Directorate of Education
Govt. of NCT of Delhi

Practice Test Material
2015-2016

Subject : SCIENCE
Class : X

Under the guidance of :

Addl. DE (School/Exam)

PRACTICE TEST-1

CLASS: X

SUBJECT: SCIENCE

CARBON AND ITS COMPOUNDS (CHAPTER-4)

Time : 50 min. **M.M. 20**

General Instructions:

1. *Q. 1-3 are very short answer type (VSA)*
2. *Q. 4-6 are short answer type (SA-I)*
3. *Q. 7-9 are short answer type (SA-II)*
4. *Q. 10 is long answer type (LA)*

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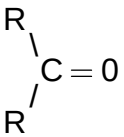
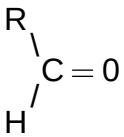
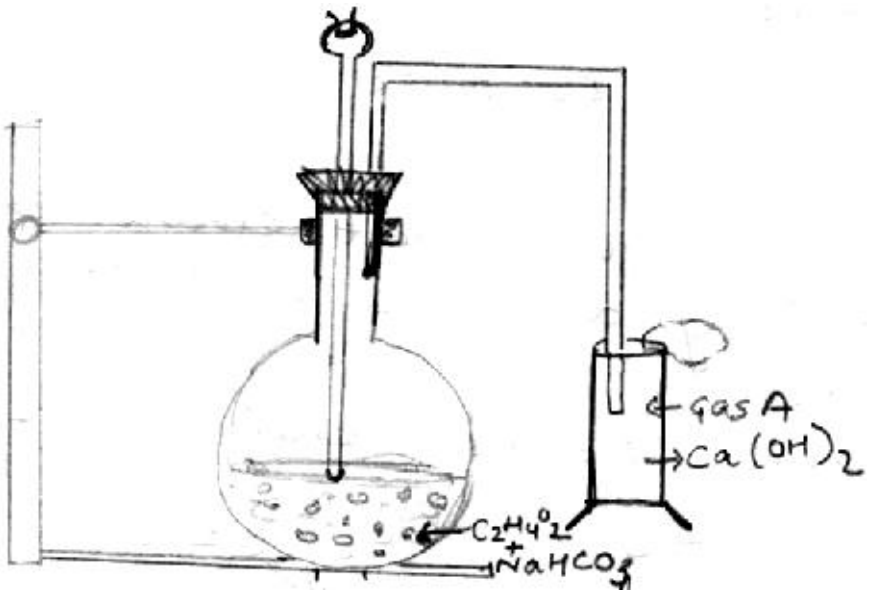
1. Carbon does not form C^{4-} anion. Give reason.
2. Name any one molecule and one compound containing triple bond.
3. Draw the structural formula of 2-3 dimethyl pentane.
4. Draw the structure of two isomers of pentane.
5. How can you convert ethanol into a hydrocarbon containing a double bond? Write the reaction also.
6. Identify the functional group:

a) 

b) 

7. How will you obtain :
   a) Aldehyde from ethane
   b) Ketone from butane
   c) Ethanol from ethanol
8. Draw the electron dot structure of the following :
   a) S_8
   b) C_2H_6
   c) CH_3COOH
9. Explain the formation of micelle in the cleansing action of soap. Clearly specify the hydrophobic and hydrophilic part of the soap molecule. Also write three differences between soaps and detergents.

10. Observe the diagram and answer the following questions:



a) Identify the gas 'A'. What happens to calcium hydroxide when gas 'A' is passed through it.

b) Name the function group present in $C_2H_4O_2$.

c) Write chemical equation for the reaction of $C_2H_4O_2$ with sodium carbonate.

d) Write one property of $C_2H_4O_2$ which differentiates it from ethanol.

e) The compound $C_2H_4O_2$ reacts with ethanol in the presence of sulphuric acid. Write the chemical equation involved.

PRACTICE TEST-2

CLASS: X

SUBJECT: SCIENCE

PERIODIC CLASSIFICATION OF ELEMENTS (CHAPTER-5)

Time : 50 min. **M.M. 20**

General Instructions:

1. *Q. 1-3 are very short answer type (VSA)*
2. *Q. 4-6 are short answer type (SA-I)*
3. *Q. 7-9 are short answer type (SA-II)*
4. *Q. 10 is long answer type (LA)*

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1. From the following pair of elements which one is not in accordance with the Mendeleev's Peridic law.
   a) Lithium-Sodium
   b) Tellurium-Iodine
   c) Carbon-Silicon
   d) Fluorine-Chlorine
2. "Fluorine" is more electronegative than Iodine." Give reasons in support of this.
3. Name any three metalloids.
4. Element 'X' releases hydrogen gas on reaction with dilute hydrochloric acid. 'X' should be a part of Group 1 or Group 17 of Modern Periodic Table? Give reasons in support of your answer.
5. Hydrogen was not given a definite position in the Mendeleev's periodic table. Give reasons.
6. Dobereiner grouped elements showing similar properties into triad. Carbon (12), Nitrogen (14) and Oxygen (16) can form a triad. Is it then correct to consider them a 'triad'. Explain.
7. In Mendeleev's Period Table, sodium, potassium, copper, silver and gold are placed in same group. Comment.
8. Consider the following and answer the questions that follow:

Group 1	Group 2	Group 3
A	B	C
D	E	F
G	H	I

a) Amongst A, D and G, which is not electropositive and why?

b) Atomic size of H is bigger than B. Why?

c) Write the formula of compound formed by element E and fluorine.

9. How did the gaps left by Mendeleev in his periodic table help in the discovery of these undiscovered elements?

10. A class tenth science teacher hung a chart of Modern Periodic Table on a wall in the classroom. A big plane mirror placed to the right side of this chart was adjusted in such a way that students could see only the image of the chart, but not the chart itself. Answer the following :

a) Describe the trend of variations in valency across the periods and in a group on the basic of image seen in the mirror.

b) How will the atomic size change on moving from left to right in a period in the image seen in the mirror?

PRACTICE TEST-3

CLASS: X

SUBJECT: SCIENCE

HOW DO ORGANISMS REPRODUCE (CHAPTER-8)

Time : 50 min. **M.M. 20**

General Instructions:

1. *Q. 1-3 are very short answer type (VSA)*
2. *Q. 4-6 are short answer type (SA-I)*
3. *Q. 7-9 are short answer type (SA-II)*
4. *Q. 10 is long answer type (LA)*

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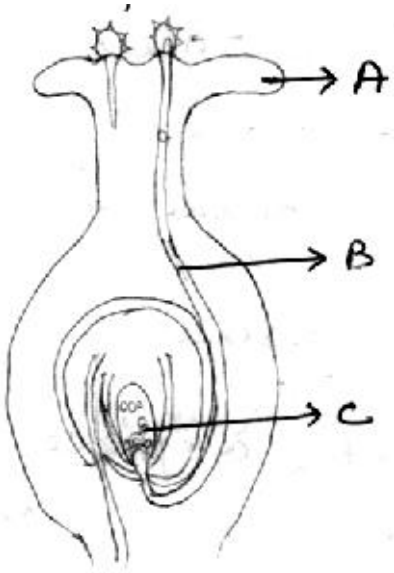
1. The transfer of pollen grains from anther to stigma is termed as :
   a) Fertilisation
   b) Pollination
   c) Ovulation
   d) Conjugation
2. Fertilisation of ovum in human beings takes place in
   a) Ovary
   b) Vagina
   c) Uterus
   d) Fallopian tube
3. In which plant, a piece of leaf can regenerate the whole plant?
4. Name those parts of a flower which serve the same function as the following do in the animals:
   a) Testis
   b) Ovary
   c) Eggs
   d) Sperm
5. List the changes that occur in a flower after pollination and fertilisaiton.
6. Surgical methods can be used to create a block in the reproductive system for contraceptive purposes. Name such parts where block are created in (i) females (ii) males.
7. a) Name the type of asexual reproduction in following :
   (i) Planaria (ii) Rhizopus (iii) Spirogyra (iv) Hydra

b) What is the role of seminal vesicle and the prostrate gland?

8. Identify A, B and C in the given diagram and write their functions:



9. What could be the possible reasons for declining female : male sex ratio in our country. Suggest two measures to achieve 1:1 ratio?

10. a) Name the hormone secreted by (i) Testis (ii) Ovary

b) List two functions for each of these hormones.

c) Why does the testis lies outside the abdominal cavity in scrotum in human males?

d) Name the organ where fertilised egg gets implanted.

PRACTICE TEST-4

CLASS: X

SUBJECT: SCIENCE

HEREDITY AND EVOLUTION (CHAPTER-9)

Time : 50 min. **M.M. 20**

General Instructions:

1. *Q. 1-3 are very short answer type (VSA)*
2. *Q. 4-6 are short answer type (SA-I)*
3. *Q. 7-9 are short answer type (SA-II)*
4. *Q. 10 is long answer type (LA)*

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1. Name the scientist who :
   a) Established laws of inheritance
   b) Proposed the theory of natural selection
2. Define Gene and Heredity
3. Study the following cross. Fill in the blank :

PARENT - RRYY X rryy

Round Yellow ↓ Wrinkled green

RrYy X ____?____

4. Mendel choose _____ plants for his experiment.
5. Complete the following :

PARENT - XX X XY

↓

F_1 FEMALE ____?____

	X	Y
X	?	?
X	?	?

6. What are fossils? What do fossils tell us about the process of evolution?
7. Explain the terms and give one example of each:
   (i) Analogous organs (ii) Homologous organ

8. What is speciation? What are the factors responsible for speciation?

9. Wild cabbage was converted into number of variants like cauliflower, broccoli and cabbage by man. What is this process known as? Does it play an important role in organic evolution?

10. Pure tall pea plants are crossed with pure dwarf pea plants to obtain F_1 generation. On selfing F_1 generation F_2 generation is obtained. Answer the following questions:

    i. What is the phenotype of F_1 generation and why?

    ii. Find phenotypic ratio of F_2 generation.

    iii. Why is F_2 different than F_1 generation?

PRACTICE TEST-5

CLASS: X

SUBJECT: SCIENCE

LIGHT : REFLECTION AND REFRACTION (CHAPTER-10)

Time : 50 min. **M.M. 20**

General Instructions:

1. *Q. 1-3 are very short answer type (VSA)*
2. *Q. 4-6 are short answer type (SA-I)*
3. *Q. 7-9 are short answer type (SA-II)*
4. *Q. 10 is long answer type (LA)*

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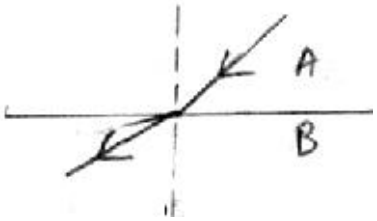
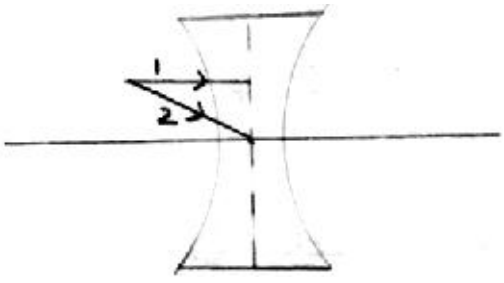
1. Identify the type of mirror which has a focal length of –15cm.
2. A ray of light is refracted as per the following diagram. Which medium A or B is optically denser than the other?



3. State True or False :
   a) We always get a real image by using a concave mirror.
   b) A lemon placed in water appears lager in size due to refraction.
4. Draw the refracted rays corresponding to incident rays 1 and 2 as shown in the figure given below:



5. Mention the types of mirrors used in each of the following :
   a) Shaving Mirror
   b) Motor bike
   c) Periscope
   d) Compound Microscope

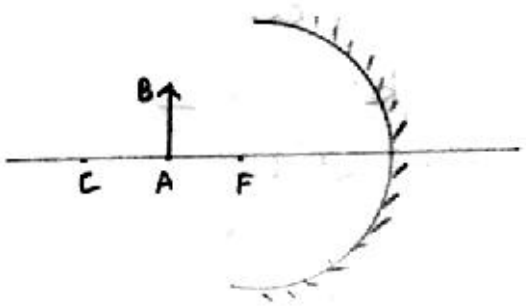
6. Why is the power of a lens measured as a reciprocal of its focal length?

7. A pencil, when dipped in water in a glass tumbler appears to be bent at the interfere of air and water will the pencil appear to be bent to the same extent, if instead of water we use liquids like Kerosene or Turpentine. Give two reasons.

8. a) “Vehicles in this mirror are closer than they appear”. Why his this warning printed on the side view mirror of most vehicles?

   b) When does Snell’s law of refraction fail?

9. Draw the ray diagram and show the formation of image for an objects AB. Mention the position and nature of the image.



10. Ajeet focussed the image of a candle flame on a white screen using a convex lens. He took the following readings:

    Position of candle = 12 cm

    Position of convex lens = 50 cm

    Position of screen = 88 cm

    a) What is the focal length of convex lens used?

    b) Where will the image be formed if Ajeet Shifts the candle towards the lens to a position of 31 cm?

    c) Draw a ray diagram to show image formation if candle is shifted even closer to lens. Comment on nature of image.

PRACTICE TEST-6

CLASS: X

SUBJECT: SCIENCE

HUMAN EYE AND COLOURFUL WORLD (CHAPTER-11)

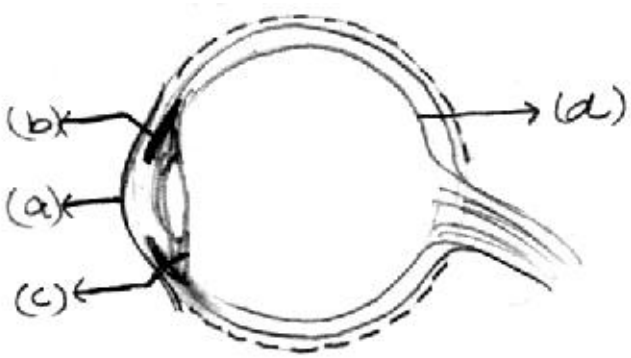
Time : 50 min. **M.M. 20**

General Instructions:

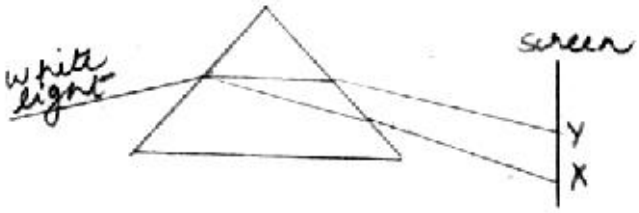
1. *Q. 1-3 are very short answer type (VSA)*
2. *Q. 4-6 are short answer type (SA-I)*
3. *Q. 7-9 are short answer type (SA-II)*
4. *Q. 10 is long answer type (LA)*

****

1. If we increase the distance of an object from the eye, how will the distance of image formed in the eye change?
2. How can we restore the vision of a person suffering from cataract?
3. A person has trouble in both reading-writing and driving car. Identify the defect of his vision.
4. A person cannot see distinctly beyond 2m. This defect can be corrected by using a lens of power :
   a) + 0.5D
   b) – 0.5D
   c) 0.2D
   d) – 0.2D
5. Will a beam of white light give a spectrum on passing through a hollow prism.
6. Name the four parts labelled as a, b, c, d in the given diagram and write their functions:



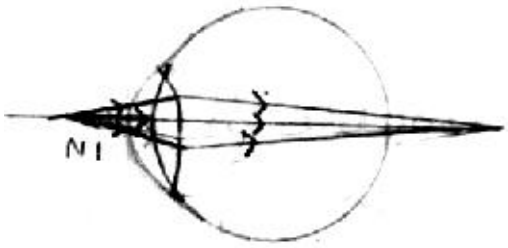
7. A narrow beam of light produces a spectrum XY on passing through a triangular glass prism.



a) State the colour seen at X and Y

b) Why do the different components of white light bend through different angles with respect to the incident beam of light.

8. Study the diagram and answer the questions that follow:



a) Identify the defect of vision. Give reason for your answer.

b) State two possible causes of this defect.

c) How can we rectify this defect? Explain with a diagram.

9. Dolly and Ritu are two friends studying together in class Eighth. They prefer to sit together. Dolly has trouble while reading the blackboard when they sit at the last bench. Dolly is depressed fearing that she may turn blind one day. Ritu explains to her that the problem may be due to some minor eye defect. They visit a doctor who prescribes specs of suitable power for Dolly. Dolly is now all smiles and thanks Ritu.

a) Name the eye defect Dolly is suffering from.

b) List the causes of this defect.

c) The far point of Dolly is 50cm. What is the power of lens?

d) What values are displayed by Ritu?

10. Give reasons for the following :

i) Colour of the sky is blue

ii) The sun can be seen about two minutes before actual sunrise

iii) Why do stars appear higher than they actually are?

iv) Why does sun appear reddish at sunrise?

v) Danger signals are always red.

PRACTICE TEST-7

CLASS: X

SUBJECT: SCIENCE

OUR ENVIRONMENT (CHAPTER-15)

Time : 50 min. **M.M. 20**

General Instructions:

1. *Q. 1-3 are very short answer type (VSA)*
2. *Q. 4-6 are short answer type (SA-I)*
3. *Q. 7-9 are short answer type (SA-II)*
4. *Q. 10 is long answer type (LA)*

****

1. Which of the following are non-biodegradable? Wood, plastic mug, aluminium foil, leather.
2. Name the two main components of our environment.
3. Why do we keep small aquatic plants in an aquarium?
4. What will happen if there are producer and consumers and no decomposers in an ecosystem?
5. Write a food chain operational in a fresh water pond with the help of a flow chart.
6. Which of the following belongs to the same trophic level and why?

   Plants, Peacock, Goat, Snake, Rat

7. Match the following :

i)	Biomagnification	a)	A man made ecosystem
ii)	Ecosystem	b)	Organisms which obtain food from other living organisms
iii)	Aquarium	c)	Accumulation of chemicals in the successive trophic levels of a food chain
iv)	Parasites	d)	Biotic and abiotic components of environment.

8. Calculate the amount of energy available to tiger in the following food chain if plants have 20,000J of energy available from the sun (Plant can trap only 1% of the sun's energy). State the law which is involved.

   Plant $\rightarrow$ Deer $\rightarrow$ Tiger

9. How is ozone formed in the upper atmosphere? Why is damage to ozone layer a cause of concern to us? What causes ozone depletion?

10. i) Differentiate between autotrophic nutrition and heterotropic nutrition. Give one example of each of these nutrition.

ii) How can we dispose the following wastes?

a) Domestic wastes like vegetable peels

b) Industrial wastes like metallic cans

c) Plastic material

PRACTICE TEST-8

CLASS: X

SUBJECT: SCIENCE

MANAGEMENT OF NATURAL RESOURCES (CHAPTER-16)

Time : 50 min. **M.M. 20**

General Instructions:

1. *Q. 1-3 are very short answer type (VSA)*
2. *Q. 4-6 are short answer type (SA-I)*
3. *Q. 7-9 are short answer type (SA-II)*
4. *Q. 10 is long answer type (LA)*

****

1. A multicrore project was started in the year 1985 because of poor quality of water in the river 'Ganga'. Name the organism that was found in its water sample which confirmed that the water of this river was highly contaminated?
2. In the "refuse" strategy we simply use the things again and again. Identify two things that can be reused at your home.
3. Sustainable natural resource management demands that we plan for the safe disposal of the waste. Cite one example where unplanned waste disposal is causing large amount of pollution in our country.
4. Mention the reasons for opposition to the construction of large dams, such as 'Tehri Dam' on river 'Ganga' and 'Sardar Sarovar Dam' on river 'Narmada'.
5. Government of India has instituted an award in the memory of 'Amrita Devi Bishnoi'. Describe her immense contribution towards conservation of environment.
6. Your father decided to go to his office daily by 'car pool' instead of driving his own car. Justify / criticize your father's decision giving two reasons each.
7. When we consider conservation of forest, we need to look at stakeholders. Mention the two stakeholders?
8. Economic development is linked to environmental conservation. Justify with help of two examples.
9. Sal forests in South East district of West Bengal was considered a worthless asset in 1972. But by 1983 the same forest was valued at Rs. 12.5 crores. Name the forest officer who brought about this turnover and explain the strategy adopted by him.
10. Rohan and his family face acute water shortage during the summers as wells dry up. But with arrival of monsoons the problem is solved. He discussed the problem with his science teacher and asked for a solution. What according to you was the solution offered to him based on present circumstances.