

HALF YEARLY EXAMINATION, 2017-18

SCIENCE

Time : 3 hrs.

Class - X

M.M. : 80

Date – 19.09.2017 (Tuesday)

Name of the student _____ Section _____

General Instructions :

- The question paper comprises **two Sections, A and B**. You are to attempt both the sections.
- **All** questions are **compulsory**.
- **All** questions of **Section-A** and **all** questions of **Section-B** are to be attempted separately.
- Question numbers **1 & 2** in **Section-A** are **one mark** questions. These are to be answered in **one word** or in **one sentence**.
- Question numbers **3 to 5** in **Section-A** are **two marks** questions. These are to be answered in about **30 words** each.
- Question numbers **6 to 15** in **Section-A** are **three marks** questions. These are to be answered in about **50 words** each
- Question numbers **16 to 21** in **Section-A** are **five marks** questions. These are to be answered in about **70 words** each.
- Question numbers **22 to 27** in **Section-B** are **practical based questions**. Each question is a **two marks** question. You are to select one most appropriate response out of the four provided to you.

SECTION – A

- Q.1** Name a hormone secreted by the adrenal glands. (1)
- Q.2** Which tissue is responsible for the conduction of water and minerals in the plants? (1)
- Q.3** What is a good fuel? (2)
- Q.4** Why does distilled water not conduct electricity where as rain water does? Explain. (2)
- Q.5** What is Reflex action? Draw a Reflex arc and label it. (2)
- Q.6** a) Write two advantages of connecting electrical devices in parallel. (2+1)
b) An electric bulb is connected to a 220 V generator. The current is 0.5 A. What is the power of the bulb?
- Q.7** a) How many 176Ω resistors (in parallel) are required to carry 5 A on a 220 V line? (2+1)
b) How is a voltmeter connected in the circuit to measure the potential difference between two points?
- Q.8** a) Why are we looking at alternating sources of energy? (2+1)
b) Give an example of non-renewable source of energy?
- Q.9** a) What is observed when a solution of potassium iodide is added to a solution of lead nitrate taken in a test tube? (3)
b) What type of reaction is this?
c) Write a balanced reaction to represent the above reaction.
- Q.10** a) Oxidation and reduction processes occur simultaneously. Justify the statement with the help of an example. (3)
b) Why should chemical equations be balanced?
- Q.11** Give reasons for the following : (3)
a) Ionic compounds have high melting point and boiling point.
b) Carbonate and sulphide ores are usually converted into oxides during the process of extraction.
c) Al_2O_3 is an example of amphoteric oxide.

OR

- a) Platinum, gold, silver are used to make jewellery.
- b) Sodium, potassium and lithium are stored under kerosene oil.
- c) Aluminium is a highly reactive metal but still used for making cooking utensils.

Q.12 How is the small intestine designed to absorb the digested food? (3)

OR

What are the different ways in which glucose is oxidised to provide energy in various organisms?

Q.13 Two months back, few children in a village complained of swollen neck. More and more children started complaining about swollen neck every month. (3)

A villager Ram Singh being superstitious thinks that the village is cursed by an evil spirit. Shyam is another villager who thinks it is due to some disease which needs constant supervision and consultation from a doctor. On the basis of the above paragraph answer the following questions.

- a) Do you agree with Ram Singh or Shyam? Give reason.
- b) What can be the reason for swollen neck of young children? How can the problem be overcome?
- c) What value is shown by Shyam?

Q.14 a) Define food chain. (3)

b) What is 10% law? Explain briefly.

Q.15 a) Write one role of auxin in the plants. (3)

b) What happens at the synapse between two neurons?

c) Mention any one function of -: i) medulla ii) cerebellum

Q.16 a) Why does the cord of an electric heater not glow while the heating element does? (2+2+1)

b) Calculate the equivalent resistance when the following resistances are connected in parallel $5\ \Omega$, $10\ \Omega$ and $30\ \Omega$.

c) What is the unit of resistivity?

Q.17 a) Why don't two magnetic lines of force intersect each other? (2+2+1)

b) A positively charged particle (alpha particle) projected towards west is deflected towards North by a magnetic field. What is the direction of magnetic field? Explain.

c) Write two sources of alternating current.

OR

a) An electric oven of 2 kW power rating is operated in a domestic electric circuit (220V) that has a current rating of 5 A. What result do you expect? Explain.

b) Name two safety measures commonly used in electric circuits and appliances.

c) Name two sources of direct current.

Q.18 a) What is tooth enamel chemically? (5)

b) Why do doctors suggest use of tooth paste to prevent tooth decay?

c) Give the reaction for the preparation of bleaching powder.

d) Why are some salts called hydrated salts?

e) What are olfactory indicators?

Q.19 With reference to electro refining of impure copper, answer the following : (5)

a) Draw a neat and labelled diagram required for the purpose of electro refining.

b) What is the electrolyte used?

c) Name the cathode and anode used.

d) What happens at cathode and anode?

- Q.20** a) Write one difference between autotrophic nutrition and heterotrophic nutrition. (5)
 b) Explain 'double circulation' in humans.
 c) Write briefly the function of the following. (one function each)
 i) kidney ii) urinary bladder

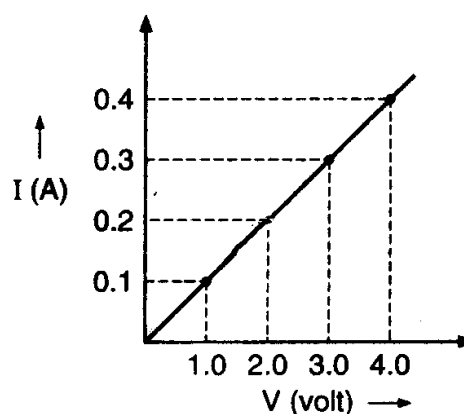
- Q.21** a) What is the role of decomposers in the ecosystem? (5)
 b) What is biological magnification?
 c) What is ozone and how does it affect any ecosystem?

SECTION - B

- Q.22** Draw a schematic diagram of a circuit consisting of a battery of three cells of 2 V each, a 5 Ω resistor, an 8 Ω resistor and a 12 Ω resistor and a plug key all connected in series. (2)

- Q.23** a) In a voltmeter, there are 10 divisions between the 0 mark and mark 0.5 on its scale. The least count of the voltmeter is – (1+1)
 i) 0.02V ii) 0.025 V iii) 0.05 V iv) 0.25 V

- b) In an experiment to study the dependence of current on potential difference across a resistor, a student obtained the graph as shown in the diagram. The value of resistance of the resistor is-



- i) 0.1 Ω ii) 1 Ω
 iii) 10 Ω iv) 100 Ω

- Q.24** Write any two chemical reactions shown by dilute hydrochloric acid. (2)

- Q.25** Three solutions A, B, C when treated with universal indicator showed pH as 4, 7, 11 respectively, which solution is – (2)

- a) neutral
 b) alkaline
 c) acidic.

Arrange the pH in increasing order of hydrogen ion concentration.

- Q.26** a) Leaf peels are mounted in glycerin to : (1+1)
 i) keep it fixed ii) prevent it from drying
 iii) to colour it iv) none of these

- b) What will happen if instead of moist seeds, boiled seeds are used for experiments?
 i) Germination will occur ii) Germination will not occur
 iii) CO₂ will be released more iv) none of these

- Q.27** Draw a well labelled diagram of stomata and label any parts of it. (2)

