विद्या सर्वार्थ साधिका

ANANDALAYA

PERIODIC TEST – 2

Class : X

Subject: Science M.M : 60

Date: 28/09/2019 Time : 2 ½ Hours

General Instructions:

1. All questions are compulsory. There are 24 questions in all.
2. Question numbers 1 to 12 are objective type questions and short answer type which carry 1 mark each.
3. Question numbers 13 to 18 are short answer questions and carry 3 marks each.
4. Question numbers 19 to 24 are long answer questions and carry 5 marks each.

1. The unit of electrical energy is (1)
   (a) W (b) kW (c) kWh (d) E

2. _____ is a source of energy not obtained from Sun either directly or indirectly. (1)
   (a) Biogas (b) Energy from waves (c) Geothermal energy (d) Energy from coal

3. Aluminium does not oxidise readily in air because: (1)
   (a) It is high in the electrochemical series.
   (b) It is low in the electrochemical series.
   (c) The metal does not combine with oxygen
   (d) The metal is covered with a layer of oxide which does not rub off.

4. In one of the industrial processes used for the manufacture of sodium hydroxide, a gas X was formed as by-product.The gas X reacts with lime water to give a compound Y which is used as bleaching agent in chemical industry. The compound X and Y is (1)
   (a) H_2 and $NaHCO_3$ respectively (b) CO_2 and $CaOCl_2$ respectively
   (c) Cl_2 and $CaOCl_2$ respectively (d) Cl_2 and $NaHCO_3$ respectively

5. A common product in aerobic and anaerobic respiration which is further broken down in aerobic respiration is (1)
   (a) glucose (b) pyruvate (c) water (d) lactic acid

6. If pancreatic amylase is lacking in pancreatic juice, which of the following event in the duodenum will be affected? (1)
   (a) Proteins breaking down into amino acid.
   (b) Sugars breaking down into glucose.
   (c) Fats breaking down into fatty acids.
   (d) Changing the food pH into alkaline.

7. When a current carrying conductor is kept over a magnetic compass and the electric current flows from north to south, the magnetic needle is deflected towards the _____. (1)

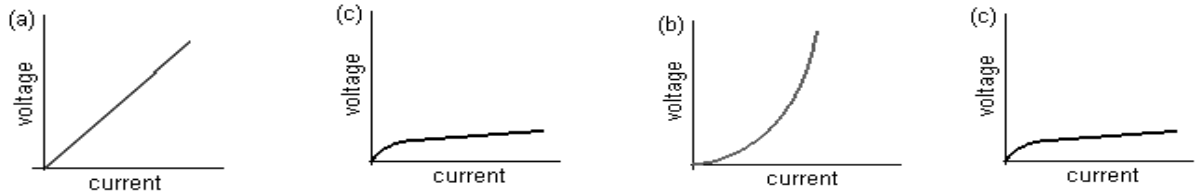
OR

A conductor carrying electric current flows from north to south is placed in a magnetic field pointing towards east and then the force on the conductor will be in _____ direction.

8. Assertion : Metals are sonorous (1)
Reason: They are generally brittle in solid state. They break into pieces when hammered.
(a) Both the assertion and the reason are correct and the reason is the correct explanation of the assertion.
(b) Both the assertion and the reason are correct but the reason is not the correct explanation of the assertion.
(c) The assertion is true but the reason is false.
(d) The statement of the assertion is false but the reason is true.

9. Assertion: Adrenaline is known as emergency hormone. (1)
Reason: This hormone prepares a person to face situations like stress, anger, danger etc.
(a) Both the assertion and the reason are correct and the reason is the correct explanation of the assertion.
(b) Both the assertion and the reason are correct but the reason is not the correct explanation of the assertion.
(c) The assertion is true but the reason is false.
(d) The statement of the assertion is false but the reason is true.

10. In the experiment on studying the dependence of current (I) on the potential difference (V) four students plotted the following graphs between (V) and (I) as per their respective observations. Which one is a correct observation? Support your answer. (1)



11. Why is Hydrochloric acid a stronger acid than acetic acid? (1)

12. Which are the two parts in the dialysing machine that corresponds to glomerular filtrate and walls of nephron tubules? (1)

13. Derive the equivalent resistance when two resistors are placed in (a) Parallel and (b) Series . (3)

14. (a) Draw a labeled diagram of field lines of the magnetic field through and around a current carrying solenoid. (3)
(b) The field lines inside the solenoid are in the form of parallel straight lines. Comment.

15. Aluminium oxide and zinc oxide react with both acids and bases to produce salt and water.What are these oxides called? Write chemical equations in each case. (3)

OR

Distinguish between the following:
(a) Electrolytic reduction and Electrolytic refining
(b) Mineral and Ore
(c) Alloys and Amalgams

16. You are provided with magnesium ribbon and sulphur powder. Explain with the help of an activity that metal oxides are basic and oxides of non-metal oxides are acidic. (3)

17. (a) Organisms having well developed Central Nervous System also perform reflex action. What is its significance in them? (3)
(b) What is a reflex arc?
(c) A child was suddenly pricked by a thorn while playing on the ground. Draw the reflex arc associated with this action and label the significant parts.

18. The phytohormones can bring about growth promoting and growth retarding changes in plants. In view of the statement, answer the following questions: (3)
(a) Name a hormone that has growth retarding activity and its specific function.
(b) Name two phytohormones that have growth promoting activity. Mention how they bring about growth.

19. (a) What is electromagnetic induction? (5)
(b) When is the induced current found to be highest in an electric generator?
(c) With the help of activity establish the fact that current is induced in secondary coil when magnetic field is varied in the primary coil.

20. Give reason. (5)
(a) We cannot say solar cells are cleaner than other sources.
(b) Bio-waste and sewage waste are renewable sources of energy.
(c) Dams, once upon a time were considered temples of modern India but not anymore.
(d) Burning of fossil fuels have disadvantages apart from being non – renewable.
(e) Energy is neither created nor destroyed, but we have energy crisis.

21. (a) Name the acid present in following natural sources:- (5)
(i) Vinegar (ii) Tomato (iii) Tamarind
(b) Classify the following salts into acidic, basic and neutral:
Potassium sulphate, ammonium chloride, sodium carbonate, sodium chloride.

22. (a) Write Electron dot diagrams of chlorine (Atomic Number=17) and Calcium (At. No. = 20). (5)
Show the formation of calcium chloride by the transfer of electrons.
(b) Identify the nature of the above compound and explain three physical properties of such a compound.

23. Describe the process of filtration of blood in nephrons. Draw a simple diagram of nephron and label Branch of renal artery and Renal vein, Bowman's capsule and Henle's loop. (5)

24. Anu's grandmother complained of tiredness, dry mouth and weight loss. On medical checkup, it was told that she was suffering from Diabetes. (5)
(a) Which hormone is involved in this problem?
(b) Which gland secretes this hormone?
(c) What life style should she adopt to maintain her sugar level?

OR

(a) Explain the endocrine function of brain.
(b) Draw a diagram of human brain and label the following parts.
I. Cerebrum II. Pons. III. Medulla oblongata. IV. Cerebellum.