

**Sample Question Paper 2020 – 10
Science - Class – X****Time allowed: 03 Hours****Maximum Marks: 80****General Instructions:**

- I. The Question paper comprises of three Sections A, B and C. You have to attempt all the sections.
- II. All Questions are compulsory but some questions have internal choice.
- III. Question number 1 to 20 in Section - A are one - mark questions. Question number 1 to 10 are multiple choice questions. Each has four choices (a), (b), (c) and (d) out of which only one is correct. Question number 11 to 20 are very short answers (VSA) and Assertion-Reasoning. These are to be answered in brief.
- IV. Question number 21 to 30 in Section - B are three marks questions. These are to be answered in about 50 words each.

SECTION - A

1. Placement of another identical prism in an inverted position with respect to the first and allowing the colours of spectrum to pass through it will
 - (a) change the spectrum into white light.
 - (b) change the spectrum into a black band.
 - (c) keep the spectrum as before.
 - (d) split into more colours.
2. Widening of blood vessels is known as:
 - (a) Vasoconstriction
 - (b) Vasodilation
 - (c) Increased permeability
 - (d) None of these
3. Power rating of an electric appliance indicates:
 - (a) brightness of the light
 - (b) amount of heat evolved
 - (c) quality of the appliance
 - (d) None of the above
4. What does isomerism explain?
 - (a) A difference in molecular formulae.
 - (b) A difference in molecular weights.
 - (c) A difference in chemical properties and structural formulae.
 - (d) A difference in molecular composition.

5. Which of the following would stop evolution by natural selection from occurring?
 (a) If humans became extinct because of a disease epidemic.
 (b) If a thermonuclear war killed most living organisms and changed the environment drastically.
 (c) If ozone depletion led to increased ultraviolet radiation, which caused many new mutations.
 (d) If all individuals in a population were genetically identical, and there was no genetic recombination, sexual reproduction, or mutation.
6. The unit of current is
 (a) ampere (b) watt (c) volt (d) coulomb

7. Match column-I with column-II and select the correct answer using the codes:

Column-I	Column-II
A. Brass	P. Homogeneous mixture of copper and zinc
B. Bronze	Q. Homogeneous mixture of iron and carbon
C. Steel	R. Homogeneous mixture of copper and tin
D. Solder	S. Homogeneous mixture of tin and lead
E. German silver	T. Homogeneous mixture of copper, zinc and nickel.

(a) A – P; B – R; C – Q; D – T; E – S (b) A – P; B – R; C – S; D – Q; E – T
 (c) A – P; B – R; C – Q; D – S; E – T (d) A – R; B – P; C – Q; D – S; E – T

8. On the basis of following features, identify the correct option:
 A. The reaction occurs during corrosion.
 B. This reaction occurs during respiration.
 (a) Combustion reaction (b) Redox reaction
 (c) Oxidation reaction (d) Exothermic reaction
9. Which of the following is not a method of safe disposal of waste?
 (a) Land filling.
 (b) Surgery equipment to be thrown away from cities to fields.
 (c) Compositing (digest aerobically by microbial action and converted to humus).
 (d) Drainage of waste in some large water body like sea.
10. Which of the following does not belong to the group formed by the others?
 (a) Generator (b) Dynamo (c) Motor (d) Windmill
11. Name the chemical reagent which oxidises ethanol to ethanoic acid?
 12. For what position convex lens form real, inverted and diminished image?
 13. What are the two types of nucleic acid?

OR

In which type of nucleic acid, uracil is present instead of thymine?

14. Name two properties of elements which increases along a period in a periodic table.

OR

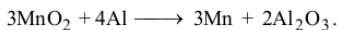
The atomic number of an element is 16. Identify the group and the period in which this element will be placed.

15. Name the reproductive parts of a flower?
 16. What happens to the resistance of a wire if its area of cross-section is doubled?

OR

Keeping the potential difference constant, the resistance of a circuit is doubled, how does the current changes?

17. In the following reaction, which is more reactive Mn or Al and why?



DIRECTIONS : Each of these questions contains an Assertion followed by Reason. Read them carefully and answer the question on the basis of following options. You have to select the one that best describes the two statements.

- (a) If both Assertion and Reason are correct and Reason is the correct explanation of Assertion.
- (b) If both Assertion and Reason are correct, but Reason is not the correct explanation of Assertion.
- (c) If Assertion is correct but Reason is incorrect.
- (d) If Assertion is incorrect but Reason is correct.

18. Assertion: In an ecosystem, the function of producers is to convert organic compounds into inorganic compounds.

Reason: Green plants transduce solar energy.

19. Assertion: Copper cannot be used as fuse.

Reason: As copper has low resistance and high melting point.

20. Assertion: When a battery is short-circuited, the terminal voltage is zero.

Reason: In the situation of a short-circuit, the current is zero

SECTION - B

21. A copper wire has a diameter of 0.5 mm and resistivity of 16.2 ohm meter. How much of this wire would be required to make a 10 ohm coil?

22. What is OTE? How it generates electricity?

23. An element A from group 1 reacts with elements Y from group 17 of the periodic table.

- (a) What is the formula of the compound formed?
- (b) What is the nature of bond in the compound formed?

24. Differentiate between:

- (a) Strong acid and Weak acid.
- (b) Strong acid and Concentrated acid.

25. What are different types of blood vessels present in human body?

26. What is the relationship between:

- (a) Chromosomes and Genes
- (b) Genes and DNA

OR

What are the different ways in which individuals with a particular trait may increase in a population ?

27. Light enters from air to glass having refractive index 1.50. What is the speed of light in the glass ? The speed of light in vacuum is 3×10^8 m / sec.

OR

A convex lens forms a real and inverted image of a needle at a distance of 50 cm from it. Where is the needle placed in front of the convex lens if the image is equal to the size of the object? Also, find the power of the lens.

28. Give chemical equation to show the changes that occur when green coloured ferrous sulphate crystals are heated.

OR

In the following reaction between H_2S and SO_2 :



Identify:

- (a) The substance oxidised
- (b) The substance reduced
- (c) Type of reaction
- (d) Can we predict whether above reaction is exothermic or endothermic?

29. How do Mendel's experiments show that traits may be dominant or recessive?

30. How is oxygen and carbon dioxide transported in human beings?

SECTION - C

31. Draw a labelled diagram of an electric motor. Explain its principle and working. What is the function of a split ring in an electric motor?

OR

Explain the underlying principle and working of an electric generator by drawing a labelled diagram. What is the function of brushes?

32. Name the following:
- A metal that catches fire in oxygen gas of air.
 - A metal that forms two types of oxides and rusts in moisture; write their formulae also.
 - A metal used in hot water systems.
 - A metal used in long distance cables wires.
 - A metal added to gold to harden it.

OR

In the following situations, a reaction may or may not take place. If it does, write the balanced molecular and total ionic equations illustrating the reaction. Assume all involve aqueous solutions.

- Some iron nails are placed in a CuCl_2 solution.
 - Silver coins are dropped in a hydrochloric acid solution.
 - A copper wire is placed in a $\text{Pb}(\text{NO}_3)_2$ solution.
 - Zinc strips are placed in a $\text{Cr}(\text{NO}_3)_3$ solution.
33. Compare and contrast nervous and hormonal mechanisms for control and coordination in animals.

OR

Draw a neat and labelled diagram of brain and describe its functions.

34. Make a diagram to show how hypermetropia is corrected. The near point of a hypermetropic eye is 1m. What is the power of lens required to correct this defect? Assume that the near point of the normal eye is 25 cm.
35. Differentiate between metals and non-metals on the basis of physical properties.
36. What are the three R's to save the environment? Explain with one example of each.