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ST. GEORGE'S SCHOOL, ALAKNANDA
MID TERM EXAMINATION (SA-I) 2015-2016
SUBJECT - SCIENCE
CLASS - X

X-E
18

DATE: 18.9.15

M.M : 90

TIME: 3 HRS

NO. OF PAGES: 05

General Instructions :

All questions are compulsory

- (i) Question numbers 1-3 in section A are one mark each.
- (ii) Question numbers 4-6 in section A are two marks each.
- (iii) Question numbers 7-18 in section A are three marks each.
- (iv) Question numbers 19-24 in section A are five marks each.
- (v) Question numbers 25-33 in section B are multiple 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.
- (vi) Question numbers 34-36 in section B are two marks questions based on practical skills. These are to be answered in about 30 words each.

Q1. A particular hormone requires iodine for its synthesis. Name the endocrine gland which secretes this hormone and state its location in the human body. ✓

Q2. State the direction of magnetic field in the following diagram. ✓



Q3. List two nutrients that the slurry left behind in a bio-gas plant contains. ✓

Q4. When iron rod is kept in CuSO_4 for some time, a brown coating is formed on the iron rod. Explain why? What change will you observe in the colour of the solution? Give equation also. ✓

Q5. What is decomposition reaction? Give an example of thermal Decomposition and electrolytic decomposition? ✓

Q6. What is the role of sieve tubes and companion cells in the movement of food in a plant? ✓

Plaster of Paris
 $\text{CaSO}_4 \cdot \frac{1}{2} \text{H}_2\text{O}$

Q7. Identify the compound of calcium which is used for plastering of fractured bones. With the help of chemical equation, describe how this compound is prepared. What special precaution should be taken during the preparation of this compound? $373 \text{ K} / 100^\circ\text{C}$

Q8. Seven solutions A, B, C, D, E, F, and G when tested with universal indicator showed pH as 1, 2, 7, 9, 11, 13 and 14 respectively. Which solution is (a) neutral? (b) strongly alkaline? (c) strongly acidic? (d) weakly acidic? (e) weakly alkaline? (f) arrange the pH in increasing order of hydrogen ion concentration

Q9. Identify the compound of calcium which is yellowish white powder and is used for disinfecting drinking water. How is it manufactured from Lime? Write the chemical equation for the reactions involved. CaCO_3 $\text{Ca(OH)}_2 + \text{Cl}_2 \rightarrow \text{CaOCl}_2$

- Q10 (a) What are olfactory indicators?
(b) What is rancidity?
(c) Why should water never be added drop wise to concentrated sulphuric acid?

Q11. Name any three plant hormones and specify one function of each.

Q12. What is lymph? What is its composition? Mention any two functions of lymph.

Q13. Leaves of a healthy potted plant were coated with Vaseline to block the stomata. Will this plant remain healthy for long? State three reasons for your answer.

Q14. How many identical 2W bulbs can be safely connected to a 220V supply. Explain with the help of a circuit diagram. $P = V \times I$

Q15. With the help of a diagram of experimental set up describe an activity to show that the force acting on a current carrying conductor placed in a magnetic field increases with increase in field strength.

Q16. What are fossil fuels? List four disadvantages of burning fossil fuels?

Q17. Nikhil and Neha went to a remote village in Kerala to meet their grand mother. They were surprised to see a biogas plant in Mr Nair's house in the neighbourhood. There were plenty of livestock and the household used cooking gas from the plant. Also their farm had rich vegetation. They contacted Sarpanch of the village and convinced him to set up a bio-gas plant for village community

- (a) Mention the values displayed by Mr. Nair, Nikhil and Neha.
(b) Explain the possible arguments given by Nikhil and Neha to Sarpanch to convince him to set up a Community bio-gas plant

Q18. State the significance of the following devices in domestic circuits.

- (i) Main Switch ✓
- (ii) Mains fuse ✓
- (iii) Electricity Meter ✓

Q19. Give the extraction of metals low in reactivity series? Write balanced chemical equations.

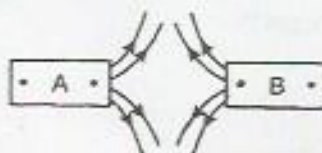
Q20. (a) What will happen if the solution of sodium hydrogen carbonate is heated? Give the equation for the reaction involved.

(b) Name & explain the process of refining of copper with diagram? ✓

Q21. (a) How does feedback mechanism help in controlling the timing and amount of hormones released in our body. Explain with an example.

(b) Represent schematically the path of reflex action like sneezing.

Q22. (a) Magnetic field lines of two bar magnets A and B are as shown. Name the poles of the magnets facing each other.



(b) Two magnetic field lines never intersect each other. Why? ✓

(c) How does the strength of the magnetic field at the centre of a current carrying circular coil depend on the

- (i) radius of the coil,
- (ii) number of turns in the coil
- (iii) strength of the current flowing in the coil ?

Q23. Distinguish between kilowatt and kilowatt hr. For a heater rated at 4.4KW ; 220V

Calculate the

- (i) Current drawn by the heater
- (ii) Resistance of the heater element
- (iii) Energy consumed by the heater in 5 hours
- (iv) Cost of running the heater if 1kWh costs Rs.8.50.

Q24. (a) Why an ammeter likely to burn out if you connect it in parallel? ✓

(b) List two factors on which resistance of a conductor depends. ✓

(c) resistance of a metal wire of length 1m is 104Ω at 20°C . If the diameter of the wire is

0.15mm, find the resistivity of the metal at that temperature.

Q25. State which of the following metals could not give hydrogen when added to dilute hydrochloric acid.

- (i) iron (ii) copper (iii) magnesium (iv) zinc

Q26. The first colour on the colour chart of pH strip from the top is:

- (i) Red (ii) Orange (iii) Blue (iv) Yellow

Q27. A few pieces of granulated zinc were added to copper sulphate solution in a test tube. After an hour, the colour of the solution changed from:

- (i) light green to blue (ii) light green to colourless (iii) blue to light green (iv) blue to colourless

Q28. Which metal is used in the thermite process?

- (A) Iron
(B) Copper
(C) Aluminum
(D) Zinc

Q29. Which of the following will turn pH paper to red?

- (i) Milk of magnesia
(ii) Baking Soda
(iii) Oxalic acid solution
(iv) NaCl solution

Q30. In our domestic electric circuit the component which is always connected in series is:

- (a) Fuse wire (b) Earth wire
(c) Live wire (d) Connecting wire

Q31. A wire of resistance R is cut into ten equal parts which are then joined in parallel. The equivalent resistance of the combination is

- (a) $0.01R$ (b) $0.1R$
(c) $10R$ (d) $100R$

Q32. The stain used to see the stomata during temporary mount of a leaf peel is

- (a) Safranin (b) methylene blue

$$R' = \frac{R}{10} + \frac{10}{R} + \frac{10}{R}$$
$$\frac{1}{R'} = \left(\frac{10}{R} \right) \cdot 10 = \frac{100}{R}$$
$$R' = \frac{R}{100}$$

(c) cotton blue

(d) acetocarmine

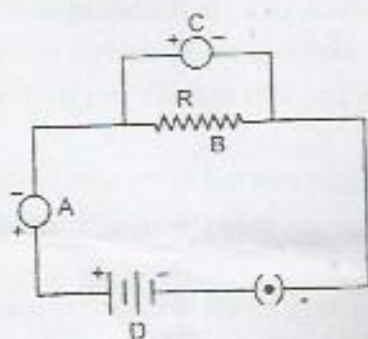
Q33. The teacher instructed a student to keep a healthy potted plant in a dark room for 24 hours prior to an experiment on photosynthesis. The purpose of placing it in a dark room is

(a) To increase the intake of CO_2 (b) to activate the chloroplasts in the leaves

(c) to destarch the leaves (d) to denature the enzymes in the leaves

Q34. What is corrosion? Give examples.

Q35. 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 labeled as A, B, C and D in the diagram



Q36. Mention any two precautions to be taken while performing the experiment of studying the process of respiration in germinating seeds.