

MODERN SCHOOL VAISHALI
CLASS –X
SUBJECT -PHYSICS

Q1 Work done in moving 5c charge across the ends of a conductor is 100j.If the potential at one end of conductor is 10v.Find the potential at the other end of this conductor.

Q2 a torch bulb is rated at 1.5v,500Ma.Find its resistance.

Q3 The radius of conducting wire is doubled.What will be the ratio its new specific resistance to the old one.

Q4DRAW a diagrams of an electric circuits comprising of 3 cells and bulb ,ammeter ,plug key in the ON mode and another with same components but with two bulbs in parallel and a voltmeter across the combination.

Q5 State ohm 's law.draw circuit diagram for it.also plot graph.

Q6 Find the expression for equivalent resistance in series .

Q7 Find the expression for equivalent resistance in parallel

Q8 Explain the following

a)Why is tungsten used for filaments of electric bulb.

b)How does the resistance of wire vary with its area of cross-section.

Q9 Agiven length of wire i8s doubled on itself and this process is repeated once again.By what factor does the resistance of the wire change?

Q10 Two lamps one rated 60w at 220 and other 40w at 220v are connected in parallel to the electric supply at 220v

a) Draw a circuit diagram

b) Calculate the current drawn from electric supply.

Q11 Draw magnetic field lines around a bar magnet.

Q12 State the principal of electric generator.

Q13 List two methods of producing magnetic fields.

Q14 Two circular coils A and B are placed close to each other .If the current in the coil A is changed will some current be induced in the coil B.

Q15 Draw magnetic field lines pattern due to solenoid.How does its strength be increased.

Q16 With the help of experimental set up diagram describe an activity to show that force acting on current carrying conductor placed in a magnetic field increases with increase in field strength.

Q17 State one difference between AC and DC.Why AC is preferred over DC for long distance transmission.

Q18 What is cause of short circuit and overloading.

Q19 Draw a diagram of a domestic circuit .and explain the function of each component.

Q20 Give any three advantage of AC over DC.

Q21 Burning of fossil fuel causes pollution. How can it be minimised?

Q22 Mention three disadvantage of producing hydroelectricity by constructing the dams.

Q23 State any three advantage of charcoal over wood.

Q24 State the principal of working of Ocean Thermal Energy conversion plant.explain how the plant works.

Q25 Define process of nuclear fission.Write the steps involved in generating electricity in nuclear fission.

Q26 Out of two elements A and B with mass 2 and 235 which one is suitable for making 1)a nuclear reactor and 2)hydrogen bomb.Name the nuclear reaction involved in each case.

Q27 Why is there so much emphasis on changing over from petrol driven automobiles to CNGdriven vehicles.

Q28 Biogas is better fuel than animal dung cakes.Justify this statement stating four reason.

Q29 Name any two elements that are used to fabricating solar cells.

Q30 Why do we prefer a convex mirror as a rear view mirror?

Q31 Light enters from air to glass having $n=1.50$.What is the speed of light in the glass.speed of light in vacuum is 3×10^8 m/s.

Q32 Name the type of mirror used in the following situations.

- a) Headlights of cars.
- b) Solar furnace.
- c) Justify your answer

Q33 An object 5cm in length is held 25cm away from convex lens of $f=10$ cm.Draw a ray diagram and find the position ,size and the nature of the image formed?

Q34 An object is placed at a distance of 10cm from a convex mirror of $f=15$ cm.find the position and nature of image.

Q35 What is the magnification of the images plane mirror and why?

Q36 List four specific characteristics of the images of the object formed by convex mirrors.

Q37 State two position in which a concave mirror produces a magnified image of a given object.list two differences between the two images.

Q38 When light enters from air to glass the angles of incidence and refraction in air and glass 45 and 30 resp.Find the refractive index of glass.

Q39 You have two lens A and B of focal length +10cm and -10 cm resp.state the nature and power of each lens.

Q40 What is meant by power of accommodation of the eye?

Q41 The far point of a myopic person is 80cm in front of the eye .What is the nature and power of the lens required to correct the the problem.

Q42 Why does it take sometime to see the objects in dim light when you enter the room from bright sunlight outside?

Q43 Draw a ray diagram to show the refraction of light through a glass prism.

Q 44 If the earth has no atmosphere what change would be observed in the length of day.give reason.

Q45 What is meant by scattering of light. state the factors on which the colours of scattering light perceived by us depends.

Q46 What is myopia. What are its causes how can be rectify this defect? explain with diagram.

Q47 What is hypermetropia. write its causes and how be rectify it.

Q48 Draw a figure which shows the arrangements for observing phenomenon of scattering of light in the laboratory. what colour would you observe in thr experiment? why?

Q49 What is dispersion of light. Draw a labelled diagram for the formation of rainbow with two essential condition

Q50 Draw experimental setup of newton classic experiment for dispersion of light.

CHEMISTRY

Q1. Why should water be never added dropwise to conc. H_2SO_4 ?

Q2. Name the gas evolved when dil. H_2SO_4 acid acts on sodium carbonate.

Q3. How is bleaching powder prepared? Why does bleaching powder-
Smell strongly of chlorine?

Not dissolve completely in water?

Q4. Which property makes solder suitable for welding electrical wires?

Q5. A) give reason for the following:

Gold , silver and platinum are used for making jewellery.

Carbonate and sulphide ores are generally converted into oxides ores prior to reduction during the process of extraction.

Why is sodium kept immersed in kerosene oil

Inability of non-meta for displacing H_2 from H_2SO_4

ionic compounds have generally high melting point.

b) What are amphoteric oxides? Give two examples of amphoteric oxides with balanced chemical equation.

Q6. Consider the following salts



Which of the these salts will give

acidic solution

neutral solution

basic solution

Q7. When a copper wire is left in silver nitrate solution it is observed that the solution turns bluish green.

Explain the observation

Write the balanced chemical equation to represent the change taking place.

Q8. Write one example of each of the following:

A metal and a non-metal which are liquid at room temperature.

A metal which is very soft and a non-metal which is very hard.

A metal which has very low melting point and a non-metal which has a very high melting point

A metal which is bad conductor of heat and a non-metal which is good conductor of electricity.

Q9. State reason for the following:

A tarnished copper vessel begins to shine again when rubbed with lemon.

All alkalis are bases but all bases are not alkalis.

Use of mild base like baking soda on a honey-bee stung area gives relief.

Q10. Balance the following chemical equation:



Q11. Iron displaces copper from copper sulphate solution, zinc displaces iron from iron sulphate solution and copper displaces silver from silver nitrate solution. On the basis of these reactions arrange the four metals involved in order of their reactivities. Give balanced chemical equation in each case .

Q12. How is washing soda obtained from baking soda? Explain with the help of chemical equation for the reaction involved in the process.

Q13. A white salt on heating decomposes to give brown fumes and a residue is left behind.

Name the salt

Write the equation for the decomposition reaction.

Q14. Write the balanced chemical equation for the reaction taking place when dry blue crystals of copper sulphate are dropped into conc. H_2SO_4 ?

Q15.a) Differentiate between calcination and roasting.

b) suggest a method of refining of copper.

Q16. Write the chemical name and formula of gypsum. What happens when gypsum is heated at 373K? Write the chemical equation for the reaction.

Q17. What happens when dil. HCl is added to the following :

Write the balanced equations

Bleaching powder

Zinc granules

Baking soda

Q18. A) Describe an activity to show that metals are good conductors of electricity.

b) account for the following:

i) H_2 gas is not evolved when a metal reacts with nitric acid

ii) the reaction of iron(III) oxide with Al is used to join cracked iron parts of machines.

Q19. A) the pH of soil A is 7.5 while that of soil B is 4.5. Which of the two soil A or B should be treated with powdered chalk to adjust its pH and why?

b) Name the chemical which is injected into the skin of a person:

i) during ant sting

ii) during the nettle leaf sting.

How can the effect of these stings be neutralized?

c) explain how the pH change in the river water can endanger the lives of aquatic animals like fish?

Q20. Write the chemical equation for the reaction taking place when:

Fe reacts with steam

Mg reacts with dil. HCl

Cu is treated in air

Silver chloride turns grey in the presence of sunlight to form silver metal.

Q21. i) Given below are the pH values of four different liquids:

7.0, 14.0, 4.0, 2.0

Which of these could be that of:

Lemon juice

NaOH solution

Distilled water

Tomato juice

When blue litmus solution is added to soda water, what change will be observed. why?

Q22. Explain the term rancidity. State any two methods to prevent rancidity in fat and oil containing foods.

Q23. In the formation of a compound XY_2 , an atom X donates one electron to each Y atom. Show the electron dot structure of X and Y and the formation of XY_2 ? Write any three properties of compound XY_2 . The electronic configuration of the element X and Y are as follows:

X- 2,8,2

Y- 2,7

Q24. A) Define the term alloy. Write two advantages of making alloy.

b) Give reasons for the following:

i) copper and Aluminium are usually used for electricity transmission.

ii) An iron grill should be painted frequently.

Q25. A) state what happens when an acid reacts with a base? Name the reaction and give equation of the reaction involved.

b) Name one natural source of each of the following acids:

i) citric acid

ii) lactic acid

iii) A student dropped a few pieces of marble in dil. HCl. The gas evolved passed through lime water. What change would be observed in lime water? Name the gas evolved.

Q26. Zinc oxide reacts with carbon, on heating to form zinc metal and carbon monoxide. Write the balanced chemical equation for this reaction. Name-

The substance oxidized

The substance reduced.

SUBJECT-BIOLOGY

Q1 What are the conditions necessary for autotrophic nutrition.

Q2 List three events takes place during process of photosynthesis?

Q3 Name three gastric juice present in stomach and write three functions.

Q4 What are the function of digestive enzyme?

Q5 How is small intestine designed in human being.

Q6 How does digestion process takes place in stomach and small intestine?

Q7 How is glucose oxidized in various animals ?

Q8 What is difference between aerobic and anaerobic respiration?

Q9 draw diagram of human respiratory system and and label the diagram ?

Q10 What are the functions of following a- valve , b – pulmonary vein , c – pulmonary artery , d – heart

Q 11 What is double circulation system ? Why is it necessary to seprate oxygenated and deoxygenated blood ?

Q12 name the excretory unit of kidney

Q13 draw structure of nephron and write it's function

CHAPTER – 7 (CONTROL AND COORDINATION)

Q14 Name the receptors and function of following sense organs ; eyes < ear <nose < tongue and skin

Q15 what is reflex action ?explain with diagram ?

Q 16 what are the three regions of brain ?write their functions ?

Q17 what are plant harmones?name its type and write their specific functions ?

Q18 what is difference between exocrine and endocrine gland ?

Q19 why are injection of insulin are given to diabetic patient ?

Q20 Name the harmones and their specific functions of following a – endocrine gland a- pancreas thyroid gland c c- adrenal gland

Q21 what is feed back mechanism ?

Q22 draw structure of neuron and label the diagram?

CHAPTER -8 [REPRODUCTION]

Q 23 Name the method of asexual reproduction in following organism a- hydra b- amoeba c- planaria d – spirogyra e- rhizopus

Q24 How is binary fission is different from multiple fission ?

Q25 What is vegetative propagation ? write its advantages .

Q26 Why does testes is located outside the scrotum ?

Q27 Draw diagram of human female reproductive system and label site of fertilization and implantation ?

Q28 What is placenta ?write its functions ?

Q29 Draw longitudinal section of pistil and label the diagram ?

Q30 How and where does fertilization process takes place in human being ?

Q31 Name two sexually transmitted disease caused by bacteria ?

CHAPTER-9 HEREDITY AND EVOLUTION

Q32 How does mendel experiment shows that traits are dominant and recessive

Q33 how is sex of child is determined in human beings ?

Q34 What is the difference between acquired and inherited trait ?

Q35 What is the difference between homologous and analogous organs with examples ?

Q36 explain the following a- speciation b- natural selection

Q37 What are fossils ? how we can determine age of fossils ?

Q38 How does mendel experiment shows that traits inherited independently ?

Q39 – What are the tools used for study human evolution ?

Q40 –State the evidence do we have for origin of life inanimate matter ?

Chapter 15 ,16

Q41 what is ozone?how and where it is formed on the atmosphere ?

Q42 what is the importance of decomposers in ecosystem

Q43 list two man made and natural ecosystem

Q44 what are trophic level ?explain with examples

Q45 forest are biodiversity hot spot,justify the statement

Q46 write short note on a -chipko andolan b- kejri tress

Q47 list any two advantages associated with water stored in ground

Q48 Name and explain problems associated b with construction of dam

Q49 Name the rivers of following dams a) Teri dam b)sarda rsarovar dam

Q50 what are three Rs associated with environment ?explain

