

Name Nitesh Kumar Singh Class & Section X-A Roll No. 21

FIRST TERM EXAMINATION—2017-18

CLASS-X

SUBJECT—GENERAL SCIENCE

Time : 3 Hours

M.M. : 80

General Instructions :

1. The question paper comprises of two sections A and B. You are to attempt both the sections.
2. All questions are compulsory. However internal choice has been provided in question nos. 8, 15 and 20.
3. Question nos. 1 and 2 of section A are of one mark each. These are to be answered in one word or one sentence.
4. Question nos. 3 to 5 are of two marks each. These are to be answered in about 30 words.
5. Question nos. 6 to 15 are of three marks each. These are to be answered in about 50 words.
6. Question nos. 16 to 21 are of five marks each. These are to be answered in about 70 words.
7. Question nos. 22 to 27 of section B are of 2 marks each and based on practical skills.
8. Attempt the given questions in the respective answer sheets :
Physics : Ques. nos. 3, 4, 6, 7, 8, 18, 19, 24 and 25
Chemistry : Ques. nos. 1, 12, 13, 14, 15, 16, 17, 22 and 23
Biology : Ques. nos. 2, 5, 9, 10, 11, 20, 21, 26 and 27
9. The sheets must be tied together in the above order before submission.

Section-A

1. Name : (1)
 - (a) A metal which melts if you keep it on the palm.
 - (b) A liquid non-metal

2. Name the energy currency in the living organism and when is it produced in animals ? (1)
3. It is established that an electric current through a metallic conductor produces a magnetic field around it. Is there a similar magnetic field produced around a thin beam of moving :

- (i) alpha particles (ii) neutrons (2)

Justify your answer.

4. Magnetic field lines of two magnets are shown in figure (a) and (b). Select the figure that represents the correct pattern of field lines. Give reason for your answer. Also name the poles of the magnets facing each other. (2)

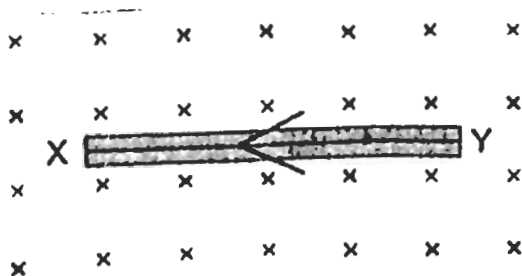


5. Give reason for the following :

- (i) ventricles are thick walled
 (ii) Blood goes only once through the heart in fishes. (2)

6. (a) Why is the series arrangement not used for domestic circuit ?
 (b) State one advantage of alternating current over direct current.
 (c) Though the same current flows through line wires and the filament of a bulb, yet only the latter glows. Why ? (3)

7. Crosses (x) represent a uniform magnetic field directed into the paper. A conductor XY placed in the field carries current in Y to X direction. Find the direction of the force experienced by the conductor. Name the rule you applied. What will happen to the direction of force if the direction of field and direction of current both are reversed ? (3)



8. An NGO is opposing the construction of a dam on a river flowing through the number of villages and forest for the purpose of generating electricity while the government was insisting that it would bring a number of benefits for the villagers once the project gets completed.

- (a) Describe the value exhibited by NGO.
- (b) Explain any two concerns of NGO due to which it is opposing construction of dam. (3)

OR

You have studied that artificial satellites and space probes like Mars Orbiter use solar cells as the main source of energy. Now answer the following questions:

- (a) Why is the domestic use of solar cells limited ?
- (b) How is the use of solar cells better than using solar devices such as solar cooker, solar water heater etc. ?
- (c) Should we prefer the use of solar energy instead of fossil fuels ? Give reason for your answer. (3)

9. List in tabular form three differences in the movement of leaves of a touch me not plant when touched and movement of a tendril towards a support. (3)

- 10. (a) Name the hormones secreted by thyroid gland and state its function.
- (b) Why is it important for us to have iodised salt in our diet ?
- (c) Name the disease caused due to the deficiency of iodine. (3)

11. (a) Give any two ways in which non-biodegradable substances would affect the environment.

- (b) List two functions of an ecosystem. (3)

12. Give reason for the following :

- (a) When stung by bees, applying a solution of baking soda gives relief.
- (b) HCl (aq) shows acidic character but dry HCl (g) does not.
- (c) Plaster of Paris is stored in moisture proof containers. (1+1+1)

13. (a) A sanitary worker uses a white chemical having strong smell of chlorine gas to disinfect the water tank. Identify the chemical compound and write its chemical formula. Write a balanced chemical equation for its preparation.
- (b) What is the chemical formula of washing soda ? State whether it is an acidic or basic salt ? (2+1)
14. Sheetal observed that nothing happened to her chemistry teacher's gold ring when she accidentally spilled some hydrochloric acid on it. Her teacher immediately washed her hands with soap. Sheetal applied some ointment on the teacher's hands to reduce the burning sensation.
- (a) Metal surfaces get corroded by acids. Then why nothing happened to the gold ring ?
- (b) Name the solution which can dissolve gold and write its composition.
- (c) Why is gold mixed with small quantities of silver and copper for making jewellery ? (3)
15. (a) Write balanced chemical equations for the reaction taking place when zinc carbonate is calcined.
- (b) What is the role of aluminium powder in thermite process ? Write chemical equation for the process and give its application. (1+2)

OR

Give reason :

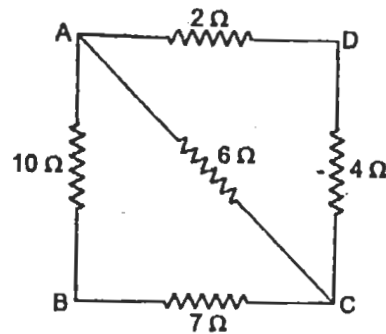
- (a) Ionic compounds have high melting points.
- (b) Hydrogen gas is not released when most metals react with nitric acid.
- (c) Sodium and potassium are stored under kerosene. (1+1+1)
16. (a) A solution has a pH of 7. How will you increase its pH ?
- (b) What is the pH range of a solution which liberates carbon dioxide on reaction with baking soda ? Justify.
- (c) Write balanced chemical equation for the reaction taking place when electric current is passed through brine solution. Name the process. Name the gases produced at the anode and at the cathode. (1+1+3=5)

along with the equations involved.

- (b) Name the ore and the process of concentration of the ore.
- (c) Draw a labelled diagram for refining of the metal. (5)

18. (a) Establish a relation for the equivalent resistance of two resistors connected in parallel.

- (b) Determine the equivalent resistance between A and B in the following circuit. (5)



19. (a) Draw a well labeled diagram showing the magnetic field pattern produced due to a current carrying circular loop.

- (b) Two circular coils P and Q are kept close to each other, of which coil P carries a current.

(i) If coil P is moved towards Q, will some current be induced in coil Q? Give reason for your answer and name the phenomenon involved.

(ii) What happens if coil P is moved away from Q? (5)

20. (a) Write the names and functions of any two parts of hind brain.

- (b) Show with the help of a flow diagram the path of reflex action. (5)

OR

(a) Draw a neat diagram of human brain and label the part which controls

(i) Voluntary action

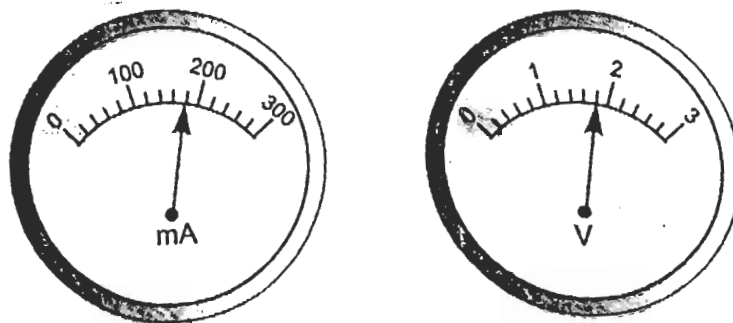
(ii) Involuntary action

- (b) How is the vital organ 'brain' protected in the human body? (5)

21. (a) There are four major types of phytohormones 'A', 'B', 'C' & 'D'. 'A' promotes the wilting and falling of leaves. 'B' is responsible for the phenomenon of cell division in plants. 'C' is involved in shoot extensions and 'D' helps in breaking the dormancy of seeds and buds. Identify A, B, C and D.
- (b) Draw a neat diagram of human excretory system and label the part (a) which produces urine.
- (b) Which removes urine from the body.
- (c) State the term for transport of food from leaves to other parts of the plant. (5)

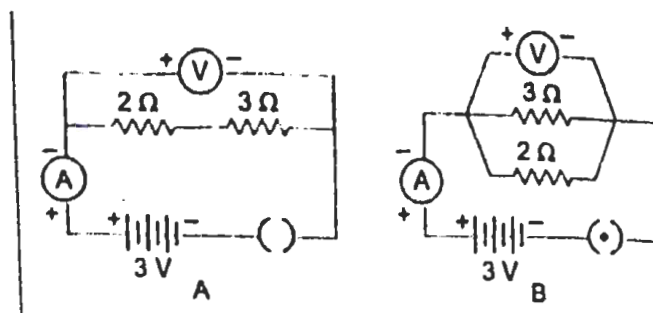
Section-B

22. A white solid X is used in white wash. X reacts with water to give Y.
- (a) Identify X and Y. (2)
- (b) What do you observe when X reacts with water ?
23. A metal plate M is dipped in two beakers A and B containing copper sulphate solution and iron sulphate solution respectively. A reddish brown deposit is observed in beaker A and no change in beaker B.
- (a) Compare the reactivity of metal M with iron and copper. (2)
- (b) Predict whether metal M will be able to displace zinc from its salt solution.
24. The current flowing through a resistor connected in an electric circuit and the potential difference developed across its ends are shown in the given diagram.



Find the value of resistance of the resistor in ohms. (2)

25. Find the voltmeter readings for the circuits A and B shown below : (2)



26. Two green plants are kept in oxygen free containers, one in dark and the other in continuous light. Which one will live longer ? Give reason for your observation. (2)

27. Why is some KOH placed in the flask with germinating seeds in the experiment to demonstrate occurrence of respirations in germinating seeds ? (2)

□□□

T