

AMRITA VIDYALAYAM
Term -I (2017-18)

CLASS : - X

TIME ALLOWED:- 3 hrs

SUBJECT:- Science
MAX.MARK:- 80

GENERAL INSTRUCTIONS:-

- All questions are **compulsory**.
- All questions of **Section-A** and all questions of **Section-B** are to be attempted separately.
- Question numbers **1 to 2** in **Section-A** are **one mark** questions. These are to be answered in **one word** or in **one sentence**.
- Question numbers **3 to 5** in **Section-A** are **two marks** questions. These are to be answered in about **30 words** each.
- Question numbers **6 to 15** in **Section-A** are **three marks** questions. These are to be answered in about **50 words** each.
- Question numbers **16 to 21** in **Section-A** are **five marks** questions. These are to be answered in about **70 words** each.
- Question numbers **22 to 27** in **Section-B** are questions based on practical skills are two **marks** questions.

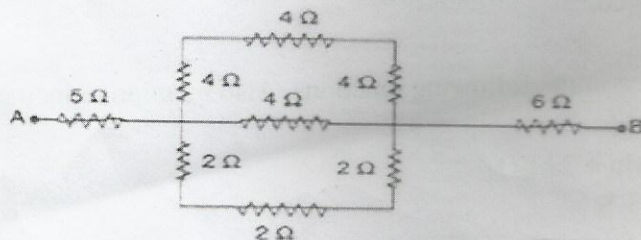
Section A

1. Why does a piece of bread taste sweet when chewed for some time? 1
2. Night blooming flowers are white whereas the day blooming flowers are brightly colored. Why? 1
3. An electric iron has a rating of 750W, 220 V. Calculate 2
(a) The current passing through it.
(b) Its resistance, when in use.
4. Balance the following chemical equations : 2
(a) $\text{KMnO}_4 \longrightarrow \text{K}_2\text{MnO}_4 + \text{MnO}_2 + \text{O}_2$
(b) $\text{AgNO}_3 + \text{K}_3\text{PO}_4 \longrightarrow \text{Ag}_3\text{PO}_4 + \text{KNO}_3$
5. Why is the flow of signals in a synapse from axonal end of the neuron to dendrite end of another neuron but not in reverse direction? 2
6. (a) Why does the cord of an electric heater not glow while the heating element does? 3
(b) Calculate the electrical energy produced in 5 minutes when a current of 2A is sent through a conductor by a potential difference of 50 volts.
(c) An electric bulb draws a current of 0.2 A when it operates at 220 V. Calculate the amount of electric charge flowing through it in 3600 sec.
7. (a) Why mostly all metallic electrical home appliances like refrigerator, toaster, oven, AC, mixer etc. are provided with a wire having green insulation? 3
(b) An electric iron of 2kW power rating is operated in a domestic circuit (220 V) that has a current rating of 5 A. What result do you expect? Explain
8. (a) Explain briefly two different ways to induce current in a coil. 3
(b) Draw an appropriate schematic diagram showing common domestic circuits and also discuss the importance of fuse in the circuit
9. Name the substance oxidized in the following reactions. Also mention reducing agent and oxidizing agent in each reaction : 3
(a) $3\text{MnO}_2 + 4\text{Al} \longrightarrow 3\text{Mn} + 2\text{Al}_2\text{O}_3$
(b) $\text{H}_2\text{S} + \text{Cl}_2 \longrightarrow 2\text{HCl} + \text{S}$

10. A metal 'M' which is used in thermite process, when heated with oxygen gives an oxide which is amphoteric in nature. Identify 'M' and its oxide. Write reactions of this oxide with each of the following a) hydrochloric acid b) sodium hydroxide. 3
11. a) Show the formation of calcium chloride by the transfer of electrons. 3
 b) How it is that ionic compounds do not conduct electricity in solid state but they do so when in molten state.
12. (a) Briefly describe what will happen if mucus is not secreted by gastric glands. 3
 (b) Explain the process of breakdown of glucose in a cell in the presence of oxygen.
 (c) Why do the wall of trachea not collapse when there is less air in it?
13. (a) Name the plant growth hormone synthesized at the shoot tip. 3
 (b) Explain why a plant shoot bends towards light during its growth.
14. Radhika and Sita compared the fruits (Mango) of their Mango trees in their respective backyards of the houses and found that there was difference in the structure and the taste of fruits. Mango bought by Radhika was not sweet and it was small and other one brought by Sita was bigger and tasty. Sita takes some branches of her mango tree to Radhika's place and Explain the procedure. 3
- (a) Which method Sita has suggest for getting good quality fruits.
 (b) Write any two advantages of method suggested by Sita.
 (c) Mention the values expressed by Sita.
15. (a) What will happen if both the adrenal glands are removed from a human body? 3
 (b) Write two points of difference between cerebrum and cerebellum.
16. (a) What do you understand by the term 'an AC supply of 50 hertz'? 5
 (b) Draw a labeled diagram of a simple motor and explain its working.
17. (a) What is the difference between resistance and resistivity? A piece of wire of resistance 20Ω is drawn out so that its length is increased to twice its original length. Calculate the resistance and resistivity of the wire in the new situation. 5
 (b) Out of two electric bulbs of 50 W -220 V and 100 W- 220 V, which one will glow brighter when they are connected
 i) in series, and ii) in parallel?

OR

- a) In the given electric circuit find out the following.
- i) The total effective resistance of the circuit,
 - ii) Current flowing through 5Ω resistor
 - iii) Power dissipated in 6Ω resistor



- b) What are the advantages of connecting electrical devices in parallel with the battery instead of connecting them in series?

Define the following terms :

- (i) Electrolytic refining
 - (ii) Ore
 - (iii) Gangue
- (b) Write balanced chemical equations for extraction of copper from its sulphide ore.

OR

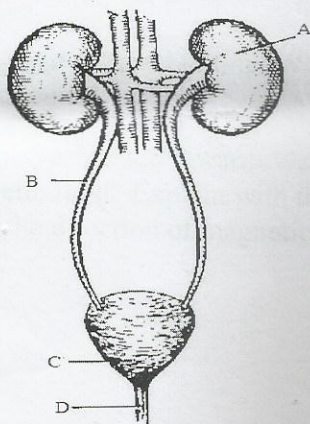
- (a) In the electrolytic refining of a metal M, what will you take as anode and cathode?
- (b) With the help of chemical equations, explain how zinc metal is extracted from its sulphide ore.
- (c) What are constituents of solder? Which property of solder makes it suitable for welding of electrical wires.

19. (a) How is pH of an acidic solution influenced when it is diluted? 5
- (b) 10 ml of water and 5 ml of sulphuric acid are to be mixed in a beaker :
- (i) Write the method that should be followed for the above process.
 - (ii) Why should this method be followed?
- (c) Giving reason for each, state which of the following will conduct electricity and which will not:
- (i) a solution of glucose
 - (ii) dilute nitric acid

20. (a) Explain why: 5
- i. Veins have thin walls as compared to the arteries.
 - ii. Rate of breathing in aquatic organisms is much faster than in terrestrial organisms.
 - iii. Alveoli have highly folded membrane.
- (b) Lack of oxygen in muscles often leads to cramps in cricketers. Explain why?

OR

a) Study the following diagram and answer the questions that follow:

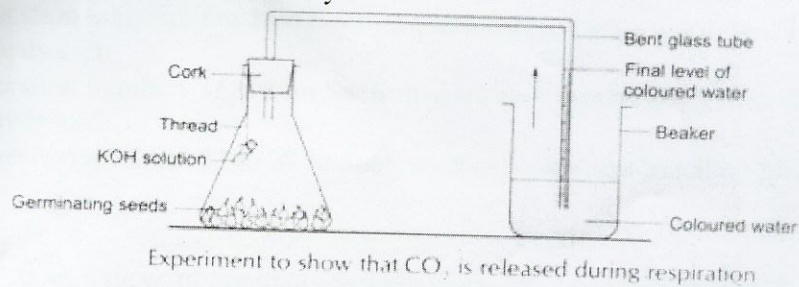


- i) Label B and D.
 - ii) Name the basic functional unit of part A.
 - iii) Mention the role of C.
 - iv) Name the major waste excreted from A.
 - v) What do you understand by term Haemodialysis?
21. a) Draw the diagram of human female reproductive system showing the following labeling and state one function of each labeled part. 5
- i. fallopian tube
 - ii. Ovary
 - iii. Uterus
- b) What is multiple fission? How does it occur in organisms? Name one organism which exhibits this type of reproduction.

Section B

22. Students were asked to observe the permanent slides showing different stages of yeast under high power of microscope. 2
- Name the type of asexual reproduction taking place in Yeast.
 - Draw three diagrams in sequence showing Asexual reproduction in Yeast.

23. A student set up the apparatus to show release of Carbon dioxide during respiration. After 2 hours what would he observe and Why? 2



24. While demonstrating a reaction in lab, a teacher added small amount of sodium sulphate solution to barium chloride solution in a test tube. What will be observed in the test tube? Write chemical equation for the reaction involved. 2
25. A student placed some solid sodium hydroxide on a strip of pH paper. What colour change will be observed and why? 2
26. Differentiate between overloading and short circuiting. What precautions should be taken to avoid overloading of domestic electric circuits? 2
27. A positively charged particle (alpha) projected towards west is deflected towards north by a magnetic field. What is the direction of the magnetic field? Explain with the help of diagram and also mention the name of rule which you will use to decide the direction of magnetic field. 2