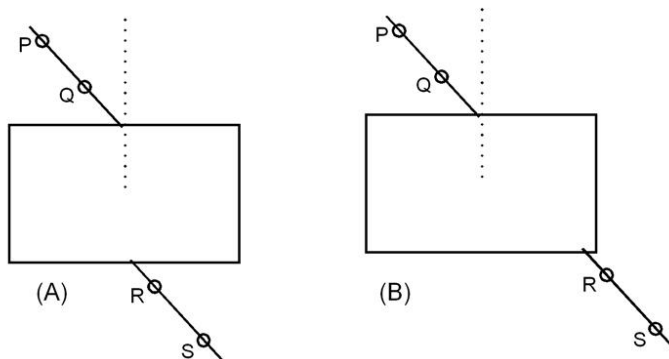
(iii) ovary

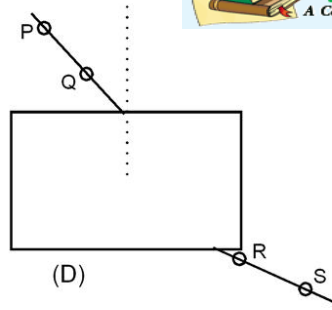
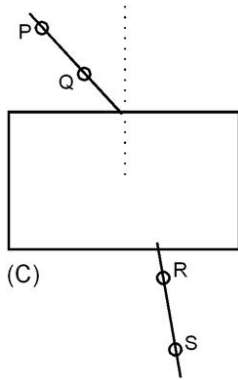
(iv) pollen tube

(c) Pollination may occur without fertilization but fertilization will not take place without pollination. Give reason.

Section (B)

26. Four students A, B, C and D traced the path of a ray of light passing through a glass slab placed in air. Their observations about incident and emergent ray were recorded as given below:

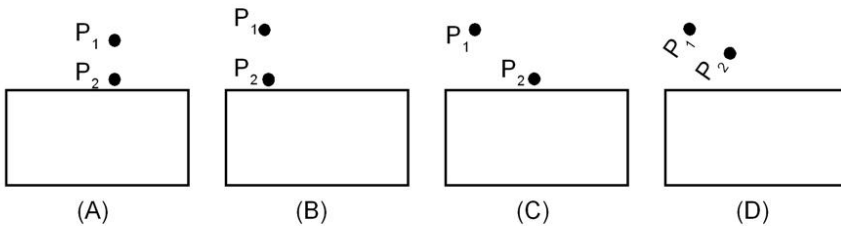




The student who made the correct observation is:

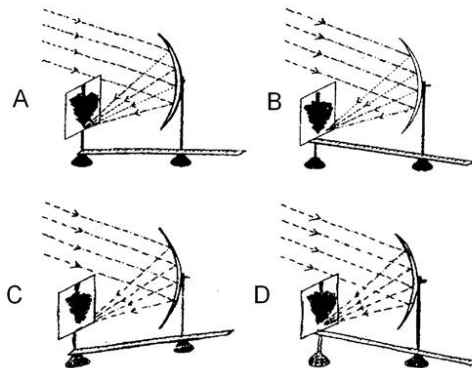
- a) A b) B c) C d) D

27. While tracing the path of a ray of light passing from air through a rectangular glass slab, the setup, in which the best result will be obtained is.



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

28. Four students A, B, C and D carried out measurement of focal length of a concave mirror, as shown in the diagrams given below:



The correct focal length will be obtained by student

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

29. To find the focal length of a concave mirror, the four students, Ram, Shamim, Kamla and Ruksana obtained the image of the window grill on a wall. They measured the distances as given below between

- Ram - window grill and the wall only
- Shamim - window grill and the mirror only
- Kamla - mirror and wall only
- Ruksana - window grill and the wall and also
between the mirror and the wall

Correct focal length will be obtained by the student

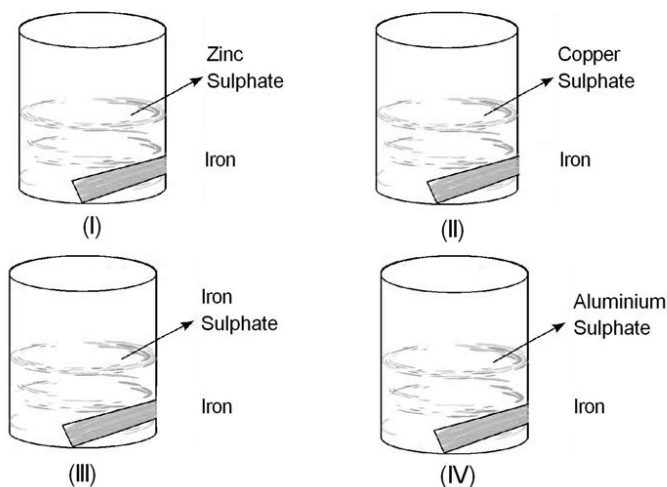
- a) Ram b) Shamim c) Kamla d) Ruksana

30. Which of the following set of materials represents the minimum material required for determining the focal length of a convex lens by obtaining the image of a distant object on a screen in your school laboratory.

- i) Set A - A candle, a match box, a convex lens, a lens holder, a screen with stand.
- ii) Set B - A lens holder, a convex lens, a concave lens, a measuring scale.
- iii) Set C - A Convex lens, a lens holder, a screen with a stand, a measuring scale.
- iv) Set D - A convex lens, a burning candle, a screen with stand, a lens holder.

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

31. An iron strip was left dipped in aqueous zinc Sulphate, Copper Sulphate, Iron sulphate and Aluminium Sulphate solutions, as shown below by Rahul in his school laboratory. He would observe the deposition of metal on iron in beakers.



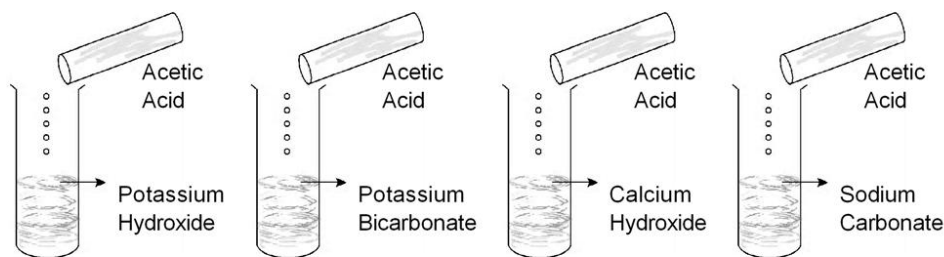
- a) I & II b) II c) III d) III & IV

32. Aqueous solution of copper sulphate and Iron sulphate were taken in test tubes I and II by four students A,B,C & D. Metal pieces of Iron and zinc were dropped in the two solutions and observations made after several hours and recorded in the form of a table as given below.

Observation by	METAL	SOLUTION	Colour Changes of Solutions	Deposits / Residue obtained
A	Fe	$CuSO_4$	Turned green	Silver grey coating
	Zn	$FeSO_4$	Turned blue	no change
B	Fe	$CuSO_4$	no change	Black Residue
	Zn	$FeSO_4$	colour faded	Grey Coating
C	Fe	$CuSO_4$	Turns green	Reddish brown ppt
	Zn	$FeSO_4$	Turns color less	Black residue
D	Fe	$CuSO_4$	no change	Grey residue
	Zn	$FeSO_4$	no change	Black residue

The correct observations were made by

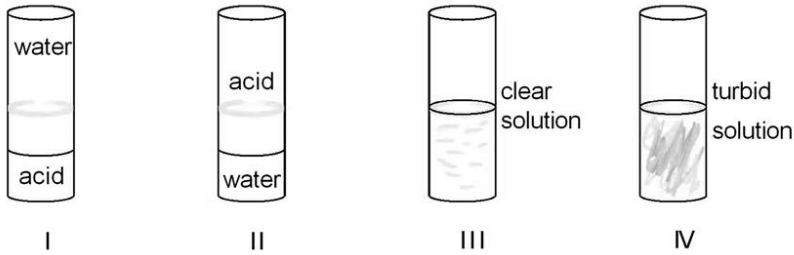
- a) A only b) A & B c) C only d) B & D
33. Dilute acetic acid was added to the four test tubes containing the following chemicals:
- KOH
 - $NaHCO_3$
 - K_2CO_3
 - NaCl
- Brisk effervescence was observed in tes tubes:
- a) I & II b) II & III c) I & IV d) II & III
34. A student added acetic acid to test tubes I, II, III, IV



The lighted candle would be extinguished when placed near the mouth of the test tube

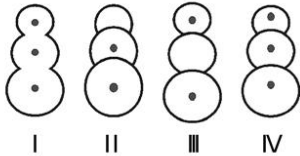
- a) I & II b) II & III c) II & IV d) I & IV

35. 10 mL each of Acetic acid and water are mixed together and shaken in different test tubes as given below:



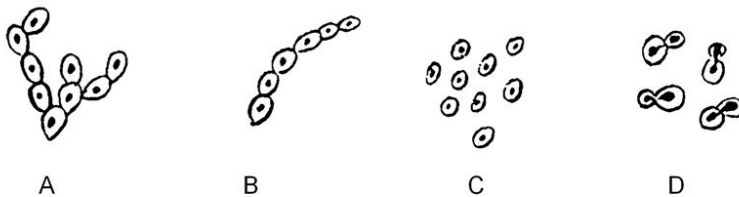
The resulting mixture after standing would appear as shown in test tube

- a) I b) II c) III d) IV
36. Following diagrams were drawn by four different students on having seen a prepared slide of budding in yeast.



The correct diagram is

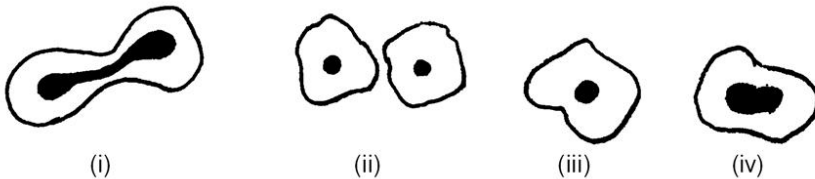
- a) I b) II c) III d) I and IV
37. Which of the following figures does not show budding.



- a) B
b) C
c) A
d) D
38. A teacher soaked 10 raisins in 35 ml of distilled water in a beaker labelled A and similar activity she performed and labelled the other beaker B.
She maintained the temperature of beaker A at 20 °C and of beaker B at 40 °C

After an hour what will be percentage of water absorbed by raisins in beaker A and by those in beaker B

- a) the same
 - b) more in A and less in B
 - c) more in B and less in A
 - d) exactly twice as much in B as in A
39. A student soaked 10 g of raisins in 25ml of water in beaker A and 20 g of raisins in 50ml of water in beaker B and measured the quantity of water left in the beakers after an hour. What will he find?
- a) There will be no change in the quantity of water in beakers A and B
 - b) Beaker B will have as much water as in beaker A
 - c) Beaker B will have more water than beaker A
 - d) Beaker A will have more water than beaker B
40. The following figure illustrates binary fission in Amoeba. Choose the option giving the correct sequence.



- a) (i), (iv), (iii), (ii)
 - b) (iii), (iv), (i), (ii)
 - c) (iv) (ii), (i), (iii)
 - d) (iii) (iv) (ii) (i)
41. If x represents weight of soaked raisins and y represents weight of dry raisins then $\frac{(x-y)}{y} \times 100$ is a way to calculate percentage of:
- a) water absorbed by raisins in hypertonic solution
 - b) water absorbed by raisins in hypotonic solution
 - c) water lost by raisins in hypotonic solution
 - d) water lost by raisins in hypertonic solution