

HALF YEARLY EXAMINATION, 2018-19

SCIENCE

Time : 3 hrs.

Class - X

M.M. : 80

Date – 20.09.2018 (Thursday)

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** Why arteries have thick walls? (1)
- Q.2** a) What are plant hormones? (Write in short) (1)
b) Write one role of auxin in plants.
- Q.3** How can the power of electric motor be enhanced? (2)
- Q.4** Why wind energy farms can be established only at specific locations ? Give reason to support your answer. (2)
- Q.5** How is human intestine designed to absorb the digested food? (2)
- Q.6** a) What are magnetic field lines? (3)
b) Justify the following statements:
i) Two magnetic field lines never intersect each other.
ii) Magnetic field lines are closed curves.

OR

State one main difference between AC and DC. Why AC is preferred over DC for long range transmission of electric power? Name one source each of DC and AC.

- Q.7** Draw a labelled diagram of electric motor and explain its working. (3)

OR

State the purpose for which the following rules are used.

- i) Right hand thumb rule
- ii) Fleming's left hand rule
- iii) Fleming's right hand rule

Q.8 How geothermal energy can be harnessed to produce electrical energy? (3)

Q.9 Write chemical equations for the following when : (3)

- a) Iron react with steam.
- b) Magnesium react with dil. HCl.
- c) Copper is heated in air.

Q.10 a) The blue coloured crystals of a substance changed on heating in a closed test tube but the colour was regained after sometime on cooling. Name the substance & write its chemical formula. Explain the phenomenon involved. (3)

- b) Write the name and chemical formula of two such compounds whose one formula unit is associated with 10 & 2 water molecule respectively.

Q.11 State the property utilized in the following : (3)

- a) Graphite in making electrode.
- b) Electric wires are coated with polyvinyl chloride (PVC) or rubber like material.
- c) Metal alloys are used for making bells and strings of musical instruments.

OR

- a) Write the balanced chemical equation for the extraction of copper metal from its ore.
- b) How can you extract the metals placed at the top of the reactivity series ? Give the name of the process also.
- c) Name the component of alloy steel.

Q.12 a) Draw a well labelled diagram of human excretory system. (3)

- b) What is a nephron?

Q.13 Write in short the role of the following human hormones : (3)

- a) Thyroxine
- b) Insulin
- c) Adrenaline

Q.14 a) What happens at the synapse between two neurons? (3)

- b) Write one role of cerebellum.

Q.15 What are biotic components of ecosystem? How are they classified ? (3)

Q.16 a) Heating elements of electrical heating devices are made up of an alloy rather than a pure metal. Give two reasons. (5)

- b) Four resistors of $4\ \Omega$ each are joined end to end to form a square. Calculate the equivalent resistance of the combination between two adjacent corner?

OR

A household uses the following electric appliances :

- a) Refrigerator of rating 400W for 10 h daily.

- b) Two electric fans of rating 80W each for 6 h daily.
- c) Six electric tubes of rating 18W each for 6 h daily.

Calculate the electricity bill for the household for the month of June, if the cost of electrical energy is Rs. 3 per unit.

Q.17 a) Draw the magnetic field lines around a current carrying solenoid. (5)

b) Can you determine the north & south poles of a current carrying solenoid using a bar magnet? Explain.

Q.18 A metal X acquires a green colour coating on its surface on exposure to air. (5)

- a) Identify the metal X and name the process responsible for this change.
- b) Name and write the chemical formula of the green coating formed on the metal.
- c) List any two important methods to prevent the process.
- d) Give reasons for the following :
 - i) Iron grills are frequently painted
 - ii) Gold ornaments retain their lustre even after several years of use.

Q.19 a) Define universal indicator. Mention its one use. (5)

b) Name one salt whose solution has pH more than 7 and one salt whose solution has pH less than 7.

c) What is bleaching powder chemically called? Give a reaction for its preparation?

Q.20 a) Draw a well labelled diagram of a neuron. (5)

b) Which part of a neuron receives the information?

c) What is reflex action ?

OR

a) Draw and explain a reflex arc.

b) Write role of medulla in the hind brain.

c) What is a tropic movement in plants? Write any two types of tropic movements seen in plants.

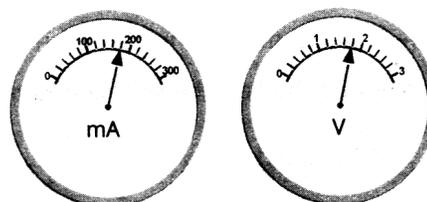
Q.21 a) What is ozone? What essential function does the ozone layer perform? (5)

b) Define a food chain?

c) What is biological magnification?

SECTION - B

Q.22 The current flowing through a resistor connected in an electrical circuit and the potential difference developed across its ends are shown in the diagram given alongside: (2)

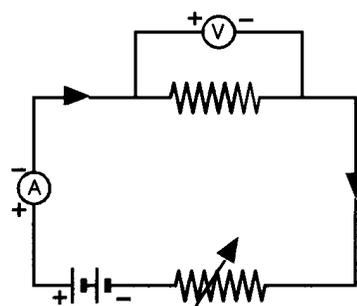


The value of resistance of the resistor in ohms is

- a) 25 ohms
- ii) 20 ohms
- iii) 15 ohms
- iv) 10 ohms

Q.23 The circuit diagram given alongside shows the experimental set-up for the study of dependence of current on potential difference. Which two circuit components are connected in series ?

- a) Battery and voltmeter
- b) Ammeter and voltmeter
- c) Ammeter and rheostat
- d) Resistor and voltmeter



(2)

Q.24 a) State the observation you would make on adding sodium hydroxide to aqueous solution of aluminium chloride.

b) Write the relation between $[H^+]$ & pH.

(2)

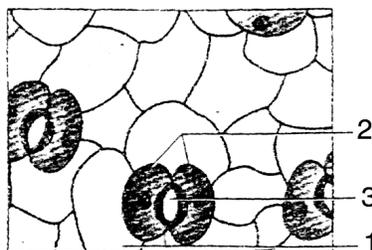
Q.25 Samples of four metals A, B, C and D were taken and added to the following solution one by one. The results obtained have been tabulated as follows :

Metal	Solution to which metal is added			
	Iron (II) sulphate	Copper (II) sulphate	Zinc sulphate	Silver nitrate
A	No reaction	Displacement	-	-
B	Displacement	-	No reaction	-
C	No reaction	No reaction	No reaction	Displacement
D	No reaction	No reaction	No reaction	Displacement

Use the table given above to answer the following questions :

- a) Which is the most reactive metal?
- b) Arrange the metals A, B, C and D in order of increasing reactivity.

Q.26 A) Select the correct labellings for the following diagram:



- a) 1- Epidermal cells 2- Guard cells 3- Stomata
- b) 1- Epidermal cells 2- Stomata 3- Guard cells
- c) 1- Guard cells 2- Epidermal cells 3- Stomata
- d) 1- Stomata 2- Epidermal cells 3- Guard cells

(1)

B) Stomata generally opens when guard cells are:

- a) Turgid b) Flaccid c) in both the condition d) None of these

(1)

Q.27 Write any two precautions to be taken during the experiment which shows that CO_2 is produced during respiration. (Germinating seed experiment)

(2)

