

13.9.16

General Instructions:

- i) The questions paper comprises of two sections, A and B. You are to attempt both the sections.
- ii) All questions are compulsory.
- iii) There is no overall choice.
- iv) All questions of section A and all questions of section B are to be attempted separately.
- v) Question numbers 1 to 3 in section A are one mark questions. These are to be answered in one word or one sentence.
- vi) Questions of 4 to 6 in section A are two marks questions. These are to be answered in 30 words each.
- vii) Questions of 7 to 18 in section A are three marks questions. These are to be answered in 50 words each.
- viii) Questions of 19 to 24 in section A are five marks questions. These are to be answered in 70 words each.
- ix) Question numbers 25 to 33 in section B are multiple choice questions based on practical skills. Each question is one mark question. You are to select one of the appropriate response out of the four provided to you.
- x) Question numbers 34 to 36 in section B are two marks questions based on practical skills. These are to be answered in about 30 words each.

### SECTION A

1. When we breathe out, why does the air passage not collapse?
2. Mention one reason why the tungsten is used for making filament of electric lamp.
3. Name any two green house gases.
4. Explain the term rancidity. State any two methods to prevent rancidity in fat and oil containing foods.
5. Consider the following salts :  $\text{Na}_2\text{CO}_3$ ,  $\text{NaCl}$ ,  $\text{NH}_4\text{Cl}$ ,  $\text{CH}_3\text{COOH}$   
Which of these salts will give (i) Acidic solution (ii) Neutral solution and (iii) Basic solution ?
6. How is amount of urine produced regulated ?
7. When a copper wire is left in silver nitrate solution, it is observed that the solution turns bluish green.  
i) Explain the observation.  
ii) Write the balanced chemical equation to represent the change taking place.
8. Write one example of each of the following :  
a) A metal and a nonmetal which are liquids at room temperature.  
b) A metal which is very soft and a nonmetal which is very hard.  
c) A metal which has very low melting point and a nonmetal which has very high melting point.
9. State reason for the following :  
i) A tarnished copper vessel begins to shine again when rubbed with lemon.  
ii) All alkalies are bases but all bases are not alkalies.  
iii) Use of a mild base like baking soda on the honey-bee stung area relief.

(A1)

Thyroid gland

10. Balance the following chemical equations:

- i)  $\text{NH}_3 + \text{CuO} \rightarrow \text{Cu} + \text{N}_2 + \text{H}_2\text{O}$
- ii)  $\text{Al} + \text{Fe}_2\text{O}_3 \rightarrow \text{Al}_2\text{O}_3 + \text{Fe}$
- iii)  $\text{P}_4 + \text{Cl}_2 \rightarrow \text{PCl}_5$

11. a) List the glands that secrete insulin and thyroxin.  
 b) Explain with an example how the timing and amount of hormone secreted are regulated in human body.

c) What causes Goitre.

12. a) Name the part of the brain which controls posture and balance of the body.

b) What happens at the synapse between two neurons?

c) Define reflex action.

13. a) In cross section of human heart, label the following:

i) Aorta

ii) Pulmonary artery

iii) Vena Cava

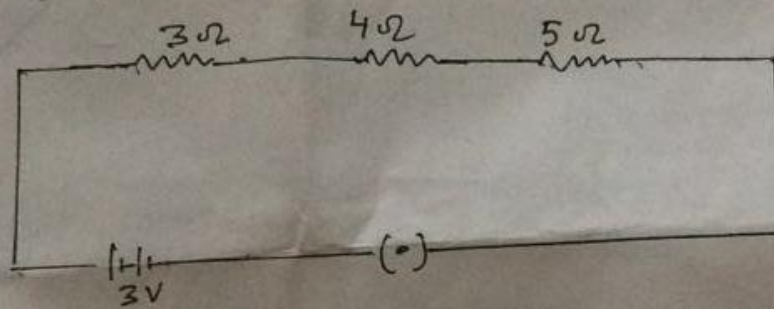
b) How are water and minerals transported in plants?

14. Give reason

a) Parallel connections are preferred over series connections in domestic circuit. (2)

b) Copper and Aluminium wires are used for transmission of electricity. (1)

15. Study the following circuit and calculate the potential difference across  $5\Omega$  resistor.



16. What is solenoid? Draw the pattern of magnetic field lines of the solenoid through which a steady current flows. Mention two ways to increase the strength of the magnetic field of a solenoid.

17. Kapil was feeling proud after the installation of solar water heater on his roof top. He knows that he has contributed towards the conservation of environment. Now answer the following questions:

i) Write one advantage and one limitation of using a solar water heater.

ii) How has Kapil contributed towards the conservation of environment?

iii) State the values that prompted Kapil's action.

18. Differentiate between energy obtained by burning fossil fuels and that obtained as solar energy.

19. In the formation of a compound  $\text{XY}_2$ , atom X donates one electron to each Y atom. Show the electron dot structure of X and Y and their formation of  $\text{XY}_2$ . What is the nature of bond in  $\text{XY}_2$ ?

Write any three properties of  $\text{XY}_2$ . The electronic configurations of these elements X and Y are as follows:

$\text{X} = 2, 8, 2$

$\text{Y} = 2, 7$

(A 2)



20. a) Distinguish between i) Calcination and roasting ii) Minerals and Ores  
 b) Which is a stronger acid, with pH = 5 or pH = 2?  
 c) Name the acid and base from which the following salt has been made NaCl

21. a) List the events occurring in the process of photosynthesis.  
 b) Draw the labeled diagram of digestive system of human being.

22. How does break down of glucose take place by various pathways?

- b) i) why are rings of cartilage present in human throat?  
 ii) Name the respiratory pigment and explain its working?

23. a) Draw magnetic lines of a bar magnet.

b) Two magnetic field lines never intersect each other. Explain.

c) An electric oven of 1.5 kw is operated in a domestic circuit (220v) that has a current rating of 5A. What result do you expect in this case. Explain.

24. a) Derive an expression for equivalent resistance of three resistors connected in series.  
 b) Draw the symbols used for the following

i) a variable resistance

ii) wires crossing over without connection.

c) Find the i) highest ii) the lowest value of resistance that can be obtained by the combination of  $4\Omega$ ,  $8\Omega$ ,  $12\Omega$ , and  $24\Omega$ .

### SECTION B

25. Out of the following substances, the example of alkali is :

(a)  $\text{HNO}_3$

(b)  $\text{NaOH}$

(c)  $\text{AlCl}_3$

(d)  $\text{NaHCO}_3$

26. Which of the following chemical properties are shown by dilute hydrochloric acid ?

(i) Turns blue litmus red.

(ii) Turns red litmus blue.

(iii) Reacts with zinc and a gas is evolved.

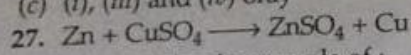
(iv) Reacts with solid sodium carbonate to give brisk effervescence.

(a) (i) and (ii) only

(b) (i) and (iii) only

(c) (i), (iii) and (iv) only

(d) (ii), (iii) and (iv) only



The above reaction is example of :

(a) Decomposition reaction

(b) Double displacement reaction

(c) Oxidation reaction

(d) Displacement reaction

28. Kshama added a few Zn granules to 50 mL of a solution of  $\text{ZnSO}_4$  in a test tube. The

(a) Blue solution turned colourless

(b) Colourless solution turned blue

(c) Pale green solution turned blue

(d) Colourless solution remained colourless

29. To determine the relative reactivities of metals, the type of reaction which has to be conducted is :

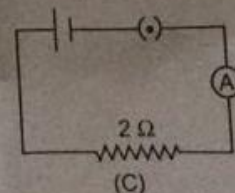
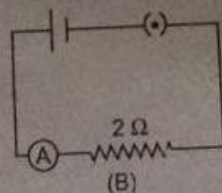
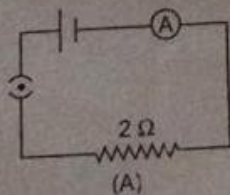
(a) Double displacement

(b) Combination reaction

(c) Displacement reaction

(d) Decomposition reaction

30. A cell, a resistor, an ammeter and a key are arranged in the circuit diagram as shown. The current recorded in the ammeter will be maximum in :

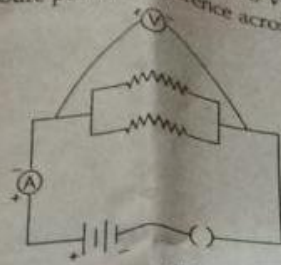


(a) A

(b) B

(a) C

31. A student was performing experiment to find equivalent resistance of a parallel combination of two resistance with the help of a battery of 6 V as per the circuit given below. He should choose a voltmeter to measure potential difference across the combination of range :



- (a) 0-2 V
- (c) 0-3 V

- (b) 0-6 V
- (d) 0-1 V

32. The best results for the experiment, that light is necessary for photosynthesis, would be yielded by using leaves from plant kept for over twenty four hours :

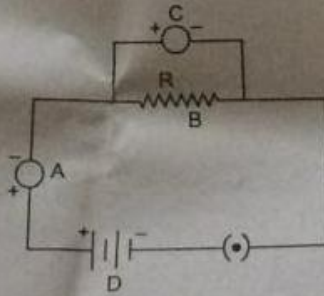
- (a) In a pitch darkroom.
- (b) In a darkroom with the table lamp switched on.
- (c) Outside in the garden.
- (d) Outside in the garden, covered by a glass case.

33. In the experiment to show that  $\text{CO}_2$  is released during respiration, the partial vacuum is created because :

- (a) germinating seeds release  $\text{CO}_2$ .
- (b) germinating seeds utilise  $\text{O}_2$ .
- (c) KOH absorbs  $\text{CO}_2$ .
- (d) KOH absorbs  $\text{O}_2$ .

34. On keeping iron nails in blue coloured copper sulphate solution, it is observed that the colour of the solution turns light green after some time. Give reason for this colour change. Name the type of this reaction.

35. A student draws the following circuit diagrams for the experiment on studying the dependence of current ( $I$ ) on potential difference ( $V$ ) across a resistor. Name the parts labelled as A, B, C and D in the diagram.



36. To prepare a clear temporary mount of the petunia leaf peel showing stomata, from which of the leaf the students should get the peel and why ?

— x —