

## Sample Question Paper 2017-18

### Science Class – X

Time allowed: 03 Hours

Maximum Marks: 80

#### General Instructions:

- (i) The question paper comprises two sections, A and B. You are to attempt both the sections.
- (ii) All questions are compulsory.
- (iii) All questions of Section-A and B are to be attempted separately.
- (iv) There is an internal choice in three questions of three marks each, two questions of five marks each and one question of two marks each.
- (v) Question numbers 1 and 2 in Section-A are one mark question. They are to be answered in one word or in one sentence.
- (vi) Question numbers 3 to 5 in Section- A are two marks questions. These are to be answered in 30 words each.
- (vii) Question numbers 6 to 15 in Section-A are three marks questions. These are to be answered in about 50 words each.
- (viii) Question numbers 16 to 21 in Section-A are 5 marks questions. These are to be answered in 70 words each.
- (ix) Question numbers 22 to 27 in Section- B are based on practical skills. Each question is a two marks question. These are to be answered in brief.

SECTION – A		
1	Give an example of a flower which contains both stamens and carpels.	1
2	Mention any one point of difference between Pepsin and Trypsin.	1
3.	An element "X" has mass number 35 and the number of neutrons, is 18. Identify the group number and period of "X".	2
4.	An object of height 1.2m is placed before a concave mirror of focal length 20cm so that a real image is formed at a distance of 60cm from it. Find the position of an object. What will be the height of the image formed?	2
5.	Why is there a need to harness non-conventional sources of energy? Give two main reasons.	2
6	Name the electric device that converts mechanical energy into electrical energy. Draw the labelled diagram and explain the principle involved in this device. OR i) What is the function of earth wire in electrical instruments? ii) Explain what is short circuiting an electric supply. iii) What is the usual current rating of the fuse wire in the line to feed (a) Lights and fans? (b) Appliances of 2kW or more power?	3
7	Draw a circuit diagram of an electric circuit containing a cell, a key , an ammeter , a resistor of $4\Omega$ in series with a combination of two resistors ( $8\Omega$ each) in parallel and a voltmeter across parallel combination. Each of them dissipate maximum energy and can withstand a maximum power of 16W without melting. Find the maximum current that can flow through the three resistors.	3
8	In the electrolysis of water, a) Name the gas collected at anode and cathode b) Why is the volume of gas collected at one electrode double than the other? c) What would happen if dil $H_2SO_4$ is not added to water?	3
9	Differentiate between the arrangement of elements in Mendeleev's periodic table and Modern periodic table.	3

10	<p>Explain the ways in which glucose is broken down in absence of oxygen.</p> <p style="text-align: center;">OR</p> <p>List three differences between arteries and veins.</p>	3
11	How do Mendel's experiments show that traits may be dominant or recessive?	3
12	<p>Rohit focused the image of a candle flame on a white screen using a convex lens. He noted down the position of the candle , screen and lens as under :</p> <p>Position of candle = 26.0 cm          Position of convex lens = 50.0 cm          Position of screen = 74.0 cm</p> <p>i) What is the focal length of the convex lens?          ii) Where will the image be formed if he shifts the candle towards the lens at a position of 38 cm?          iii) Draw a ray diagram to show the formation of the image in case (ii) as said above?</p>	3
13	<p>"pH has a great importance in our daily life" explain by giving three examples.</p> <p style="text-align: center;">OR</p> <p>A compound which is prepared from gypsum has the property of hardening when mixed with a proper quantity of water. Identify the compound and write its chemical formula. Write the chemical equation for its preparation. Mention any one use of the compound.</p>	3
14	Why are fossils considered important in the study of evolution? Explain two ways by which age of fossils can be estimated.	3
15	<p>Our government launches campaigns to provide information about AIDS prevention, testing and treatment by putting posters, conducting radio shows and using other agencies of advertisements.</p> <p>a) To which category of diseases AIDS belong? Name its causative organism.          b) Which kind of value is government trying to develop in the citizens by conducting the above kind of programs.</p>	3
16	<p>With the help of a labelled circuit diagram wire describe an activity to illustrate the pattern of the magnetic field lines around a straight current carrying long conducting wire .</p> <p>i) Name the rule that is used to find the direction of magnetic field associated with a current carrying conductor.          ii) Is there a similar magnetic field produced around a thin beam of moving (a) alpha particles and (b) neutrons? Justify your answer.</p>	5
17	<p>You are given balls and stick model of six carbon atoms and fourteen hydrogen atoms and sufficient number of sticks. In how many ways one can join the models of six carbon atoms and fourteen hydrogen atoms to form different molecules of <math>C_6H_{14}</math>.</p> <p style="text-align: center;">OR</p> <p>Draw the structural formulae of all the possible isomers of the compound with the molecular formula <math>C_3H_6O</math> and also give their electron dot structures.</p>	5
18	<p>a)</p> <p>i) Draw a neat diagram of human brain and          ii) Label Medulla and Cerebellum          iii) Write the functions of the above mentioned parts</p> <p>b) "Both overproduction and underproduction of Growth hormone leads to disorders in the body." Explain</p>	5



	Plot a graph between V and I and calculate the resistance of the resistor.  OR In a given ammeter, a student sees that needle indicates 17 divisions in ammeter while performing an experiment to verify Ohm's law. If ammeter has 10 divisions between 0 and 0.5A, then what is the value corresponding to 17 divisions?	
27	Draw a path of light ray passing through a prism. Label angle of incidence and angle of deviation in the ray diagram.	2