

**KENDRIYA VIDYALAYA SANGATHAN, MUMBAI REGION**

**.SET 1**

**CLASS X PRACTICE TEST EXAMINATION**

**2020-21**

Subject: SCIENCE

Max Marks: 80

Class: X

Duration: 3 Hours

**General Instructions:**

- (i) *The question paper comprises four sections A, B, C and D. There are 36 questions in the question paper. All questions are compulsory.*
- (ii) *Section–A - question no. 1 to 20 - all questions and parts thereof are of one mark each. These questions contain multiple choice questions (MCQs), very short answer questions and assertion - reason type questions. Answers to these should be given in one word or one sentence.*
- (iii) *Section–B - question no. 21 to 26 are short answer type questions, carrying 2 marks each. Answers to these questions should be in the range of 30 to 50 words.*
- (iv) *Section–C - question no. 27 to 33 are short answer type questions, carrying 3 marks each. Answers to these questions should be in the range of 50 to 80 words.*
- (v) *Section–D – question no. - 34 to 36 are long answer type questions carrying 5 marks each. Answer to these questions should be in the range of 80 to 120 words.*
- (vi) *There is no overall choice. However, internal choices have been provided in some questions. A student has to attempt only one of the alternatives in such questions.*
- (vii) *Wherever necessary, neat and properly labelled diagrams should be drawn.*

<b>SECTION A</b>		
<b>S.No</b>	<b>Questions</b>	<b>Marks</b>

1	<p>NaOH + HCl <math>\rightarrow</math> NaCl + H<sub>2</sub>O Is neutralization reaction. What other name can be given to this reaction?</p> <p style="text-align: center;">OR</p> <p>What is the chemical formula of "rust"?</p>	1
2	<p>What is the difference between slaked Lime and Lime water?</p>	1
3	<p>Ethane, with the molecular formula C<sub>2</sub>H<sub>6</sub> has</p> <p>(i) 6 Covalent bonds  (ii) 7 Covalent bonds  (iii) 8 Covalent bonds  (iv) 9 Covalent bonds</p>	1
4	<p>Which of the following phenomena contributes significantly to the Twinkling of Stars?</p> <p>(a) Atmospheric refraction  (b) Scattering of light  (c) Total internal reflection of light  (d) Dispersion of light</p>	1
5	<p>Why are danger signals light red in colour?</p> <p style="text-align: center;">OR</p> <p>Why do we see a rainbow in the sky only after rainfall?</p>	1

6	<p>Where should an object be placed in front of a convex lens to get areal image of the size of the object?</p> <p>(a) At the principal focus of the lens</p> <p>(b) At twice the focal length</p> <p>(c) At infinity</p> <p>(d) Between the optical centre of the lens and its principal focus.</p>	1
7	<p>How does the resistance of wire changes when- (a) The Length is tripled.</p> <p>(b) Its diameter is tripled.</p>	1

8	<p>What is the relation between magnetic field(B), Current (I) and Distance (r) in case of a straight current carrying conductor ?</p>	1
9	<p>The power rating of an appliance is 100W-250 V. What does it signify?</p>	1
10	<p>Which vein carries blood from Lungs to Heart?</p>	1
11	<p>Some organisms derive Nutrition from plants or animals without killing them. What are these organisms called? Write one example.</p>	1
12	<p>What isthe full form of CFCs and UNEP?</p>	1
13	<p>How does transpiration helps in upward transport of substances?</p>	1

For question numbers **14, 15** and **16** two statements are given- one labelled **Assertion (A)** and the other labelled **Reason (R)**. Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below:

- a) Both A and R are true, and R is correct explanation of the assertion.
- b) Both A and R are true, but R is not the correct explanation of assertion.
- c) A is true, but R is false.
- d) A is false, but R is true.

14	<b>Assertion:</b> When copper powder is heated in air, it turns black. <b>Reason:</b> Copper reacts with H <sub>2</sub> S gas of the air forming black CuS.	1
15	<b>Assertion:</b> IUCD are contraceptive devices made of copper, stainless steel, or plastic <b>Reason:</b> Copper –T prevents implantation of fertilised egg in uterus.	1

16	<b>Assertion:</b> A network of food chains existing together in an ecosystem is known as food web. <b>Reason:</b> An animal like Kite cannot be a part of Food web.	1
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**Answer Q. No 17 - 20 contain five sub-parts each. You are expected to answer any four sub parts in these questions.**

17	<p><u>Read the following and answer any <b>four</b> questions from 17 (i) to 17 (v)</u>The respiratory system in human beings consists of a passage way for the fresh air to flow from outside to the lungs and for the foul air to return from lungs to exterior. Lungs cannot contract and expand of their own. It is brought about by specific muscles. The muscles bring about alternate contraction and expansion of thoracic cavity where in the lungs lie. Breathing involves exchange of gases between the air in the alveoli and the blood in the capillary is (external respiration) and at the tissue level later between the blood in the capillaries and the gases in the tissues (internal respiration) by simple diffusion.</p>	1x4
(i)	<p>Which muscles bring the contraction and expansion of lungs</p> <p>a) Diaphragm muscles</p> <p>b) External intercostal muscles.</p> <p>c) Both (a) and (b)</p> <p>d) Cardiac muscles.</p>	1
(ii)	<p>What is the average rate of breathing in Normal Adult man? A)</p> <p>15 to 18 times per minute.</p> <p>B) 12 to 18 times per minute.</p> <p>C) 10 to 15 times per minute</p> <p>D) 25 to 28 times per minute</p>	1
(iii)	<p>State the function of Epiglottis</p> <p>A) Helps in muscle contraction</p> <p>B) Helps in breathing</p> <p>C) Checks the entry of food into glottis.</p> <p>D) Helps in circulation of air.</p>	1



18(i) ii)	Which of the following metals is the best conductor of electricity- A. copper                      B. Aluminium C. silver                        D. tungsten	1
18 (iv)	Which of the following statement is correct? a) Metals act as reducing agent and non metals acts as oxidising agents b) Metal acts as oxidising agent and non metals acts as reducing agents c) Metals and non metals do not as oxidising agents d) Metals and non metals do not act as reducing agents	1
18 (v)	What is the trend of metallic character in the modern periodic table- A. it increases across the period as well as down the group B. it decreases across the period as well as down the group C. decreases across the period but increases down the group D. increases across the period but decreases down the group	1
19	<u>Read the following and answer any <b>four</b> questions from 19 (i) to 19 (v).</u> An image formed in a convex mirror is always virtual, erect and smaller in size whatever be the position of the object. However in a concave mirror the image may be real /virtual: erect/inverted; smaller/ bigger in size than the size of the object .This would depend upon distance of the object from the mirror .The image of an object formed by a convex lens may be real/ virtual; erect/ inverted; smaller/ larger than the object. It would depend upon distance of the object from the lens. However the image of an object formed by a concave lens is always virtual, erect and smaller in size than the object.	

19 (i)	A concave mirror is used as a reflector a) Torches b) Search Lights c) headlights of motor vehicles d) all of the above	1
19 (ii)	In street lamps, the reflector used is a a) convex mirror b) Concave mirror c) Plane mirror d) None of these.	1
19 (iii)	Which of the mirrors has larger field of view- a) convex mirror b) Concave mirror c) Plane mirror d)All of the above have same field view.	1
19 (iv)	Real or Virtual image of an object formed by concave mirror depends on- a) Size of mirror b) Polish of Mirror c) Distance of Object from the Mirror. d) All of these.	1



19 (v)	<p>Where should an object be placed in front of a concave lens to obtain a virtual image of the object.</p> <p>A) At Infinity B) Principal focus C) Very close to the lens D) At any distance from lens.</p>	1
20	<p><u>Read the following and answer any 4 questions from 20 (i) to 20 (v).</u></p> <p><b>Magnetic Field lines-</b></p> <p>The space surrounding a magnet in which magnetic force is exerted, is called a magnetic field. A magnetic field is described by drawing the magnetic field lines. The magnetic field lines always begin from the N-pole of a magnet and end on the S-pole of the magnet inside the magnet. However, the direction</p>	1x4

	<p>of magnetic field lines is from the S-pole of the magnet to the N-pole of the magnet outside. Thus, the magnetic field lines are closed curves. A convenient method to describe the magnetic field around a magnet is to draw magnetic field lines around it. In order to do so, place a magnet on a cardboard sheet and gently Sprinkle some iron fillings uniformly over it. The Iron fillings are found to arrange themselves in a pattern. These curved paths along which the iron fillings arrange themselves due to force acting on them in the magnetic field of the bar magnet are called magnetic field lines.</p>	
20 (i)	<p>The magnetic field lines :</p> <p>a) intersect at right angles to one another b) intersect at an angle of <math>45^\circ</math> to each other c) do not intersect d) cross at an angle of <math>60^\circ</math> to one another</p>	1

20 (ii)	The magnetic field lines produced by a bar magnet (outside): a) originate from the south pole and end at its north pole b) originate from the north pole and end at its east pole c) originate from the north pole and end at its south pole d) originate from the south pole and end at its west pole	1
20 (iii)	The magnetic field is a quantity that has a) both direction and magnitude b) Only Direction c) Only Magnitude d) Neither direction nor magnitude	1
20 (iv)	How do magnetic field lines represent a non uniform magnetic field? a) The magnetic field lines are crowded where the magnetic field is a strong are far apart where the magnetic field is weak b) The magnetic field lines are far apart where the magnetic field is a strong are crowded where the magnetic field is weak c) Both (a) and (b)	1
	d) Do not have any effect of strength of field.	
20 (v)	Which polarity is developed on the face of the solenoid when a North Pole of a magnet is moving towards it - a) South Pole b) North Pole c) No polarity developed. d) Both (a) and (b)	1

### SECTION -B

21	<p>What is the function of digestive enzymes ?</p> <p>OR</p> <p>What would be the consequences of deficiency of haemoglobin in our body?</p>	2
22	<p>Draw a well labelled diagram of Stomata. List at least 2 functions..</p>	2
23	<p>Draw the electron dot structures for –</p> <p>a) H<sub>2</sub>O</p> <p>b) O<sub>2</sub></p> <p>OR</p> <p>Carbon has 4 electrons in its valence shell. Which type of compounds can be formed by carbon atoms and why?</p>	2

24

The following observations were made by a student on treating 4 metals L,M,N,O with the given salt solutions

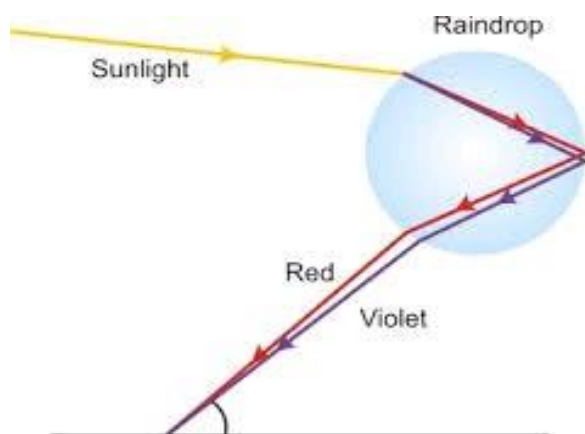
2

S.NO	MgSO <sub>4</sub>	Zn(NO <sub>3</sub> ) <sub>2</sub>	CaSO <sub>4</sub>	Na <sub>2</sub> SO <sub>4</sub>
L	No reaction	Reaction occurs	Reaction occurs	No reaction
M	Reaction occurs	Reaction occurs	Reaction occurs	Reaction occurs
N	No reaction	Reaction occurs	No reaction	No reaction
O	No reaction	No reaction	No reaction	No reaction

Based on above observations:

- (a) Arrange the above given samples in the increasing order of reactivity.  
 (b) Write the chemical formulae of the products formed when oxygen reacts with CuSO<sub>4</sub>.

25



2

How rainbows are formed? Name the phenomenon associated with it.

26	Why are coils of electric toaster and electric irons made of an alloy rather than a pure metal? Give atleast 2 valid reasons.	2
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<b>Section C</b>
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27	<p>How is the sex of the child determined in human beings?</p> <p style="text-align: center;"><b>OR</b></p> <p>Study the given data and answer the questions that follow.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #cccccc;"> <th style="width: 33%;">Parental plants cross fertilised and seeds collected</th> <th style="width: 33%;">F<sub>1</sub> (First generation offspring)</th> <th style="width: 33%;">F<sub>2</sub> (Offspring of self pollination of F<sub>s</sub>)</th> </tr> </thead> <tbody> <tr> <td>Male parents always bore red flowers  Female parents always had white flowers.</td> <td>330 seeds sown and observed  All 330 seeds gave red flowers</td> <td>Out of 44 seeds, 33 seeds gave plants with red flowers and 11 seeds gave plants with white flowers.</td> </tr> </tbody> </table> <p>i) What is the term used for this type of cross? ii) What does the data of column F<sub>1</sub> indicate? iii) Express the genotype of the (a) Parents and (b) F<sub>1</sub> progeny and (c) F<sub>2</sub> progeny</p>	Parental plants cross fertilised and seeds collected	F <sub>1</sub> (First generation offspring)	F <sub>2</sub> (Offspring of self pollination of F <sub>s</sub> )	Male parents always bore red flowers  Female parents always had white flowers.	330 seeds sown and observed  All 330 seeds gave red flowers	Out of 44 seeds, 33 seeds gave plants with red flowers and 11 seeds gave plants with white flowers.	3
Parental plants cross fertilised and seeds collected	F <sub>1</sub> (First generation offspring)	F <sub>2</sub> (Offspring of self pollination of F <sub>s</sub> )						
Male parents always bore red flowers  Female parents always had white flowers.	330 seeds sown and observed  All 330 seeds gave red flowers	Out of 44 seeds, 33 seeds gave plants with red flowers and 11 seeds gave plants with white flowers.						
28	How is ozone formed in the higher level of atmosphere? "Damage to ozone layer is a cause of concern" Justify this statement	3						

29	<p>Draw the diagram of excretory unit of human kidney and label the following parts given below :</p> <p>(i) Bowman's capsule (ii) Glomerulus (iii) Collecting duct (iv) Renal artery</p>	3
30	<p>What is corrosion? State the conditions necessary for rusting of iron. How is rusting prevented?</p>	3

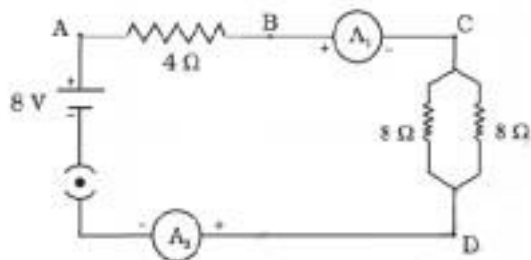
31	<p>The electronic configuration of an element X is:</p> <p style="text-align: center;">K    L    M</p> <p style="text-align: center;">2    8    6</p> <p>(i) What is the group number of element X in the periodic table?</p> <p>(ii) What is the period number of element X in the periodic table?</p> <p>(iii) What is the number of valence electrons in an atom X and its valency?</p>	3
32	<p>Explain the formation of MgO with the help of electron dot structure (At no. Of Mg=12, O=8)</p> <p>(a) Name the ions present in this compound.</p> <p>(b) Why do ionic compounds have higher Melting point.</p>	3
33	<p>An object 5.0 cm in length is placed at a distance of 20 cm in front of a convex mirror of radius of curvature 30 cm. Find the position of the image ,its nature and size.</p>	3
<b>Section D</b>		
34	<p>Fill the missing data in the following table :</p>	

S.No	Name of Salt	Formula of Salt	Constituting	
			<u>Base</u>	<u>Acid</u>
1	Ammonium chloride	NH <sub>4</sub> Cl	NH <sub>4</sub> OH	
2	Copper sulphate			H <sub>2</sub> SO <sub>4</sub>
3	Sodium Chloride		NaOH	
4	Magnesium Nitrate	MgNO <sub>3</sub>		
5	Potassium Sulphate			
35	(i) Draw a neat diagram of the human male reproductive system and label the following parts : a) Scrotum b) Seminal vesicles. c) Prostate Gland. d) Vas deferens (ii) What happens when the egg is not fertilized?			5

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Find out the following in the electric circuit given in Figure

5



- Effective resistance of two  $8\ \Omega$  resistors in the combination
- Current flowing through  $4\ \Omega$  resistor
- Potential difference across  $4\ \Omega$  resistance
- Power dissipated in  $4\ \Omega$  resistor
- Difference in ammeter readings, if any.

**OR**

Show how would you connect three resistors, each of resistance 6 ohms , So that the combination has a resistance of –

- 18 Ohms
- 9 Ohms
- 4 Ohms
- 2 Ohms