Deeksha

Practice Paper -1
2020-21
Class-X
Science (086)

Time: 3 hours **Maximum Marks: 80**

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 number 1 to 20- all questions and parts there of are of one mark each. These questions contain multiple choice questions(MCQs),very short answer questions and assertion-reason type questions. Answers to these questions should be given in one word or one sentence.
iii. Section-B- question number 21 to 26- are short answer type questions carrying 2 marks each. Answers to these questions should in the range of 30 to 50 words.
iv. Section-C-question number 27-33- are short answer type questions carrying 3 marks each. Answer to these questions should be in the range of 50 to 80 words.
v. Section-D-question number 34 to 36 –are long answer type questions carrying 5 marks. Answer to this question 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 alternative in such questions.
vii. Wherever necessary, neat and properly labelled diagrams should be drawn.

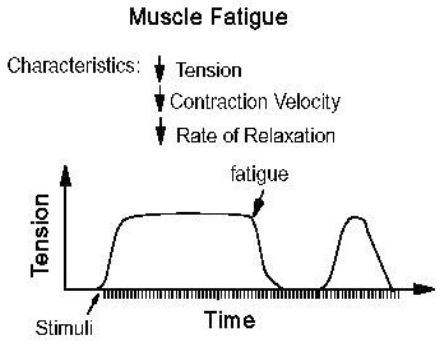
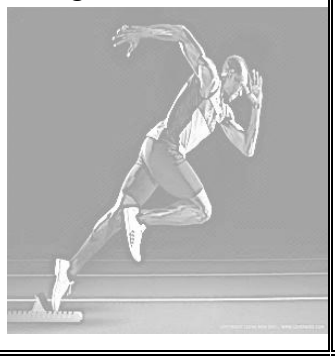
Section-A		
No.	Questions	Marks
1.	Write one observation when Magnesium ribbon is burnt in air. **OR** In a conical flask when dilute sulphuric acid is poured on zinc granules. On touching the flask ,do you feel any change in its temperature?	1
2.	Write the chemical name and chemical formula of baking soda.	1
3.	Carbon compounds have a. High boiling point but low melting point . b. High melting but low boiling point. c. Low melting and boiling point d. High melting and boiling point	1
4.	Which colour of white light travel (a) fastest (b) slowest in glass prism?	1

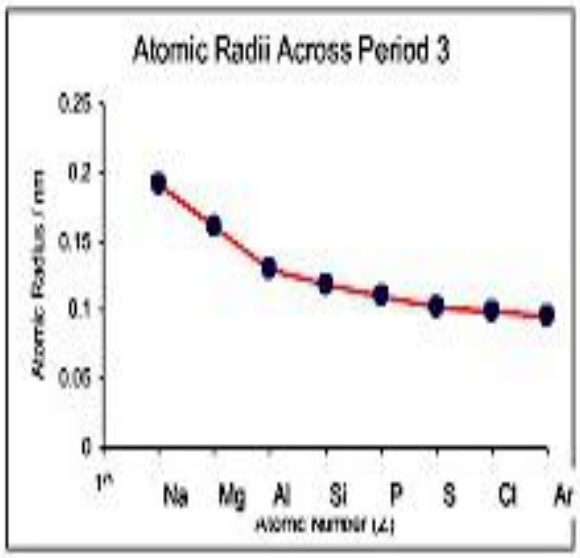
5.	Which kind of mirrors are used in the headlights of a motor-car and why?	1
6.	Why does a ray of light bend when it travels from one medium into another? **OR** In a concave mirror where should we keep the object so that image formed will be real , inverted and enlarged ?	1
7.	Name the physical quantities which are indicated by the direction of thumb and forefinger in the Fleming's right hand rule?	1
8.	A current carrying solenoid coil is suspended freely . in which direction will it settle and why?	1
9.	Give symbol of (i) an electric cell (ii) battery of cells. **OR** What will be the amount of heat (H) produced in a resistor (R) carrying a current (I) and having a potential difference (V) across it in time (t)?	1
10.	Write one difference between artery and vein.	1
11.	Write the balanced chemical equation for the process of photosynthesis. **OR** When do the desert plants take up carbon dioxide and perform photosynthesis?	1
12.	Rearrange the following according to their ascending trophic level in a food chain Hawk, Grass, Snake, Rabbit **OR** Why are bacteria and fungi called decomposers?	1
13.	Name any one enzyme of our digestive system and write its function.	1

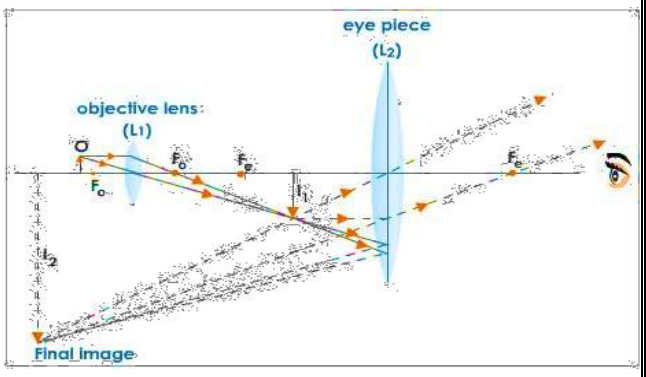
For question number **14, 15** and **16**, two statements are given- one labeled **Assertion (A)** and the other labeled **Reason (R).** Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below:
a) Both A and R are true, and R is correct explanation of the assertion.
b) Both A and R are true, but R is not the correct explanation of the assertion.
c) A is true, but R is false.
d) A is false, but R is true.

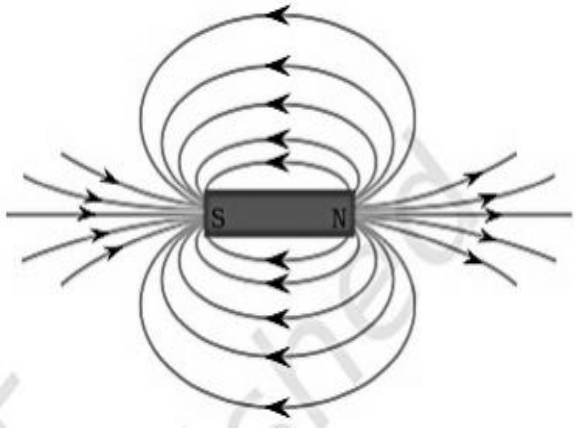
14.	**Assertion :** Respiration is an exothermic reaction. **Reason :** Respiration is a process in which glucose combines with oxygen and decompose to carbon dioxide and water .this reaction also release some energy .	1

15.	**Attempt any one from 15(I) and 15(II).** **(I) Assertion:** Frogs mostly occupy the second trophic level in food chains. **Reason**: Frogs mostly feed on insects which depend on plants **.** **OR** **(II) Assertion:** In the food chain third trophic level is occupied by Carnivores . **Reason:** Some of the carnivores are secondary consumers **.**	1
16.	**Assertion :** The principle of segregation given by Mendel is the principle of purity of gametes. **Reason**: Gametes are pure for a character.	1
Answer Q.No. 17-20 contain five (5) sub-parts each . You are expected to answer any **FOUR** sub-parts in these questions.		
17.	**Read the following and answer any FOUR questions from 17 (i) to 17 (v)** The food material taken in during the process of nutrition is used in cells to provide energy for various life processes. Diverse organisms do this in different ways – some use oxygen to break-down glucose completely, some use other pathways that do not involve oxygen.	1 x4
17-i	Name the two ways in which glucose is oxidised to provide energy in various organisms. a. Aerobic respiration and Anaerobic respiration b. respiration and breathing c. fermentation and breathing d. none of the above.	
17-ii	The characteristic processes observed in anaerobic respiration are A. presence of oxygen_ B. release of carbon dioxide_ C. release of energy D. release of lactic acid a. A and B only b. A,B,C only c. B, C, D only d. D only	

17-iii	Fatigue in muscles occurs due to a. aerobic respiration b. anaerobic respiration c. anaerobic fermentation d. breathing  	
17-iv	Break- down of pyruvate using oxygen takes place in the a. Mitochondria b. Cytoplasm c. Chloroplast d. Golgi apparatus	
17-v	In humans, however, we respire anaerobically when the heart and lungs cannot work fast enough to provide enough oxygen around the body to break down the glucose. This causes formation of: a. Ethanol b. Carbon dioxide c. Lactic acid d. All the above 	
18.	**Read the following and answer any FOUR questions from 18 (i) to 18 (v)** The Valency of an element is determined by the number of valence electrons present in the outermost shell of its atom and Atomic size refers to the radius of an atom. The atomic size is the distance between the centre of the nucleus and the outermost shell of an isolated atom.	1x4
18-i	What is the valency of magnesium with atomic number 12 and sulphur with atomic number 16? a. 2 and 2 b. 2 and 6 c. 2 and 4 d. 6 and 2	
18-ii	The atomic numbers of elements of a period are given below; elements: Li, Be, B, C, N atomic number: 3, 4, 5, 6, 7	

	The valency of an element is determined by a. the number of valence electrons present in the outermost shell of the atom . b. the number of electrons present in the atom c. the number of valence electrons present in the first two shells d. the number of valence electrons present in the nucleus.	
18-iii	On going from top to bottom in a group the valency a. Increases b. Decreases c. Remains the same d. First increases then decreases	
18-iv	Atomic radii of the elements of the second period are given below: elements: B | Be | O | Li | C atomic radius (pm): 88 | 111 | 66 | 152 | 77 Arrange them in increasing order of their atomic radii. a. O < C < B < Be < Li b. C < O < Be < Li < B c. C < Be< B < Li < O d. O < C < Be < B < Li	
18-v	This graph represents that a. atomic radii increases when we move from top to bottom b. atomic radii increases when we move from left to right . c. atomic radii decreases when we move from top to bottom. d. atomic radii decreases when we move from left to right. 	

19.	**Read the following and answer any FOUR questions from 19 (i) to 19 (v)** Compound microscope consists of two lens systems: one eyepiece toward the eye and one toward the object-side objective. The eyepiece acts as a magnifying glass and magnifies the intermediate image of the objective. The objective lens is a convex lens of short focal length with typical magnification from 5× to 100×. The eyepiece, is a convex lens of longer focal length. In the given ray diagram of Compound microscope;The objective lens forms a real, inverted and magnified image (I_1) of the object. The image I_1 acts as an object for the eye piece. The eyepiece acts like a magnifying glass and forms a virtual, erect and magnified image of the object.  	1x4
19-i	To make a compound microscope what kind of lenses are required? a. Concave lenses b. Convex lenses c. Plano-concave lenses d. Concave and convex both	
19-ii	The objective lens has - a. Short focal length and high power . b. Short focal length and low power . c. Long focal length and high power . d. long focal length and low power .	
19-iii	The image formed by objective lens will be- a. Real , inverted and magnified b. Virtual , erect and magnified c. Real ,erect and of the same size d. Virtual , erect and small	
19-iv	The object for the eyepiece would be- a. The image I_1 acts as an object for the eye piece. b. The image I_2 acts as an object for the eye piece. c. The object d. None of the above	
19-v	The eyepiece acts like a magnifying glass and forms a – a. Virtual, erect and magnified image of the object. b. Virtual, inverted and magnified image of the object. c. Real, erect and magnified image of the object. d. Real, erect and magnified image of the object.	

20	Read the following and answer any four questions from 20 (i) to 20 (v) Magnetic field is a quantity that has both direction and magnitude. The direction of the magnetic field is taken to be the direction in which a north pole of the compass needle moves inside it. Therefore it is taken by convention that the field lines emerge from north pole and merge at the south pole. Inside the magnet, the direction of field lines is from its south pole to its north pole. Thus the magnetic field lines are closed curves.  	1 x4
20-i	Magnetic field is – a. a region around a magnetic material within which the force of magnetism acts. b. The area around a magnet in which there is magnetic force. c. The space or region around a magnet within which its influence can be felt by another magnet. d. All the above	
20-ii	No two field-lines are found to cross each other. If they did, it would mean that at the point of intersection – a. the compass needle would point towards two directions, which is not possible. b. the compass needle would point towards two direction which is possible. c. the compass needle would point no where. d. the compass needle would point in all the directions .	
20-iii	The relative strength of the magnetic field is – A. the degree of closeness of the field lines B. the degree of farness of the field lines. C. Proportional to the number of lines per unit area perpendicular to the lines. a. Only A b. A and B both c. A,B and C d. A and C both	
20-iv	The magnetic field is strongest at the- a. At the north pole b. At the south pole c. At both the poles d. At the centre of magnet.	

<table>
<tr><td>20-v</td><td>Inside the magnet, the direction of field lines is from its-

a. south pole to its north pole.
b. north pole to its south pole.
c. All around the magnet
d. All the above</td><td></td></tr>
<tr><td colspan="3">Section –B</td></tr>
<tr><td>21</td><td>Draw a diagram of human excretory system and label kidneys, ureters on it.

OR

In mammals and birds why is it necessary to separate oxygenated and de-oxygenated blood?</td><td>2</td></tr>
<tr><td>22</td><td>a) What is the role of HCl in our stomach?

b) What is emulsification of fats ?</td><td>2</td></tr>
<tr><td>23.</td><td>a) Why are covalent compounds generally poor conductors of electricity?

b) The element carbon forms a very large number of compounds.

OR

Two carbon atoms cannot be linked to each other by more than three covalent bonds why?</td><td>2</td></tr>
<tr><td>24.</td><td>State two reasons for the following facts-

a) Sulphur is a non-metal
b) (ii)Magnesium is a metal

One of the reasons must be supported with a chemical equation.</td><td>2</td></tr>
<tr><td>25.</td><td>Why does a ray of light bend towards the base when it passes through a glass prism?</td><td>2</td></tr>
<tr><td>26.</td><td>The values of current I flowing in a given resistor for the corresponding values of potential difference V across the resistor are as given below;

<table><tr><td>I (ampere)</td><td>0.5</td><td>1.0</td><td>2.0</td><td>3.0</td><td>4.0</td></tr><tr><td>V (volts)</td><td>1.6</td><td>3.4</td><td>6.7</td><td>10.2</td><td>13.2</td></tr></table>
Plot a graph between V and I and also calculate the resistance of the resistor.</td><td>2</td></tr>
<tr><td colspan="3">Section –C</td></tr>
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27.

Outline a project which aims to find the dominant coat colour in dogs.
(Take male dog with black coat colour and female dog with white coat colour or vice versa).

OR

a) In humans if gene B gives brown eyes and gene b gives Blue Eyes. What will be the colour of the persons having the following combination of geans-

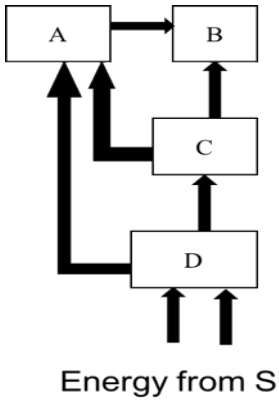
i. Bb ii. Bb iii. BB

b). Explain which characteristic trait is inherited in the above question ?

3

28.

We already know that a food chain contains different organisms at different trophic levels in a typical ecosystem. In the diagram of energy flow in an ecosystem, given below.
identify the secondary consumers and explain why did you choose it.



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29.

Observe the following table carefully and match the components of part –I with part-II of the table. Write them in complete sentence.

S.N.	Part-I	S.N.	Part-II
A.	Unicellular organism	I.	Transpiration
B.	Plants	II.	Urination
C.	Human being	III.	Diffusion

3

30.

State reason for the following –

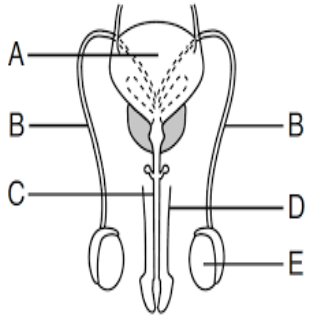
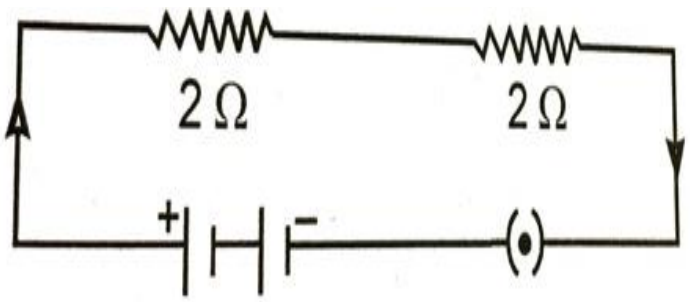
a) Small amount of acid is added to water during electrolysis of water.

b) when ammonium chloride is dissolved in water in a test tube ,the test tube becomes cold.

c) Why do we store silver chloride in dark bottle?

3

31.	Two elements P and Q belong to the 3rd period of the modern periodic table and are in Group-1 and Group -2 respectively. Compare their following characteristics in tabular form i. The number of electrons in their atom ii. The size of their atoms iii. The metallic characters iv. Their tendencies to loose electrons v. The formula of their oxides vi. The formula of their halides	3
32.	a) Explain the formation of Magnesium chloride with the help of electron dot structure. (At .number : Mg = 12 ; Cl= 17) b) A non metal X exists in two different forms Y and Z . Y is the hardest natural substance while Z is good conductor of electricity. Identify the nonmetal X.	3
33.	a) State the condition under which a light ray passes undeviated through a lens. b) For the same angle of incidence of 45^0,the angle of refraction in three transparent media A,B,C are 25^0 , 30^0 and 35^0respectively. In which medium is the speed of light minimum and in which medium it is maximum? c) What are the two factors on which lateral displacement of an emergent ray from a glass slab depends ?	3
	Section-D	
34.	a) What pH do you expect for the following salt solutions and why ? NaCl , $CuSO_4$, and Na_2CO_3 b) Alcohol and glucose also contain hydrogen but do not conduct electricity. Why? **OR** a) Why is tartaric acid added into baking soda to get baking powder? b) Why does tooth decay start when the pH of the mouth is lower than 5.5? c) How would you say that copper sulphate crystals contain water of crystallisation ?	5
35.	a) How does binary fission differ from multiple fission ? (write 3 differences) b) A stock contains 56 chromosomes and scion contain 24 chromosomes . How many chromosomes are present in root and egg cells of the resultant plants respectively ?	

	OR a) Give reason: i. Placenta is extremely essential for foetal development. ii. Blocking of Vas deferens prevents pregnancy. iii. Blocking of fallopian tube prevents pregnancy. b) Name the parts labelled as A,B,C and E .and also write the function of part E.  	5
36.	a) When do you say that the resistance of the wire is 1Ω. b) What happens to the resultant resistance of a conductor when the length of the conductor is reduced to half of its original length? c) What is the effective resistance in the given circuit?  d) Draw a schematic diagram of an electric circuit consisting of a battery of two cells each of 1.5 V , 5Ω , 10Ω and 15Ω resistors and a plug key , all connected in series.	5