ATOMIC ENERGY EDUCATION SOCIETY
PERIODIC TEST – II (2018-19)

CLASS – X **DATE OF EXAM: 25-09-18** **TIME – 3 HOURS**
SUBJECT: SCIENCE **MARKS – 80**

General Instructions:

- **(i)** The question paper comprises two sections, A and B. You are to attempt both thesections.
- **(ii)** All questions are compulsory.
- **(iii)** All questions of Section-A and B are to be attempted separately.
- **(iv)** There is an internal choice in three questions of three marks each, two questions of five marks each and one question of two marks each.
- **(v)** Question numbers 1 and 2 in Section-A are one mark question. They are to be answered in one word or in one sentence.
- **(vi)** Question numbers 3 to 5 in Section- A are two marks questions. These are to be answered in 30 words each.
- **(vii)** Question numbers 6 to 15 in Section-A are three marks questions. These are to be answered in about 50 words each.
- **(viii)** Question numbers 16 to 21 in Section-A are 5 marks questions. These are to be answered in 70 words each.
- **(ix)** Question numbers 22 to 27 in Section- B are based on practical skills. Each question is a two marks question. These are to be answered in brief.

Section – A

1. What is synapse? 1
2. What is the role of saliva in the digestion of food? 1
3. What is redox reaction? Identify the substance oxidised and reduced in the following reactions: 2

$$MnO_2 + 4HCl \longrightarrow MnCl_2 + 2H_2O + Cl_2$$

4. How are ammeters and voltmeters connected in a circuit? What do they help us to measure? 2
5. Why does a compass needle get deflected when brought near a bar magnet? 2
6. (a) How does a solenoid behave like a magnet? 3
   (b) When is the force experienced by a current-carrying conductor placed in A magnetic field largest?
7. (a) What is the total resistance of n resistors each of 'R' connected in: 3
   (i) Series (ii) Parallel
   (b) Calculate the resultant resistance of 3 resistors 3 Ω, 4 Ω and 12 Ω connected in parallel.

   (OR)

   (a) State Joule's law of heating and write the required equation.
   (b) Define electric power and state its unit. What is meant by 1 Kwh.

8. In electrolysis of water , 3
   (a) Name the gas collected at the cathode and anode.
   (b) Why is the volume of gas collected at one electrode double the other?
   (c) Why is a few drops of dil H_2SO_4 added to the water?

9. (a) What is universal indicator? 3
   (b) Write the chemical equation involved in the preparation of sodium hydroxide. Name the process.

10. Sumit's father has been advised by a Doctor to reduce his sugar intake. 3
   (a) Name the disease he is suffering from.
   (b) Name the hormone whose deficiency causes it.
   (c) Identify the glands that secrets it and mention the function of this hormone.

(OR)

   (a) What is a reflex arc?
   (b) Why is it advised to use iodised salt in our diet?

11. Draw a diagram of human excretory system and label kidneys, ureters, bladder and urethra on it. 3

12. An object is placed at a distance of 10 cm from a convex mirror of focal length 15 cm. Find the position and nature of the image. 3

13. (a) What are alloys? 3

   (b) Arrange these metals in the decreasing order of reactivity:Na, K, Cu, Ag
   (c) How is zinc extracted from its ore? Give chemicalequation of the reaction.

(Or)

   (a) Differentiate between roasting and calcination.
   (b) How is sodium obtained from molten sodium chloride?

14. What are the male and female gonads in human beings? State any two functions of each of them. 3

15. (a) Classify the following movements as tropic or nastic: 3
   (i) opening of flower (ii) roots moving downwards
   (iii) shoots moving towards light (iv) Twiriling of a tendril
   (b) Difference between cerebrum and cerebellum.

16. (a) If the image formed by a spherical mirror for all positions of the object placed in front of it is always erect and diminished, what type of mirror is it? Draw a labelled ray diagram to support your answer. 5
   (b) Give one point difference between real and virtual image.
   (c) Light enters from air to glass having refractive index 1.5. What is the speed of light in the glass?
   (Given, speed of light in vaccum is 3×10^8 m/s)

17. (a) What will be the action of gas on dry litmus paper? 5
   (b) Name the constituents of the following alloys:
   (i) Brass (ii) Solder
   (c) Why do ionic compounds have high melting and boiling points?
   (d) What are the ions present in Na_2O?

(OR)

   (a) What is rancidity?
   (b) Write a balanced chemical equation and mention the state of substance for

the following chemical reaction:
Solutions of Barium chloride and sodium sulphate in water react to give insoluble barium sulphate and the solution of sodium chloride.

(c) Why do we apply paint on iron articles?

(d) Balance the following chemical equations:

(i) $KBr\ (aq) + BaI_2\ (aq) \longrightarrow KI\ (aq) + BaBr_2\ (s)$

(ii) $Fe\ (s) + H_2O\ (g) \longrightarrow Fe_3O_4\ (s) + H_2\ (g)$

18. (a)What is vegetative propagation? Give its advantage. 3+
(b) With an example define the term Regeneration. 2

19. (a) State Fleming's Left-Hand Rule. 5
(b) Write the principle of working of an electric motor.
(c) Write the function of the following parts of an electric motor:
(i) Armature (ii) Split ring (iii) Brushes

20. (a)What happens when chlorine is passed over slaked lime at 313 K? 5
Write chemical equation of the reaction involved and state its two uses of the product obtained.
(b) How will you prepare Plaster of Paris from Gypsum?
Give the chemical equation for the reaction.

21. (a) Where does digestion of fat take place in our body? 5
(b) Name the intermediate and the end products of glucose breakdown in aerobic respiration.
(c) Which chamber of human heart receives oxygenated blood? Explain how oxygenated blood from this chamber is sent to all parts of the body.

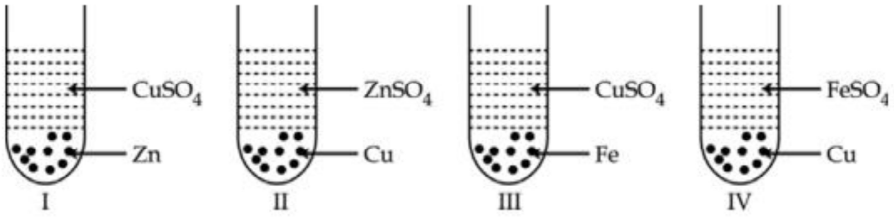
(Or)

(a) What is photosynthesis? Write the chemical equation involved in it.
(b) List threee events that occur during the process of photosynthesis.

Section - B

22. In an experiment to study the properties of acetic acid,answer the following: 2
(i) What happens when some water is added to the test tube containing acetic acid andshaken vigorously?
(ii) Blue and red litmus papers are put in the test tube containing an acid one after theother.

23. A student took solutions of $CuSO_4$, $ZnSO_4$ and $FeSO_4$ in four test tubes and dropped pieces of zinc, copper and iron in each of them separately as shown below in the figure: 2

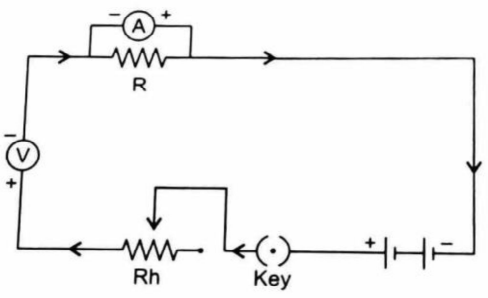


In which of the above shown test tubes, change in colour of the solution would be observed? Why?

24. List the steps of preparation of temporary mount of a leaf peel to observe stomata. 2

25. (a) What type of asexual reproduction is found in Amoeba and yeast? 2
(b) Draw the various stages of asexual reprodcution shown by yeast.

26. To study the dependence of potential difference (V) on current (I) flowing across a resistor (R), a student set a circuit diagram but he did not succeed. 2



(i) Name the components which are in correct position in the circuit diagram.
(ii) Name the components which are not in correct position in the circuit diagram.

27. A student places a candle flame at a distance of about 60 cm from a concave mirror of focal length 10 cm and focuses the image of the flame on a screen. After that he gradually moves the flame towards the mirror and each time focuses the image on the screen. 2

(a) In which direction-toward or away from the mirror, does he move the screen to focus the image?
(b) How does the size of the image change?
(c) How does the intensity of the image change as the flame moves towards the mirror?
(d) Approximately for what distance between the flame and the mirror, the image formed on the screen is inverted and of the same size?

(OR)

A ray of light travelling in air strikes the surface of glass at some definite acute angle and finally emerges out of it. What conclusions can be drawn about:

(a) Angle of incidence and angle of emergence?
(b) Angle of incidence and angle of refraction?