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Half Yearly Examination – (2019-20)

Class: - 10th
Subject: - Science

F.M.: - 80
Duration: - 3 hr

General Instructions:-

- All questions are compulsory.
- Read the questions carefully and write the answers in the answer sheets provided.
- Do not answer the questions randomly. Attempt all the questions of one section before moving on to another section.
- Do not write anything on the question paper.
- Section- A contain questions of 'Physics'
- In sections Q.NO. 1 to 7 carry 1 marks
 - Q.NO. 8 to 10 carry 3 marks
 - Q.NO. 11 and 12 carry 5 marks
 - Q.NO. 13 to 18 carry 1 marks
 - Q.NO. 19 to 22 carry 3 marks
 - Q. NO. 23 and 24 carry 5 marks

Section – A (Physics)

1. The device used for producing electric current is called

(a) generator

(b) galvanometer

© ammeter

(d) motor

2. An electric bulb is rated 220 V and 100 W. When it is operated on 110 V, the power consumed will be :

(a) 100W

(b) 75W

© 50 W

(d) 25 W

3. Electric resistivity of a given metallic wire depends upon

(a) its length

(b) its thickness

© its shape

(d) nature of material

4. Mention the shape of magnetic field lines around a current carrying straight conductor.

5. Define the unit of electric current.

Or

Draw a magnetic field line around a bar magnet

6. Name the type of the current

(a) used in household supply

(b) given by cell

Or

What does the thumb indicate in Fleming's right hand rule?

7. Find the number of electrons in 3 C of charge.

Or

Power of a lamp is 60 W. Find the energy in joules consumed by it in 1 s.

8. State two ways by which the strength of an electromagnet can be increased.

9. Calculate the total cost running the following electrical devices in the month of September, if the rate of 1 unit for electricity is ₹ 6.00.

(a) Electric heater of 1000W for 5 hours daily.

(b) electric refrigerator of 400 W for 10 hours daily.

Or

A wire of 4 ohm resistance is doubled on itself .Calculate the new resistance of wire .

10 .(a)Name the type of electric current generated by most of the power station in our country.

(b) Why it is preferred over the other type?

© State the frequency of power supply generated in India .

Or

Give reason why Nichrome is used as a heating element in the electric heater?

11. (a) State the commercial unit of electric energy and find its relation with its SI unit.

(b) The current through a resistor is made three times its initial value . Calculate how it will affect the heat produced in the conductor .

(c) Find the increase in the amount of heat generated in a conductor if another conductor of double resistance is connected in circuit keeping all other factors unchanged.

12.(a) State Fleming's left hand rule .

(b) Write the principle of working of an electric motor .

(c) Explain the function of the following parts of an electric motor :

(i) Armature

(ii) Brushes

(iii) Split ring .

Or

(a)State the function of 'a fuse ' in an electric circuit . How is it connected in the domestic circuit .How is it connected in the domestic circuit ?

(b) An electric fuse of rating 3 A is connected in a circuit in which an electric iron of power 1.5 kilowatt is connected which operates at 220 V . What would happen ? Explain .

Section-B (Biology)

13.. Choose the event that does not occur in photosynthesis.

(a) absorption of light energy

(b) reduction of carbon dioxide to carbohydrate

(c) oxidation of carbon to carbon dioxide

(d) conversion of light energy to chemical energy

14.Write the full form of ATP.

15.. Define osmoregulation .

Or

Define synapse.

16. Iron rich compound in RBC which binds the oxygen is
- 17.. Name the plant hormone that promote cell division
18. The brain is enclosed in a box called meninges. (true/false)
19. what are hormones? Name any 3 plant hormones.
- 20.. Differentiate between tropic and nastic movements in plants . give one example of each.
21. why is RBC suitable for the transportation of oxygen in blood.

Or

How is water absorbed by the roots of the plants?

22. Why does selective reabsorption takes place in the renal tubule of the nephron?

Or

Why are leaves suitable for the photosynthesis?

23. Write the mechanism of inhalation in human beings.

Or

Write the mechanism of circulation of oxygenated blood in human being

- 24.. Discuss the structure and the function of nephrons.

Or

Mention the major digestive glands associated with the alimentary canal of ann and their functions.

Section-C (Chemistry)

1. Barium chloride on reacting with ammonium sulphate forms barium sulphate and ammonium chloride. Which of the following correctly represents the type of the reaction involved?

(i) Displacement reaction

(ii) Precipitation reaction

(iii) Combination reaction

(iv) Double displacement reaction

(a) (i) only (b) (ii) only

(c) (iv) only (d) (ii) and (iv)

OR

Electrolysis of water is a decomposition reaction. The mole ratio of hydrogen and oxygen gases liberated during electrolysis of water is

(a) 1:1

(b) 2:1

(c) 4:1

(d) 1:2

2. Which of the following gases can be used for storage of fresh sample of an oil for a long time?

(a) Carbon dioxide or oxygen

(b) Nitrogen or oxygen

(c) Carbon dioxide or helium

(d) Helium or nitrogen

3. An aqueous solution turns red litmus solution blue. Excess addition of which of the following solution would reverse the

change?

(a) Baking powder

(b) Lime

(c) Ammonium hydroxide solution

(d) Hydrochloric acid

4. Which of the following salts does not contain water of crystallisation?

(a) Blue vitriol

(b) Baking soda

(c) Washing soda

(d) Gypsum

OR

One of the constituents of baking powder is sodium hydrogen carbonate, the other constituent is

(a) hydrochloric acid

(b) tartaric acid

(c) acetic acid

(d) sulphuric acid

5. Human blood is acidic in nature.

6. Dilution of an acid is an exothermic process.

7. Decomposition reactions require energy either in the form of heat or light or electricity for breaking down the reactions. Write one equation each for decomposition reactions where energy is supplied in the form of heat, light and electricity.

Or

(i) How will you recognise the corrosion of silver.

1

(ii) Respiration is an exothermic reaction. Explain it by giving a suitable reaction.

2

8. (a) Bee sting leaves a chemical substance that causes pain and irritation. Name the chemical substance. Identify the type of substance which may give relief on the stung area when applied on it.

2

(b) Mention the pH value below which tooth decay begins.

1

(c) What are Strong and weak acids? Give an example of each.

1

9. (i) What is the action of hydrochloric acid on marble or egg shells?

1

(ii) What is a neutralization reaction? Give two examples.

2

10. (i) What type of coating is formed on copper articles when they get corroded?

1

(ii) In the reaction:



(a) Name the compound (i) Oxidised (ii) Reduced (iii) Oxidising agent (iv) Reducing agent

2

(iii) Define :

2

(a) Corrosion

(b) Rancidity

11. (i) Give two important uses of washing soda and baking soda.

(ii) Five solutions A, B, C, D and E when tested with universal indicator showed pH as 4, 1, 11, 7 and 9, respectively. Which solution is

- (a) neutral?
- (b) strongly alkaline?
- (c) strongly acidic?
- (d) weakly acidic?
- (e) weakly alkaline?

Arrange the pH in increasing order of hydrogen-ion concentration.

Or

Answer the following:

- (a) Why is Plaster of Paris written as $\text{CaSO}_4 \cdot \frac{1}{2} \text{H}_2\text{O}$? How is it possible to have half a water molecule attached to CaSO_4 ?
- (b) Why is sodium hydrogen carbonate an essential ingredient in antacids ?
- (c) When electricity is passed through an aqueous solution of NaCl , three products are obtained. Why is the process called chlor – alkali ?