SEVEN SQUARE ACADEMY

Academic Year – 2018-2019

Secondary Section (Pre-Board)

Name: Muskan **Subject: Science** **Date: 07/01/2019**

Class: X **Time: 3 Hours** **Marks: 80 Marks** **SET - A**

General instruction:

1. 1 – 2 (1 mark)
2. 3 – 5 (2 marks)
3. 6 – 15 (3 marks)
4. 16 – 21 (5 marks)
5. 22 – 27 (2 marks)

Section - A (2 X 1 = 2 Marks)

1. Mention raw materials required for photosynthesis.
2. State one basic difference between physical change and chemical change.

Section - B (3X 2 = 6 Marks)

3. Write chemical equations that show aluminum oxide reacts with acid as well as base.
4. What is Saliva? State its role in the digestion of food.
5. State the two laws of reflection of light.

Section - C (10 X 3 = 30 Marks)

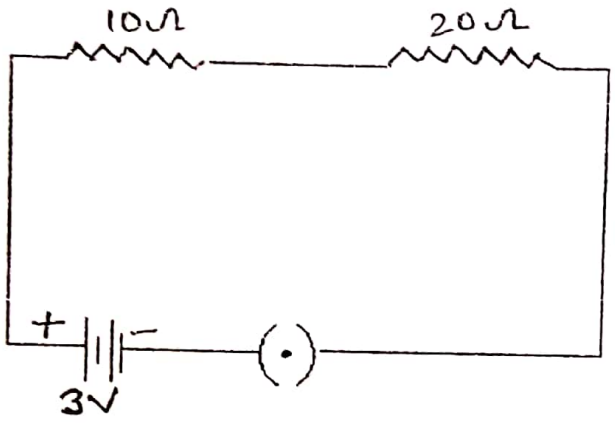
6. An element 'X' is placed in the 3rd group and 3rd period of the modern periodic table. Answer the following questions stating reason of your answer in each case:
   (a) Write the electronic configuration of the element 'X'.
   (b) Write the formula of the compound formed when the element 'X' reacts with another element 'Y' of atomic number 17 X_2Y_3
   (c) Will the oxide of this element be acidic or basic? amphoteric
7. Name any three endocrine glands in human body and briefly write the function of each of them.
8. Give an example of a metal which –
   (i) is a liquid at room temperature
   (ii) can be easily cut with knife
   (iii) is the best conductor of heat
9. Write one function of the following components of the transport system in human beings:
   (a) Blood vessels (b) Lymph (c) Heart.

10. What are chromosomes? Explain how in sexually reproducing organism the number of chromosomes in the progeny is maintained.

11. If the speed of light in vaccum is 3×10^8 m/s, find the absolute refractive index of medium in which light travels with a speed of 1.4×10^8 m/s.

12. How much current will an electric bulb draw from 220V source, if the resistance of the bulb is 1200 Ω ? If in place of bulb, a heater of resistance 100 Ω is connected to the sources, calculate the current drawn by it.

13. Study the following electric circuit and find (i) the current flowing in the circuit and (ii) the potential difference across 10Ω resistor



14. List various advantages of solar cell.

15. Write chemical reactions for the following:

a. Burning of coal
b. Formation of water
c. Burning of natural gas

Section - D

(6 X 5 = 30 Marks)

16. (a) Define corrosion
(b) What is corrosion of iron called?
(c) How will you recognize the corrosion of silver?
(d) Why corrosion of iron is a serious problem?
(e) How can we prevent corrosion of iron?

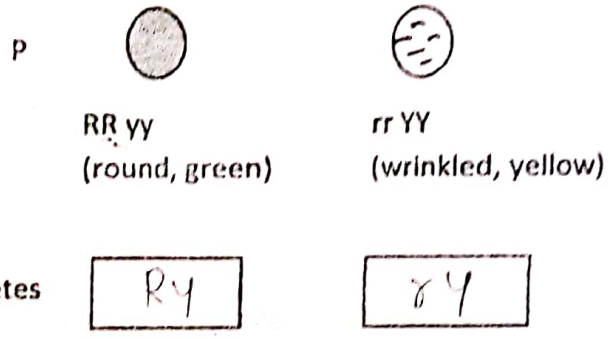
State reasons for the following:

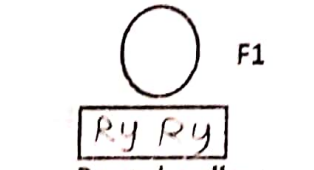
a. Tap water conducts electricity where as distilled water does not.
b. Dry hydrogen chloride gas does not turn blue where as dilute hydrogen chloride does
c. During summer season, a milk man usually adds a very small amount of baking soda to fresh milk.
d. For dilution of acid, acid is added into water and not water into acid
e. Ammonia is a base but does not contain hydroxyl group.

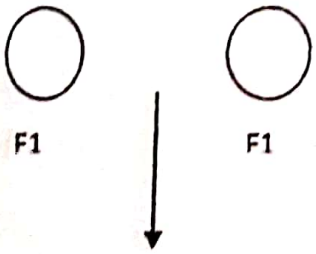
18. (a) Draw a diagram of human female reproductive system and label the part.
(i) That produces eggs
(ii) Where fusion of egg and sperm takes place.
(iii) Where zygote is implanted

(b) What happens to human egg when it is not fertilized?

19. Given below is the experiment carried out by Mendel to study the inheritance of two traits in garden-pea.
(a) Fill in the boxes with appropriate answer
(b) Why did Mendel carry out an experiment with two traits?
(c) What were his findings with respect to inheritance of traits in F_1 and F_2 generations?







			Ratio
F_2	315 round, yellow		
	108 round, green		
	101 wrinkled, yellow		
	32 wrinkled, green		

20. (a) Explain the following terms used in relation to defects in vision and correction provided by them:

i) Myopia ii) Bifocal lenses iii) Far-sightedness

(b) Why is the normal eye unable to focus on an object placed within 10cm from the eye?

21. (a) What is meant by solenoid? How does current carrying solenoid behave?

(b) List in tabular form two major differences between electric motor and a generator

Section - E

(6 X 2 = 12 Marks)

22. What is observed when sulphur dioxide is passed through

(a) Water (b) Lime water

Also write chemical equation for the reactions that take place.

23. State the type of chemical reactions with chemical equations that take place in the following

(a) Magnesium ribbon is burnt in air

(b) Electric current is passed through water.

24. ~~Distance~~ between Autotrophic nutrition and Heterotrophic nutrition.

25. Explain: Difference

(a) Binary fission

(b) Multiple fission

26. An electric geyser rated 1500W, 250V in connected to a 250V line mains.

Calculate: ?

(i) The electric current drawn by it.

(ii) Energy consumed by it in 50 hours.

27. Two thin lenses of power +3.5D and -2.5D are placed in contact. Find the power and focal length of the lens combination.

$H_2O + SO_2 \longrightarrow H_2SO_4$

$SO_2 + CaO \longrightarrow CaSO_2 + O_2 \uparrow$