Roll No:

CONFEDERATION OF KERALA SAHODAYA COMPLEXES
COMMON MODEL EXAMINATION, JANUARY-2019

Science-086

(SET-3)

Class-X **M.M.:80**
TIME: 3 Hrs.

General Instructions:

(i) The question paper comprises of five sections– A, B, C, D and E. You are to attempt all the sections.
(ii) All questions are compulsory.
(iii) Internal choice is given in sections B, C, D and E.
(iv) Question numbers 1 and 2 in Section-A are one mark questions. They are to be answered in one word or in one sentence.
(v) Question numbers 3 to 5 in Section-B are two marks questions. These are to be answered in about 30 words each.
(vi) Question numbers 6 to15in Section-C are three marks questions. These are to be answered in about 50 words each.
(vii) Question numbers 16 to 21 in Section-D are 5 marks questions. These are to be answered in about 70 words each.
(viii) Question numbers 22 to 27 in Section-E are based on practical skills. Each question is a two marks question. These are to be answered in brief.

SECTION A

1. State the role of HCl in digestion of protein?
2. Energy flow in food chain is unidirectional. Justify this statement 1

SECTION B

3. Name the gas generally liberated when an acid react with metal? Illustrate with an example? How will you test this gas in laboratory . 2
4. List two advantages associated with water harvesting at the community level? 2
5. The magnification produced by three mirrors A, B and C are +1, +5, +0.45 respectively. Based on the magnification identify the mirrors. Which mirror can be used as dentist's mirror? 2

OR

An object is placed at a distance of 10 cm from a convex lens. If the image is observed on a screen at 6cm from the lens, calculate the focal length of the lens

SECTION C

6. write the number of periods in the modern periodic table .state the change in valency and metallic character of

elements as we move from left to right across a period. Also state the change, if any ,in the valency and atomic size of elements as we move down a group? 3

7. (a) Carbon cannot be used as reducing agent to obtain Mg from MgO why?
   (b) How is copper obtained from its sulphide ore? give equation for the reaction? 3

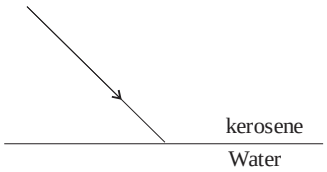
OR

Tooth enamel is one of the hardest substances in our body, how does it undergo damage due to eating chocolates and sweets? how do toothpastes prevent this damage?

8. An element A with atomic number 13.
   (a) Find group number and period number?
   (b) Write the formula of its oxide? 3

9. Identify the gland that secrete
   (A) insulin
   (b)thyroxin

10. State the importance of placing the potted plant in a dark room for 24 hours prior to the experiment on photosynthesis. Write the main events of photosynthesis?



11.
   i. In which of the given media light travels faster? Why?
   ii. Complete the diagram by showing a refracted ray and mark the angles of incidence and refraction.

OR

   i. State Snell's law of refraction.
   ii. In an experiment with a rectangular glass slab, a student observed that a ray of light incident at an angle of 45° with the normal on one face of the slab, after refraction strikes the opposite faceof the slab before emerging out into air making an angle of 30° with the normal. Draw a labeled diagram to show the path of this ray. What value would you assign to the angle of refraction and angle of emergence?

12. (a) Express electric power in terms of potential difference V and resistance R.
   (b) An electrical fuse is rated at 5A. What is meant by this statement?
   (c) An electric iron of 1 kW is operated at 220 V. Find which of the following fuses that respectively rated at 1 A, 3 A and 5 A can be used in it. 3

13. Two resistors of resistances 3 Ω and 6 Ω respectively are connected to a battery of 6 V so as to have
   (a) minimum resistance, (b) minimum current.
   i. How will you connect the resistances in each case?
   ii. Calculate the strength of the current in the circuit in both cases.

14. What is OTEC?. Explain how the OTEC plant works? Write one essential condition for it to operate properly. 3

15. state the role of uv radiation in the formation of ozone layer? Certain chemical compound leads to the depletion of ozone layer.name the chemical compound and why is the damage of ozone layer a cause of concern 3

OR

Why should we stop the usage of plastic bags? list two changes that you can adopt to reduce the usage of plastic bags.

SECTION D

16. Compound X and aluminium are used to join railway tracks . 5
    a) Identify the compound x
    (b) Name the reaction?
    (c) Write down its reaction

17. A carbon compound x turns blue to red and has a molecular formula c2H4O2 identify X and draw its structre .write the chemical equation for the reaction and name the product formed in each case when X reacts with
    (a) ethanol in presence of sulphuric acid
    (b)sodium carbonate

    OR

    (a) Explain why carbon forms large number of compounds?. 5
    b) Explain the formation of ethene by electron dot structure?

18. Draw a longitudinal section of a flower and label the following parts 5
    a. the female gamete .
    b. the place where fertilization take place.
    c the place male germ cells are formed.
    ii) Is it preferable to use Copper -T to prevent a sexually transmitted disease .support your answer

19. Define fossils. Explain the formation of fossils. Write two methods of determining the age of fossils. State the role of fossils in deciding the evolutionary relationship. 5

    Or

    Why do Mendel choose pea plant for his experiment. How did Mendel prove that characters are transferred from one generation to next generation ?

20. (a)Write the importance of ciliary muscles in the human eye. Name the defect of vision that arises due to gradual weakening of the ciliary muscles in old age. What types of lenses are required by the persons suffering from this defect to see the objects clearly? 5
    (b) A student is unable to see clearly the words written on the blackboard placed at a distance of approximately 5 m from him. Name the defect of vision the boy is suffering from. Explain the method of correcting this defect. Draw ray diagram for the:
    (i) Defect of vision and also (ii) for its correction.

21. A coil of insulated copper wire is connected to a galvanometer. What will happen if a bar magnet is :
    i. Pushed into the coil with its north pole entering first ? 5
    ii. withdrawn from inside the coil ?
    iii. held stationary inside the coil ?
    (b) Name the above phenomenon and mention the name of the scientist who discovered it. State the law that relates the direction of current in the coil with the direction of motion of the magnet.

    OR

    (a)What is an electric generator?
    (b) With the help of a labeled diagram explain, the principle, construction and working of an a.c generator.

SECTION E

22. Which one of these has a higher concentration of H+ ions ?1 M hydrochloric acid or 1M acetic acid
    2
23. what will be the observations when acetic acid reacts with
    2
    (a)universal indicator (b)phenlphthalein
24. A cell found dividing in to two under a microscopic view. Name this process and explain.

OR

KOH is placed in a test tube in the flask with germinating seeds in an experiment. Write the reason for this.

25. Cotyledons are important for the growth of a germinating seed. Support this statement.
    2
26. To find the image distance for varying object distances in case of a convex lens of focal length 10 cm, a student obtains on a screen a sharp image of a bright object by placing it at 20 cm distance from the lens. After that he gradually moves the object away from the lens and each time focuses the image on the screen.
    a) In which direction-towards or away from the lens does he move the screen to focus the object?
    b) How does the size of image change?
    c) Approximately, at what distance does he obtain the image of magnification–1?
    How does the intensity of image change as the object moves farther and farther away from the lens? 2
27. (a)Draw labeled circuit diagram for verifying the Ohm's law.
    (b) What are the least counts of milliammeter and voltmeter given below?

i.

ii.

OR

Draw the path of a ray of light through a glass prism. Label angle of refraction, angle of emergence and angle of deviation