

Sample Question Paper 2020 – 6
Science - Class – X

Time allowed: 03 Hours

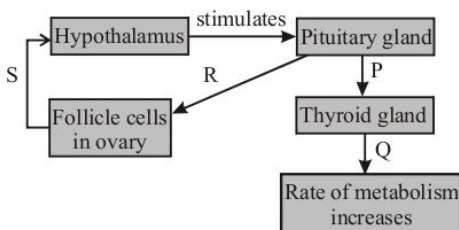
Maximum Marks: 80

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. Fuse wire has a _____ melting point and is made of an alloy of _____ and _____. If the current in a circuit rises too high, the fuse wire _____.
 (a) low, lead, tin, melts (b) high, lead, tin, melts
 (c) low, lead, tungsten, melts (d) low, lead, tungsten, melts
2. Which of the following oxide is neutral?
 (a) NO₂ (b) MgO (c) N₂O (d) None of these
3. Figure below shows negative feedback mechanism in regulating the secretion of hormones by specific endocrine glands. Identify hormones P, Q, R and S from the given option.



	P	Q	R	S
(a)	FSH	Thyroxine	TSH	Progesterone
(b)	TSH	Thyroxine	FSH	Oestrogen
(c)	Thyroxine	FSH	TSH	Progesterone
(d)	Oestrogen	TSH	FSH	Thyroxine

4. All the following are male reproductive parts except:
 (a) Prostrate gland (b) Penis (c) Testes (d) Vagina
5. Which of the following statements does not represent Ohm's law?
 (a) Current / Potential difference = Constant
 (b) Potential difference / Current = Constant
 (c) Potential difference = Current × Resistance
 (d) Current = Resistance × Potential difference
6. On the basis of following features identify correct option:
 A. All elements of this group are gases.
 B. All elements are chemically inert under ordinary conditions.
 (a) Group 18 (b) Group 17 (c) Group 14 (d) Group 16
7. Which of the following are incorrectly matched?

	Organ	Hormone
A.	Thyroid	Glucagon
B.	Thymus	Thymosin
C.	Adrenal	Cortisone
D.	Pancreas	Thyroxine

- (a) A and D (b) A and C (c) A, B and C (d) None of these
8. A small piece of a substance gets repelled when it is brought near a powerful magnet. The substance can be:
 (a) Diamagnetic (b) Paramagnetic (c) Ferromagnetic (d) Non-magnetic
9. Which of the following is a decomposition reaction?
 (a) $2\text{HgO} \xrightarrow{\text{Heat}} 2\text{Hg} + \text{O}_2$ (b) $\text{CaCO}_3 \xrightarrow{\text{Heat}} \text{CaO} + \text{CO}_2$
 (c) $2\text{H}_2\text{O} \xrightarrow{\text{Electrolysis}} \text{H}_2 + \text{O}_2$ (d) All of these
10. Maintenance of ecosystem does not depend upon:
 (a) Material cycles (b) Food chains and webs
 (c) Energy flow (d) Change in atmosphere
11. Why are the elements of group 18 called zero valent?
12. Mention the part of the brain which controls the involuntary action like blood pressure, salivation etc.
13. Name the component of white light that deviates the least and the most while passing through a prism.

OR

What is meant by dispersion of light?

14. What does the arrow indicate in a chemical reaction pointing upwards?

OR

Write the chemical formula of ammonium dichromate.

15. Which defect of the eye can be rectified by using cylindrical lens?
 16. What are the two components of peripheral nervous system?

OR

Name the hormone in humans which regulates carbohydrate, protein and fat metabolism in the body.
 Which gland secrete this hormone?

17. Name the products formed when ethanoic acid reacts with a sodium hydrogen carbonate.

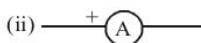
DIRECTIONS : Each of these questions contains an Assertion followed by Reason. Read them carefully and answer the question on the basis of following options. You have to select the one that best describes the two statements.

- (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:** A solenoid tends to expand, when a current passes through it.
Reason: Two straight parallel metallic wires carrying current in same direction attract each other.
19. **Assertion:** Blood of insects is colourless.
Reason: The blood of insect does not play any role in transport of oxygen.
20. **Assertion:** Diamond and graphite are allotropes of carbon.
Reason: Some elements can have similar structural forms and same physical state. These forms are called allotropes.

SECTION - B

21. (a) What is meant by the statement: The potential difference between two points is 1 volt?
 (b) What do the following symbols represent in a circuit? Write one function of each.



22. How is electricity generated by a hydroelectric power plant?
23. (a) A white powder is an active ingredient of antacids and is used in preparation of baking powder. Name the compound and explain that how it is manufactured. Give chemical equation.
 (b) Write a chemical equation to show the effect of heat on this compound.
24. What is atomic radius? Why does atomic radius decrease across a period?

OR

Given below are some elements of the modern periodic table:

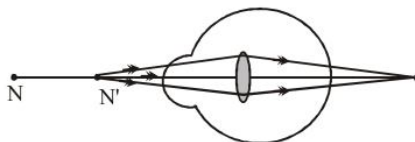


- (a) Select the element that has one electron in the outermost shell and write its electronic configuration.
 - (b) Select two elements that belong to the same group. Give reason for your answer.
 - (c) Select two elements that belong to the same group. Which one of the two has bigger atomic size?
25. What is the importance of transpiration?

OR

What is the role of valves in the human heart?

26. Explain Mendel's law of inheritance.
27. Study the diagram given below and answer the following questions:



- (a) Name the defect of vision depicted in the diagram.
- (b) List two causes of the defect.
- (c) Draw a ray diagram for the correction of the above defect using an appropriate lens.

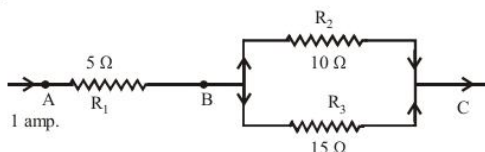
OR

What do you mean by (a) monochromatic light and (b) polychromatic light? Give examples.

28. Why plaster of paris should be stored in a moisture proof container?
 29. Define photosynthesis. Which events occur during the process of photosynthesis?
 30. Name the hormones secreted by the following endocrine glands and specify one function of each :
 (a) Thyroid (b) Pituitary (c) Pancreas

SECTION - C

31. (a) With the help of circuit diagram derive the formula for the equivalent resistance for three resistance connected in series?
 (b) Three resistors are connected as shown in the following figure. Through the resistor 5 ohm a current of 1 A is flowing.



- (i) What is the total resistance?
 (ii) What is the potential difference across AB and BC?
 (iii) What is the current through other two resistors?
 32. What happens when a solution of Na_2CO_3 is mixed with a solution of CaCl_2 ? Support your answer with the help of total ionic and net ionic equation.

OR

Balance the following equations.

- (a) $\text{CaCO}_3 \xrightarrow{\Delta} \text{CaO} + \text{CO}_2$
 (b) $\text{Na} + \text{O}_2 \longrightarrow \text{Na}_2\text{O}$
 (c) $\text{H}_2\text{O}_2 \longrightarrow \text{H}_2\text{O} + \text{O}_2$
 (d) $\text{Al} + \text{H}_3\text{PO}_4 \longrightarrow \text{AlPO}_4 + \text{H}_2$
 (e) $\text{Ca}(\text{OH})_2 + \text{HCl} \longrightarrow \text{CaCl}_2 + \text{H}_2\text{O}$
 (f) $\text{Mg} + \text{N}_2 \longrightarrow \text{Mg}_3\text{N}_2$
 (g) $\text{C}_2\text{H}_6 + \text{O}_2 \longrightarrow \text{CO}_2 + \text{H}_2\text{O}$
 (h) $\text{Mg}_3\text{N}_2 + \text{H}_2\text{O} \longrightarrow \text{Mg}(\text{OH})_2 + \text{NH}_3$
 (i) $\text{H}_2\text{S} + \text{O}_2 \longrightarrow \text{S} + \text{H}_2\text{O}$
 (j) $\text{BF}_3 + \text{NaH} \longrightarrow \text{B}_2\text{H}_6 + \text{NaF}$
 33. Explain the structure and function of human heart with help of diagram?
 34. Find the refractive index of two media with respect to each other when their refractive indices with respect to air or vacuum are known.
 35. (a) The atomic numbers of Mg and Al are 12 and 13 respectively. Write the electronic configuration of each element. Which of these two has large atomic radius?
 (b) Consider the following elements:
 Na, Cl, Ba, F, K, Br, Sr, Li, Ca.
 Separate these elements into three groups of similar properties. Also give the basis of your classification?
 36. (a) Write the function of following parts in human female reproductive system :
 (i) Ovary
 (ii) Oviduct
 (iii) Uterus
 (b) Describe in brief the structure and function of placenta.

OR

Define pollination. Explain different types of pollination. List two agents of pollination? How does suitable pollination lead to fertilisation?