

PRACTICE TEST (2019-20)

SUBJECT: SCIENCE

CLASS: X

MAX. MARKS: 80

DURATION: 3:00 HRS

General Instructions –

- 1) The question paper comprises three sections – A, B and C. Attempt all the sections.
- 2) All questions are compulsory.
- 3) Internal choice is given each section.
- 4) All question in section A are one-mark questions comprising MCQ, VSA and assertion – reason type question. They are to be answered in one word or in one sentence.
- 5) All question in section B are three marks, short answer type questions, these are to be answered in about 50 – 60 words each.
- 6) All questions in section C are five marks, long answer type question. These are to be answered in about 80 – 90 words each.
- 7) This question paper consists of a total of 30 questions.

Section – A

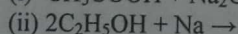
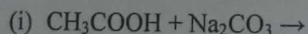
Q1. Write the molecular formula of the 2nd and the 3rd number of the homologous series whose first member is Ethyne.

Q2. In the following food chain, 10 J of energy is available to the lion. How much energy was available to the producer?

Plant → Deer → Lion

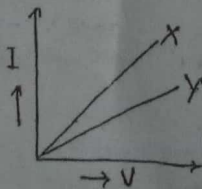
Q3. Why is variation important for a species?

Q4. Complete the following chemical equations –



Q5. Why is lake considered to be a natural ecosystem?

Q6. I – V graph for the metallic wires X and Y at constant temperature are as shown in figure. Assuming that the two wires have same length and same diameter, explain as which of two wires has higher resistance.



NHL/X/SCI/1

Q7. How does atomic size of an element vary across a period?

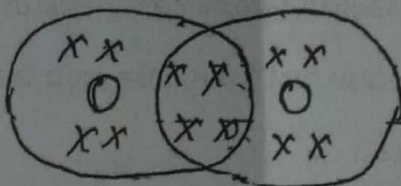
Q8. A red brown gas is released along with O_2 and lead oxide on heating lead nitrate. It is an example of –

- a) Combination Rth
- b) Oxidation reaction
- c) Decomposition reaction
- d) Reduction reaction

Q9. What is the common name of $CaOCl_2$?

- a) Bleaching powder
- b) Baking soda
- c) Washing soda
- d) Lime water

Q10. According to given figure, how many electrons are being shared by each oxygen?



- a) 2
- b) 3
- c) 1
- d) 4

Q11. Elements P, Q, R and S have atomic numbers 11, 15, 17 and 18 respectively – which of them are reactive non-metals?

- a) P and Q
- b) P and R
- c) Q and R
- d) R and S

Q12. Rings of cartilage present in the throat ensure that

- a) The air passage collapses
- b) The air passage does not collapse
- c) The air is filtered entering the nostrils
- d) None of the above.

Q13. Directions – In the following questions, a statement of Assertion is followed by statement of reason. Mark the correct choice as –

- a) If both Assertion and Reason are true but reason is not correct explanation of Assertion.
- b) If both Assertion and Reason are true but Reason is ~~not~~ correct explanation of Assertion.
- c) If Assertion is true but reason is false.
- d) If reason is true but Assertion is false.
- e) If both Assertion and reason are false.

Q13.

- (i) Assertion – Branched chain alkanes have lower B.P.
Reason – As molecular size decreases B.P increases.

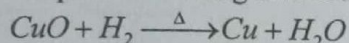
NHL/X/SCI/2

(ii) Assertion – Atomic size of potassium is greater than 'Na'.
Reason – As we go down the group, atomic radius increases.

(iii) Assertion – Convex mirror is preferred for rear view mirror.
Reason – The field view of a convex mirror is lesser than that of concave mirror.

Q14.

- (i) Find the power of concave lens of focal length 25 cm.
- (ii) Lack of oxygen in muscles often leads to cramps among sportsmen, comment.
- (iii) Why LPG should be preferred over wood, coal and kerosene to cook food?
- (iv) Define catenation.
- (v) Which component is being reduced in the given reaction?



Section – B

Q15.

- (i) Create a terrestrial food chain depicting four trophic levels.
- (ii) Why do we not find food chains of more than four trophic levels in nature?

Q16. Explain the following method of contraception by giving one example of each.

- (i) Barrier method
- (ii) Chemical method
- (iii) Surgical method

Q17.

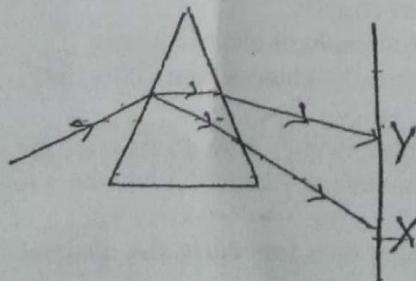
- (i) Name the process by which autotrophs prepare their own food.
- (ii) Name the pigment, its location and function involved in photosynthesis.
- (iii) Name the element which is taken up in the form of inorganic nitrate or nitrites.

OR

Explain the functions of the following in digestive process –

- (i) Mucus
- (ii) HCl
- (iii) Pancreatic lipase

Q18. In the fig. given below, a narrow beam of white light is shown to pass through a triangular glass prism. After passing through the prism, it produces a spectrum XY on the screen.



NHL/X/SCI/3

- (i) Name the phenomenon.
- (ii) State the colours at X and Y.
- (iii) Why do different colours of white light bend at different angles through prism?

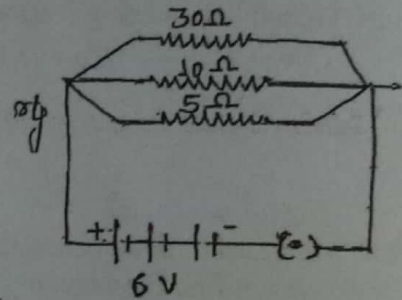
OR

Explain in brief the reason for each of the following –

- (i) The sun appears reddish during sunrise.
- (ii) At noon the sun appears white.
- (iii) To an astronaut the sky appears dark instead of blue.

Q19. Two wires A and B of equal length and have equal resistance. If the resistivity of A is more than that of B wire thicker and why? For electric circuit given below calculate.

- (i) Current in each resistor.
- (ii) Total current drawn from the battery
- (iii) Equivalent resistance of the circuit.



OR

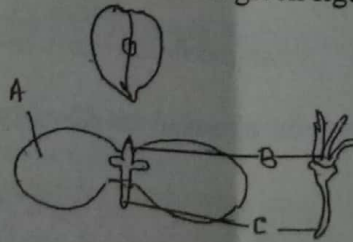
How will you differentiate between soaps and detergents?

Q20. Explain the structure of carpel with the help of a labeled diagram.

Q21. Explain the processes of aerobic respiration in mitochondria of a cell and aerobic respiration in yeast and muscle with the help of word equation.

Q22.

- (i) What happens to ovule and ovary after the fertilisation in flowering plants?
- (ii) Define the process of germination.
- (iii) Name the parts labeled as A, B and C in the given figure.



Q23. Give reason, why –

- (i) Connecting wires are made of copper.
- (ii) Nicrome is used to make the element of electric heater.
- (iii) The 500w bulb glows with more brightness than 200w bulb.

Q24. The far point of a myopic person is only 40m, in front of the eye. Calculate the nature and focal length of lens to correct the defect. Also, calculate the power of lens used.

Q25. What is ozone? How and where is it formed in the atmosphere? Explain how does it affected ecosystem.

NHL/X/SCI/4

Section – C

Q26. The pH of soil A is 7.5 while that of soil B is 4.5. Which of the two soils A or B should be treated with powdered chalk to adjust its pH and why?

Q27. Study the following table in which position of six elements A,B,C,D,E and F are shown as they are in the modern periodic table –

Group → Period ↓	1	2	3-12	13	14	15	16	17	18
2		A					B		C
3	D				E				F

On the basis of the above table, answer the following question –

- Name the element which will form only co-valent bond.
- Which element is a metal with valency one?
- Which element is a non-metal with valency two?
- Out of D and E, which has a bigger atomic radius?
- Write the formula of the compound formed when B combines with D.

OR

Draw a diagram of the front view of human heart and label any six parts including at least two, that are concerned with arterial blood supply to the heart muscles.

Q28.

- How many pairs of chromosomes are present in human being? Out of these how many are sex chromosomes? How many type of sex chromosomes are found in human being?

OR

a) Define the following term in the context of spherical mirror –

- Pole
- Centre of curvature
- Principal axis
- Principal focus

b) Draw ray diagram to show the principal focus of a

- Concave mirror
- Convex mirror

c) Consider the following diagram in which M is a mirror and P is an object and Q is its magnified image formed by the mirror.

Q29. State the reason for the following –

- Aluminium oxide is called an amphoteric oxide.

NHL/X/SCI/5

- (ii) An iron strip dipped in a blue copper sulphate solution turns the blue solution pale green.
- (iii) Hydrogen gas is not evolved when most metals react with nitric acid.
- (iv) Calcium does not occur in Free State in nature.
- (v) Sodium or potassium metals are kept immersed under kerosene.

Q30. What is atmospheric refraction? Use this phenomenon to explain the following natural events?

- a) Twinkling of stars.
- b) Advanced sunrise and delayed sunset.

Draw diagrams to illustrate your answers.

OR

Metal X is found in nature as its sulphide XS . It is used in galvanization of iron articles. Identify the metal X. How will you convert this sulphide ore into the metal? Explain with equations.

Marking Scheme for Practice paper 2019-20

K.V MARI 2nd Shift

SECTION → A

1. C_3H_4, C_4H_6
C 1
2. 1000 J 1
3. Variation is important for a species for survival and adaptation of natural conditions 1
4. $CH_3COOH + Na_2CO_3 \longrightarrow CH_3COONa + CO_2 + H_2O$ 1/2
 $2C_2H_5OH + 2Na \longrightarrow 2C_2H_5ONa + H_2$ 1/2
 (Hydrogen Gas)
5. Because biotic and abiotic components are found in the lake. like biotic (Animal, plant) Abiotic (Soil) etc. 1
6. Wine X has more Resistance than Y 1
7. When we go left to right in a period Atomic size decreases 1
8. (c) decomposition Reaction 1
9. $CaOCl_2$ - bleaching powder 1
10. @ 2 1
11. (B) Q and R 1
12. (B) The air passage does not collapse. 1
13. (i) (a) 1
 (ii) (d) 1

(iii) (c)

14. (i) $F = 25 \text{ cm}$ $P = ?$

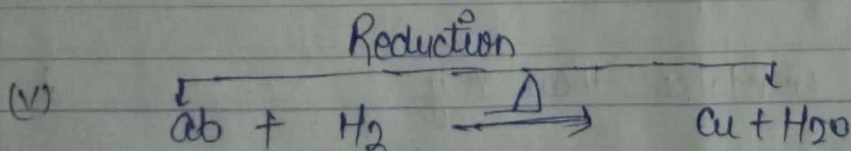
$$P = \frac{100}{F} = \frac{100}{25} = 4$$

$P = 4$ Diotres

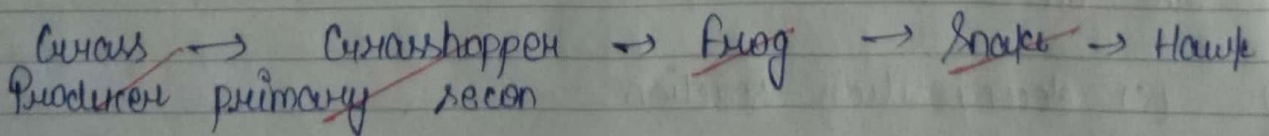
(ii) Lack of oxygen in muscles often leads to cramps among sportsmen. Comment: It is done due to formation of lactic acid in their body.

(iii) LPG should be preferred over wood, coal and kerosene to cook food because LPG is cheap gas and does not pollute the environment.

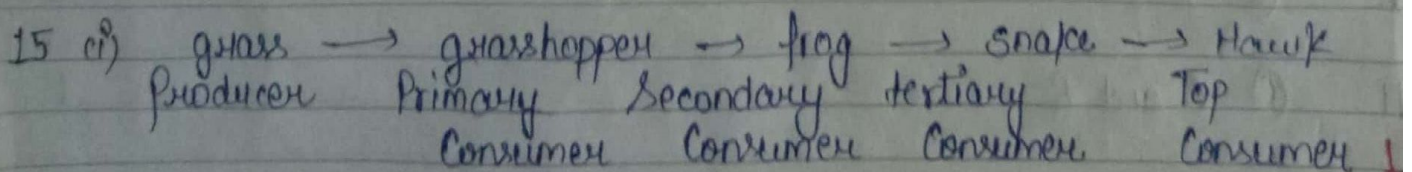
(iv) The property of carbon of self combination makes long chain of hydrocarbon.



CuO is reduced in this reaction.



Section B



(ii) We do not find food chains of more than four trophic levels in nature because top consumer is not eaten by some other organism.

16 (i) Barrier Method :- Condoms and diaphragm are used as used as barrier b/w sperm and ovum. Condoms is used by Males & diaphragm is used by females 1

(ii) Chemical Method :- female uses oral pills they contain A hormone which stops the ovary for producing egg. 1

(iii) Surgical Method :- In Males A Small portion of vas deference is removed by surgery called Vasectomy and In female a small portion of fallopian tube is removed called Tubectomy 1

(17) (i) Photosynthesis 1

(ii) Chlorophyll, leaves, convert solar energy into chemical energy 1

(iii) Sodium Nitrate 1

OR

(i) Mucus :- They protect the inner lining of the stomach from the action of HCl. 1

(ii) HCl :- HCl Makes Acidic Medium in stomach and Regulate Enzyme (pepsin), kill the bacteria 1

(iii) Pancreatic Lipase :- break Emulsified fat into fatty acid and glycerol 1

18. (i) Dispersion of light 1

(ii) α is violet colour, γ is red colour. 1

(iii) through the refraction when white light goes from Rarer to Denser Medium it bends towards the Normal. 1

Or

(i) Because the Sun is very close to the horizon during sunrise and sunset. therefore light other than red is Mostly scattered away. 1

(ii) At noon the sun is overhead and light travels a relatively shorter distance through the atmosphere to reach the earth. \perp

(iii) Because there is no atmosphere in the outer space that can scatter the sunlight. \perp

19. (i) $R_1 = 30\ \Omega$
 $V = 6V$

$$I = \frac{V}{R} = \frac{6}{30} = \frac{1}{5} = 0.2A$$

$R_2 = 10\ \Omega$
 $V = 6V$

$$I = \frac{6}{10} = 0.6A$$

$V = 6V$

$R_3 = 5\ \Omega$ $V = 6V$ \perp
 $I = \frac{6}{5} = 1.2A$

(ii) $I = I_1 + I_2 + I_3$
 $0.2 + 0.6 + 1.2$ \perp
 $I = 2.0A$

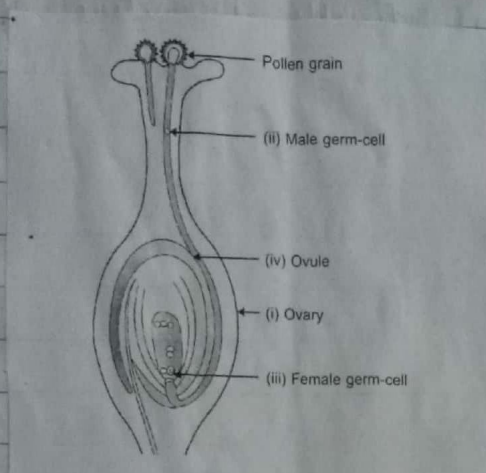
(iii) $\frac{1}{R} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$

$$\frac{1}{R} = \frac{1}{30} + \frac{1}{10} + \frac{1}{5}$$

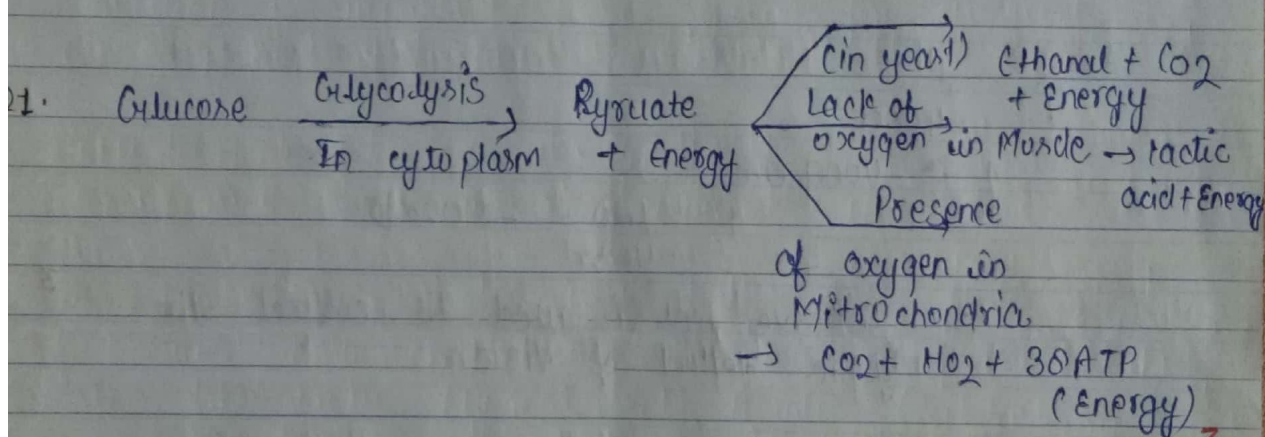
$$\frac{1}{R} = \frac{1 + 3 + 6}{30}$$

$$R = \frac{30}{10} = 3\ \Omega$$

$$R = 3\ \Omega$$
 \perp



3



3

22. (i) After fertilisation ovule and ovary change into a Zygote.

$\frac{1}{2}$

(ii) When female germ cell present in the ovule fertilises with the male germ cells and from new seedling plants is called germination of seed.

1

- (iii)
- A - Cotyledons
 - B - Plumule
 - C - Radicle.

$\frac{1}{2}$

$\frac{1}{2}$

$\frac{1}{2}$

23. (i) because copper wire has low resistivity though copper is good conductor of heat and electricity.

1

(ii) Because Nichrome has high resistance, Nichrome wire do not get oxidised.

1

ii) Because current is directly proportion of the power so when power is high then current is more produced in 500w bulbs. 1

24. $v = -40 \text{ cm} \times 100 = -4000 \text{ cm}$
 $u = -\infty$

$$f = 0$$
$$\frac{1}{v} - \frac{1}{u} = \frac{1}{f}$$

$$\frac{1}{-4000} - \frac{1}{(-\infty)} = \frac{1}{f} \quad \frac{1}{\infty} = 0$$

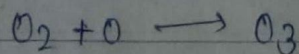
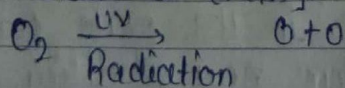
$$\frac{1}{f} = \frac{1}{-4000}$$

$$f = -4000 \text{ cm}$$

$$P = \frac{100}{-4000} = -0.025 \text{ D}$$

\therefore Concave lens is used to correct the Myopic defect of vision. 3

25. Ozone is a gas but it is poisonous in nature. When ultraviolet radiation fall on the O_2 then it breaks into two oxygen atom and then convert into ozone gas. [due to FCS]



(i) Ultraviolet radiation causes skin cancer. 2

26. Section - C

26. PH of soil is 4.5 should be treated with powdered chalk to adjust its PH value above 7. 5

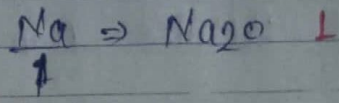
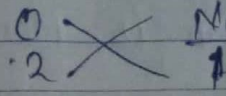
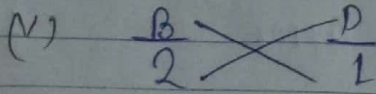
27. (i) E 1

(ii) D 1

(iii) 0
 (iv) 0

1
 1

(v)



28. 28 pairs of chromosomes are present in human being.
 23rd pair (1 pair of x and y) called sex chromosome and
 22 pairs of chromosomes are called autosomes. 5

OR

(a)

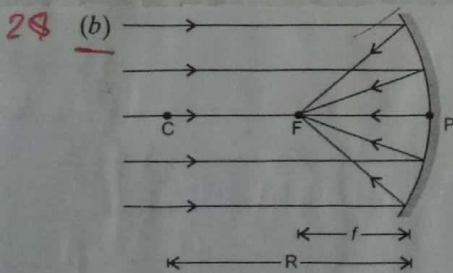
(i) The centre of spherical mirror is known as Pole 1

(ii) The straight line drawn through centre of curvature and focus and meet at pole is known as principal axis 2

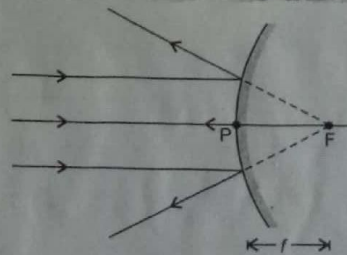
(iii) The centre of the whole hollow glass from which mirror is part is called centre of curvature 2

20. (c)

(iv) The point on the principal axis where all rays meet after reflection is called principal focus

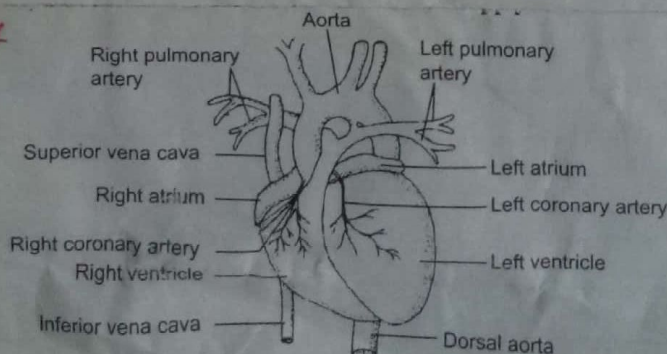


Principal focus of a concave mirror



Principal focus of convex mirror

Ans. 27



External Structure of Human Heart

5

29. (i) Aluminium oxide is called Amphoteric oxides because it shows reaction both character acid as well as base. 1

(ii) Because Iron is More reactive than Copper. 1

(iii) Because Nitric acid is very strong oxidizing agent. So it oxidised of H_2 gas to form $H_2O + \text{oxides}$. 1

(iv) Because Calcium Metal is very reactive if it found in free state then it will react with oxygen to form Calcium oxide. 1

(v) Because these Metals are very reactive, react with O_2 catch fire. 1

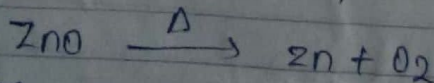
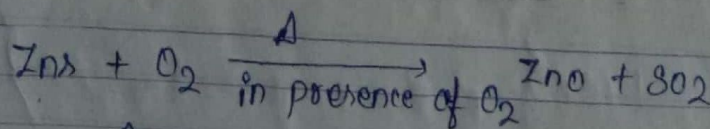
30. (a) Twinkling of stars is due to atmospheric refraction of star light. The star light after entering the Earth's atmosphere undergoes refraction in a continuous manner before it reaches the Earth. 3

(b) Due to atmospheric refraction. In this the Sun appears to rise early by 2 minutes and set late by 2 minutes. 2

OR

(a) Metal x is zinc. 1

Roasting



Hence, we get pure Metal Zinc (Zn). 2