



INDIAN SCHOOL SOHAR
PTIII EXAMINATION- (2018 -19)
SUBJECT: SCIENCE

CLASS: X

Max. Marks: 80

DATE: 13 /01/2019

Duration: 3Hrs

General Instructions:-

- i. The question paper comprises of five Sections- **A,B,C,D and E**. You are to attempt all the sections.
- ii. Question paper consist of **27** questions. **All** questions are compulsory.
- iii. Internal choice is given in Sections- **B, C, D and E**.
- iv. Question numbers **1 to 2** in Section-**A** are **one** mark questions. These 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 to 15** in 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 **five** marks questions. These are to be answered in about 70 words each.
- viii. Question numbers **22 to 27** in Section-**E** are **two** marks questions based on practical skills. These are to be answered in brief.
- ix. There is no overall choice. However an internal choice will be provided in one question of two marks, three questions of **3** marks each, three questions of **5** marks each and three question (for assessing the practical skills) of **2** marks. Attempt only one of the choices in such questions.
- x. Wherever necessary the diagrams drawn should be neat and properly labelled.

SECTION-A

1. What will happen to a plant if its Xylem is removed? 1
2. Why should we use coal and petroleum judiciously? State any two reasons. 1

SECTION-B

3. Write the balanced equation for the following chemical reactions:
 - i) Hydrogen + Chlorine \longrightarrow Hydrogen Chloride
 - ii) Barium Chloride+Aluminium sulphate \longrightarrow Barium sulphate + Aluminium Chloride. 2
4. Name the method of reproduction seen in Plasmodium. How does this method differ from the method of reproduction commonly seen in Amoeba? 2
5. An object is placed at a distance of 30 cm in front of a convex mirror of focal length 15 cm. Write four characteristics of the image formed by the mirror.

OR

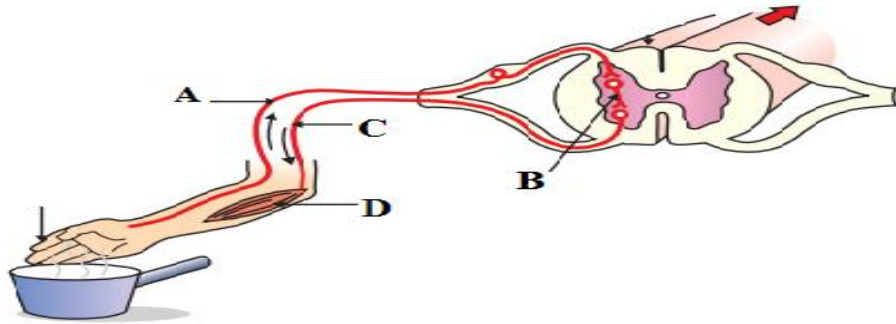
- Distinguish between a real and a virtual image of an object. What type of image is formed:
 (i) by a plane mirror, (ii) on a cinema screen? 2

SECTION-C

6. Draw the structures of: a) Hexanal b) simplest ketone c) Third member of alkyne series. 3
7. a) What happens when electricity is passed through brine? Write the chemical equation for it.
 b) While diluting the acid, why is it recommended that acid should be added to water and not water to acid?

OR

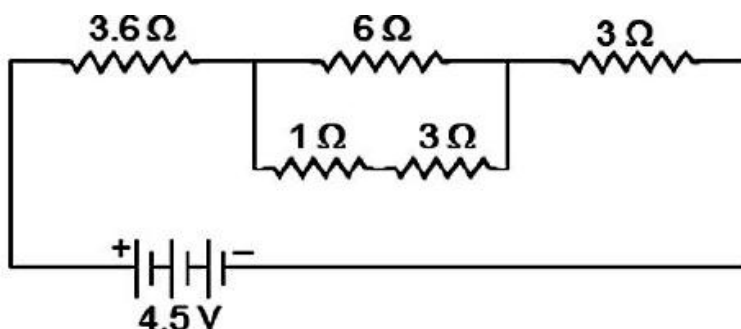
- a) Write the chemical equation for the reactions taking place when,
 i) zinc sulphide is heated in air
 ii) calcination of zinc carbonate is done.
- b) Explain, why most of the metals do not displace hydrogen from Nitric acid. 3
8. Name two metals which react violently with cold water. Write any two observations you would make when such a metal is dropped into water .Write down its reaction. 3
9. a) Label the parts marked A, B, C and D in the given figure of the reflex arc. 3
 b) What is the role of the brain in reflex action?



10. State the events that occur during the process of photosynthesis. 3
11. Draw a circuit diagram of an electric circuit containing a cell, a key, an ammeter, a resistor of 4Ω in series with a combination of two resistors (8Ω each) in parallel and a voltmeter across parallel combination. Each of them dissipates maximum energy and can withstand a maximum power of $16W$ without melting. Find the maximum current that can flow through the three resistors. 3
12. Rohit focused the image of a candle flame on a white screen using a convex lens. He noted down the position of the candle , screen and lens as under :
- Position of candle = 26.0 cm
 Position of convex lens = 50.0 cm
 Position of screen = 74.0 cm
- i) What is the focal length of the convex lens?
 ii) Where will the image be formed if he shifts the candle towards the lens at a position of 38 cm ?
 iii) Draw a ray diagram to show the formation of the image in case (ii) as said above?

OR

- a) If the image formed by a mirror for all positions of the object placed in front of it is always diminished, erect and virtual, state the type of the mirror and also draw a ray diagram to justify your answer.
- b) Define the radius of curvature of spherical mirrors. Find the nature and focal length of a spherical mirror whose radius of curvature is $+24\text{ cm}$. 3
13. Find the current flowing through the following electric circuit. 3



14. Why is there a need for harnessing non-conventional sources of energy? How can energy be harnessed from the sea in different ways? 3
15. State the role of the following in the process of digestion:
a) Saliva b) Bile c) Hydrochloric acid.

OR

Justify the following:

- a) Carnivores have shorter small intestine than herbivores.
b) Rate of breathing is faster in aquatic organisms than in terrestrial organisms.
c) Carbon dioxide is mostly transported in the dissolved form in our blood. 3

SECTION-D

16. a) An element 'M' with electronic configuration (2,8,2) combines separately with NO_3^- and PO_4^{3-} radicals. Write the formula of two compounds so formed. To which group and period of modern Periodic Table, 'M' belong?. Will 'M' form covalent or ionic compounds? Give reason to justify your answer.
b) How does the tendency to gain electrons change as we go down the 16th group of the periodic table? Why? 5
17. a). How would you bring about the following conversions? Write the reactions involved
(i) Ethanol to ethane
(ii) Ethanol to ethanoic acid
b). What is a hydrogenation reaction? Write an equation to represent this reaction. How is the reaction useful in vegetable ghee industry?
c) Write the next higher homologue of the following: a) C_5H_8 b) C_3H_6 .

OR

A compound 'C' (molecular formula, $\text{C}_2\text{H}_4\text{O}_2$) reacts with Na- metal to form a compound 'R' and evolves a gas which burns with a pop sound. Compound 'C' on treatment with an alcohol 'A' in presence of an acid forms a sweet smelling compound 'S' (molecular formula $\text{C}_3\text{H}_6\text{O}_2$). On addition of NaOH to 'C', it also gives 'R' and water. 'S' on treatment with NaOH solution gives back 'R' and 'A'. Identify 'C', 'R', 'A', 'S' and write down the reactions involved. 5

18. a) Draw a neat diagram of the female reproductive system and label the following parts where:
i) development of egg takes place ii) fertilisation occurs
iii) fertilised egg gets implanted iv) the uterus opens into.
b) Describe, in brief, the changes the uterus undergoes when:
i) it receives the zygote. ii) the zygote is not formed. 5
19. Name the phenomenon that governs the following:
a) Green beetles living in green bushes are not eaten by the crows.
b) Number of blue beetles in green bushes increases, only because the red beetles living there were trampled by a herd of elephants.
c) No 'medium height plants' are obtained in F_1 generation, upon crossing pure tall and dwarf pea plants.
d) Tails of mice were surgically removed for several generations; still mice had tails in the following generations.
e) A migrant beetle reproduces with the local population; as a result genes of migrant beetle enter the new population.

OR

- a) What are fossils? Explain any one method of estimating the age of fossils.
- b) During artificial selection, which features of wild cabbage were selected to give rise to:
 i) Broccoli ii) Cauliflower iii) Cabbage. 5
20. a) Explain the following terms used in relation to defects in vision and correction provided by them with ray diagrams:
 i) Myopia ii) Bifocal lenses (iii) Far-sightedness.
- b) Why is the normal eye unable to focus on an object placed within 10 cm from the eye? 5
21. a) A positively charged particle (alpha) projected towards west is deflected towards north by a magnetic field. State the direction of magnetic field. State the rule used by you to find the direction.
- b) Mention the factors on which the strength of forces experienced by a current carrying conductor placed in a magnetic field depend.
- c) Under what condition is the force experienced by a current carrying conductor placed in a magnetic field maximum?

OR

- a) Explain the underlying principle and working of an electric generator by drawing a labelled diagram.
- b) What is the function of brushes?
- c) In what way a DC generator is different from an AC generator. 5

SECTION-E

22. In a given ammeter, a student sees that needle indicates 17 divisions in ammeter while performing an experiment to verify Ohm's law. If ammeter has 10 divisions between 0 and 0.5A, then what is the value corresponding to 17 divisions? 2
23. Draw a path of light ray passing through a prism. Label angle of incidence and angle of deviation in the ray diagram. 2
24. Name any four compounds which causes hardness of water? 2
25. What do you observe when you drop a few drops of acetic acid to a test tube containing
 i) Phenolphthalein ii) Distilled water iii) Universal indicator iv) Blue litmus.

OR

- During heating of ferrous sulphate crystals, what will be your observations? Write any two. 2
26. Ravi wants to prepare a temporary mount of a leaf peel to show stomata. List the sequence of steps he would follow to prepare the slide. 2
27. A student observed a permanent slide showing asexual reproduction in yeast. Name the process and draw the diagrams showing various stages of the process.

OR

When we open a dicot seed, its embryo shows two main parts. Name these two parts and state their function. 2
