

Diksha

8201109

FIRST TERMINAL EXAMINATION (CLASS-X)

7/2017

SUBJECT : SCIENCE (SET-A)

Time : 3 Hrs.

Queens Valley
School

M.M.: 80

General Instructions :

- (i) The question paper comprises of two Sections, A and B. You are to attempt both the sections.
- (ii) All questions are compulsory.
- (iii) All questions of Section-A and all questions of Section-B are to be attempted separately.
- (iv) Question numbers 1 to 2 in Section-A are one mark questions. These are to be answered in one word or in one sentence.
- (v) Question numbers 3 to 5 in Section-A are two marks questions. These are to be answered in about 30 words each.
- (vi) Question numbers 6 to 15 in Section-A are three marks questions. These are to be answered in about 50 words each.
- (vii) Question numbers 16 to 21 in Section-A are five marks questions. These are to be answered in about 70 words each.
- (viii) There is no overall choice. However, an internal choice has been provided in 2 questions of 3 marks and one question of 5 marks. A student has to attempt only one of the alternatives in such questions.
- (ix) Question numbers 22 to 27 in Section-B are based on practical skills and are two marks questions.

SECTION-A

- Q1. Why is less heat generated in long electric cables than in filaments of electric bulbs? (1)
- Q2. 'X' is a substance which changes to pink colour on adding phenolphthalein. Identify the nature of 'X'. (1)
- Q3. A student performs an experiment to study the magnetic effects of current around a current carrying conductor with the help of a magnetic compass. He reports that - (2)
- (i) the degree of deflection of the magnetic compass increases when the compass is moved away from the conductor.

- (ii) the degree of deflection of the magnetic compass increases when the current is increased.

Which of the above observations of the student appears to be wrong and why?

Q4. Give reasons for the following : (2)

(a) Curd and sour substances should not be kept in brass and copper vessels.

(b) Dry HCl gas does not change the colour of dry blue litmus paper.

Q5. Differentiate between an artery and a vein on the basis of : (2)

(a) thickness of wall

(b) direction of blood flow

Q6. A geyser is rated 1500W, 220V. This geyser is connected to 220V mains. Calculate - (a) the current drawn (b) the energy consumed in 50 hours (c) the cost of energy consumed at ₹ 2.20 per kWh. (3)

Q7. (a) State the principle of electric generator.

(b) Suggest one change in the construction of AC generator to make it a DC generator.

(c) A rectangular coil of copper wire is rotated in a magnetic field. When does the direction of induced current change? (3)

OR

Two coils A and B of insulated wires are kept close to each other. Coil A is connected to a galvanometer while Coil B is connected to a battery through a key. What happens if - (a) a current is passed through Coil B. (b) the current is stopped by removing the plug key. Explain your answer mentioning the name of the phenomenon involved. (3)

Q8. An electric bulb is rated at 60W, 240V. Calculate its resistance. If the voltage drops to 192V, calculate the power consumed and the current drawn by the bulb. (Assume that the resistance of the bulb remains unchanged) (3)

Q9. (a) Mention the effect of electric current on which the working of an electrical fuse is based.

(b) Draw a schematic labelled diagram of a domestic circuit which has a provision of a main fuse, meter, one light bulb and an earth wire. (3)

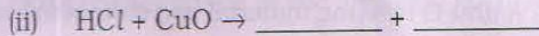
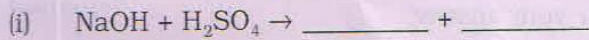
Q10. (a) Metal compound 'A' reacts with dilute hydrochloric acid to produce effervescence. The gas evolved extinguishes a burning candle. Identify

compound 'A' and write a balanced chemical equation for the reaction if one of the compounds formed is calcium chloride. (3)

(b) Name the acid present in ant sting and give its chemical formula.

OR

(a) Complete the following reactions and balance them : (3)



(b) Identify the acid and the base from which calcium chloride is obtained.

Q11. (a) Why is magnesium ribbon rubbed with sand paper before burning? (3)

(b) Identify the type of reaction that will take place when magnesium ribbon is burned in air.

(c) Write the chemical equation for the reaction involved.

Q12. Priya and Ria had gone for a party. Ria ate too much of junk food. After returning home, Ria had stomach pain and irritation. Priya immediately advised Ria to take an antacid. (3)

(a) Give one example of an antacid.

(b) How will the intake of an antacid help Ria in getting relief from pain?

(c) What values are promoted by Priya?

Q13. (a) Give the function of following parts of brain : (3)

(i) Cerebrum

(ii) Hypothalamus

(b) Which part of the brain maintains posture and equilibrium of the body?

Q14. Name the organ that secretes bile juice. Where is this secretion stored in the body? Also, state its function in the digestion of food. (3)

Q15. What are tropic movements in plants? Give any two examples of tropic movements in plants. (3)

Q16. (a) What type of current is given by (i) a dry cell (ii) a power house generator?

(b) What is the frequency of AC supply in India? How many times does it change its direction in one second?

(c) Which current is preferred for long range transmission of electric power and why? (5)

Q17. (a) Two identical immersion heaters are to be used to heat water in a large container. Which one of the following arrangement would heat the water faster :

- (i) connecting the heaters in series with the main supply?
- (ii) connecting the heaters in parallel with the main supply? (5)

Give reason for your answer.

(b) Two metallic wires A and B of same material are connected in parallel. Wire A has length 'l' and radius 'r' and Wire B has length '2l' and radius '2r'. Calculate the ratio of the total resistance of parallel combination and the resistance of Wire A.

Q18. (a) What happens when copper metal is added to silver nitrate solution? (5)
Also, write the balanced chemical equation for the reaction involved.

(b) Identify the substance oxidised and oxidising agent in the following reaction : $3\text{Fe} + 4\text{H}_2\text{O} \rightarrow \text{Fe}_3\text{O}_4 + 4\text{H}_2$.

(c) Define - Rancidity.

(d) During electrolysis of water, name the gas produced at cathode and at anode. (NO DH)

Q19. (a) Write the chemical reaction involved in the formation of caustic soda. Why is it called chlor-alkali process? (5)

(b) Name the salt used in dentistry.

(c) What is water of crystallisation?

(d) Write the chemical name and chemical formula of washing soda.

Q20. (a) Draw a neat diagram of human excretory system and label the following parts : (5)

(i) renal artery (ii) left ureter

(iii) urinary bladder (iv) urethra

(b) Name the part of nephron where the following processes are carried out:

(i) filtration (ii) reabsorption

(c) Enlist the various substances which are reabsorbed into the branch of renal artery in the nephron.

OR

(E-4)

(a) Draw a neat diagram of human respiratory system and label the following parts :

(i) trachea

(ii) nasal cavity

(iii) bronchi

(iv) larynx

(b) How are lungs designed to maximise the area for exchange of gases in humans?

Q21. (a) State the functions of the following hormones in plants :

(5)

(i) Auxin

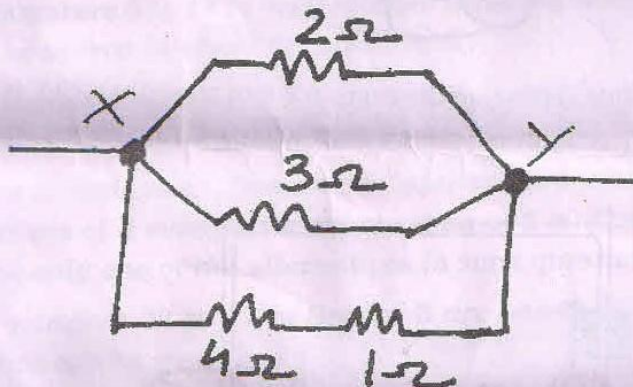
(ii) Cytokinin

(b) Explain the feedback mechanism that controls hormone secretion in humans with the help of an example.

SECTION-B

(2 markers)

Q22. The diagram shows a network of four resistors which are connected to an electric source.



(a) Identify the resistors which are connected in series in this network.

(b) Calculate the equivalent resistance from the above combination of resistors across X and Y.

Q23. (a) Which physical quantity remains same in series?

(b) What does the slope of V-I graph indicate?

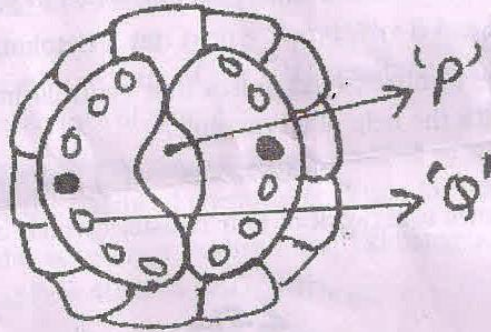
Q24. (a) A solution of barium chloride when mixed with sodium sulphate solution, an insoluble white substance is formed. Write the name and chemical formula of insoluble white substance formed.

(b) Write the chemical reaction involved.

Q25. What will happen -

- (a) if a lighted candle is brought near the mouth of a gas jar containing hydrogen gas?
- (b) if carbon dioxide gas is passed through lime water?

Q26. Observe the given diagram and label the parts marked as P and Q. Also, mention the function of part Q.



Q27. A student while setting up the experiment to show that " CO_2 is evolved during respiration", committed some errors shown in the figure. Mention any two errors.

