INTERNATIONAL INDIAN SCHOOL – DAMMAM
SUMMATIVE ASSESSMENT – 1, 2015
CLASS X – SCIENCE

Time allowed: 3 hours **Max Marks: 90**

SET A

General instructions:

1. The question paper comprises of 2 sections A and B. You are to attempt both the sections.
2. All questions are compulsory
3. All questions of Section A and all questions of Section B are to attempted separately.
4. Question numbers 1 to 3 in Section A are one mark questions. These are to be answered in one word or in one sentence.
5. Question numbers 4 to 6 in Section A are two mark questions. These are to be answered in about 30 words each.
6. Question numbers 7 to 18 in Section A are three marks questions. These are to be Answered in about 50 words each.
7. Question numbers 19 to 24 in Section A are five marks questions. These are to be answered in about 70 words each.
8. Question numbers 25 to 33 in Section B are multiple choice questions based on practical skills. Each question is a one mark question. You are to select one most appropriate response out of the four provided to you.
9. Question numbers 34 to 36 in Section B are question based on practical skills are two marks questions.

Section A

1. What do you mean by peristaltic movement? (1)

2. Differentiate between plasma and lymph. (1)

3. State and define the SI unit of electric current. (1)

4. A piece of thread was tied tightly around an animal's pancreatic duct. The animal subsequently had difficulty in digesting food but did not get diabetes. Explain the reason. (2)

5. When you mix the solutions of Lead (II) nitrate and potassium iodide (2)
   (a) What is the colour of the precipitate formed?
   (b) Name the precipitate.
   (c) Write a balanced equation for this reaction?

6. *Classify the following salts into acidic, basic and neutral.* (2)
   Potassium sulphate, Ammonium chloride, Sodium carbonate, Sodium chloride

7. Which 3 conditions are needed for making a solar heating device? Why? (3)

8. Mention the role of
   i) Artificial kidney
   ii) Diaphragm
   iii) Lymph (3)

9. How are the lungs designed in human beings to maximize the exchange of gases? Why is it dangerous to have low level of hemoglobin in our blood? (3)

10. i. Name the chemical substance that brings about the control and coordination in plants
    ii. Name the hormone responsible for the wilting and falling of leaves.
    iii. Name a plant hormone that acts as growth inhibitor.
    iv. Give one example for the movement of a plant part caused by the loss of water.
    v. Name the two systems that control and coordinate human body.

    (3)

11. And B are two systems of control and coordination of the human body. The messages in the system A are transmitted in the form of chemical substance C which travel comparatively slowly through the blood stream. The substance C is made in tissues D present in the head and trunk of the human body. The messages in the system B are transmitted very quickly in the form of electrical impulses through fibers E. The effect of messages transmitted by system B usually lasts for a much shorter time as compared to those transmitted by system A. (3)
    i) Name the system A.
    ii) Name the chemical substance C.
    iii) What is the tissue D?
    iv) Name the system B.
    v) Name the fibers E.
    vi) State whether the system A controls the working of system B or system B controls the working of system A?

12. Explain the formation of i) Calcium oxide ii) Magnesium chloride by the transfer of electrons using electron dot structure. (Atomic number of Calcium=20, oxygen=8,Magnesium=12,Chlorine=17) (3)

13. Translate the following statements into chemical equations and balance them (3)

    (a) Silver bromide on exposure to sunlight decomposes into silver and bromine.
    (b) Sodium metal reacts with water to form sodium hydroxide and hydrogen gas.
    (c) Dilute hydrochloric acid reacts with sodium carbonate to give sodium chloride, water and carbon dioxide.

14. In one of the industrial processes used for the manufacture of sodium hydroxide, a gas X is formed as by-product. The gas X reacts with lime water to give a compound Y which is used as a bleaching agent in chemical industry. Identify X and Y giving the chemical equation of the reaction involved. (3)

15. With a labelled diagram, describe an activity to find out the conditions under which iron rusts. (3)

16. With the help of a labelled circuit diagram, derive an expression for the equivalent resistance of a combination of 3 resistors of resistance R_1, R_2 and R_3 joined in series. (3)

17. Calculate the resistance of a copper wire 1 km long and 0.50 mm diameter if the resistivity of copper is $1.7 \times 10^{-8}\ \Omega$ m. (3)

18. One day Sohan went to his friend's house. He was surprised to see that most of the electrical appliances at his house were functional. For eg, tube light and fan in all rooms, 2 TVs, computer, lights of toilet and kitchen were switched on. Sohan told his friend not to waste electricity. (3)

a) Why is Sohan's friend's way of consuming electricity not acceptable?
b) Will it affect the economic condition of the family and nation?
c) What value is shown by Sohan?

19. a) Draw a neat diagram of the human excretory unit. Name and label the following parts.

i) The part that functions as the filtering unit.
ii) The part through which the pure blood is sent from the kidney.
iii) The part that collects the waste materials from the blood.
iv) The part which reabsorbs glucose, amino acids etc. from the tubule. (3)

b) In a state the government insists the authorities to install hydroelectric power plant for the energy source. What awareness is the government trying to convey to the people?
What is the principle behind a hydropower plant? Mention 2 advantages of using a hydro power plant? (2) (5)

20. (a) Write the chemical name of the coating that forms on silver and copper articles when these are left exposed to moist air. (5)
(b) What is galvanisation? What purpose is served by it?
(c) Define an alloy.
d) How are alloys prepared?
e) How do the properties of iron change when
(i) a small quantity of carbon is mixed with it.
(ii) Nickel and chromium are mixed with it.

21. (a) Mention the PH range within which our body works. (5)
(b) Explain how antacids give relief from acidity. Write the name of one such antacid.
(c) Fresh milk has a PH of 6. How does the PH change as it turns into curd? Explain your answer.
(d) A milkman adds a very small amount of baking soda to fresh milk. Why does this milk take a longer time to set as curd.
(e)Mention the nature of toothpaste. How do they prevent tooth decay?

22. (a) Two identical wires one of nichrome and the other of copper are connected in series and a current I is passed through them. State the change observed in the temperatures of the two wires. Justify your answer. (5)
(b) An electric bulb is rated 220V and 100W. When it is operated on 110 V, what will be the power consumed?

23. a) Convert kilowatt-hour into joule. (5)
b) Write two factors on which resistance of a conductor depend?
c) Will current flow more easily through a thick wire or a thin wire of the same material, when connected to the same source. Why?
d) Write two advantages of parallel connection in a household circuit.
e) Write one main difference between alternating current and direct current.

24. (a) Explain the function of an earth wire. Why is it necessary to earth metallic appliances? (5)
(b) List two precautions to be taken to avoid overloading in the domestic circuit.
(c) Explain two different ways to induce current in a coil.

Section B

25. The stomatal apparatus comprises (1)
    a) Guard cells b) stomata and guard cells
    c) stomata, guard cells and accessory cells d) guard cells and chloroplast

26. One similarity between guard cell and palisade cell is in (1)
    a) Shape b) intercellular space in between them
    c) presence of chloroplast d) their role in plant

(1)

27. The correct method of finding the pH of solution is to
    a) heat the solution in the test tube and expose the pH paper to the vapours formed
    b) Pour solution from the test tube on pH paper
    c) drop the pH paper into the solution
    d) add a drop of the solution on the pH paper using a dropper

28. A solution in test tube A turns red litmus blue, evolves hydrogen on reaction with Zinc and does not react with sodium carbonate, whereas solution in test tube B turns blue litmus red, liberates hydrogen on reaction with Zn and CO_2 with Na_2Co_3. Solution taken in A and B are (1)
    a) acid in A, base in B b) base in A , acid in B
    c) base in both A and B d) acid in both A and B

29 On heating ferrous sulphate crystals, one would get (1)
    a)sweet smell b)rotten smell
    c)irritating choking smell d)no smell

30. Four students measured the pH values of water, lemon juice and sodium bicarbonate solution. Correct sequence of solutions in decreasing order of pH value would be (1)
    a) water, lemon juice, sodium bicarbonate
    b) lemon juice, water, sodium bicarbonate
    c) sodium, bicarbonate, water, lemon juice
    d) water, sodium bicarbonate, lemon juice

31. The colour of pH paper turned red when it was dipped in a sample. The sample could be (1)
    a) dilute NaOH solution b) tap water
    c) dilute HCl solution d) dilute $NaHCO_3$ solution

32. In a voltmeter there are 20 divisions between 0 and 0.5v.The least count of the voltmeter is (1)
    a)0.020v b)0.025v c)0.050v d)0.250v

33. A student did the experiment to find the equivalent resistance of two given resistors R_1 and R_2, first when they are connected in series and next when they are connected in parallel. The two values of the equivalent resistance obtained by him were R_s and R_p respectively. He would find that (1)
    a) $R_s > R_p$ b) $R_p > R_s$
    c) $R_S = R_p = \frac{R_1 + R_2}{2}$ d) $R_s = R_p$ but not equal to $\frac{R_1 + R_2}{2}$

34 During the experiment a student takes the leaf from boiling water and put it in alcohol in a water bath and starts boiling. (2)
    a) Why did the teacher stop the student from boiling the leaf in alcohol?
    b) Why is it necessary to boil the leaf in alcohol?

35 An iron nail is dipped in the solution of copper sulphate for about 30 minutes, state the change in colour observed. Give reason for the change. (2)

36. How is an ammeter connected in a circuit to measure the current? Justify your answer. (2)