



ITL PUBLIC SCHOOL
PERIODIC TEST- 3 (2020-21)

Date: 14/12/20

Class: X

SCIENCE (Code-086)

TIME: 2hrs

MM. 40

General Instructions –

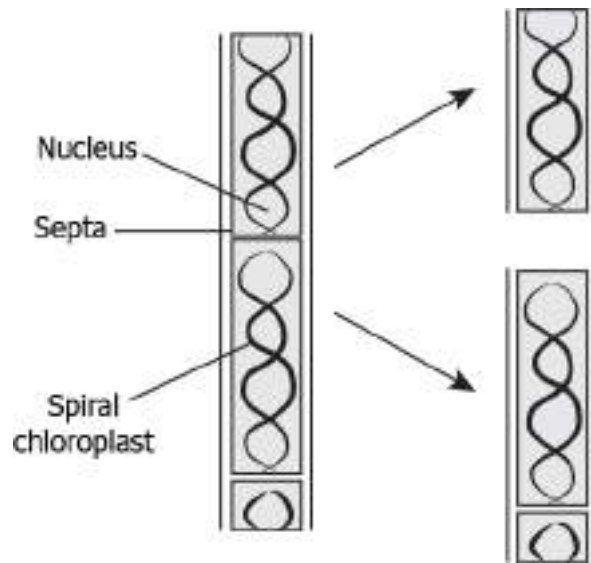
1. The paper consists of 19 questions and is divided into four sections.
2. Section A consists of question number 1-10 (Multiple choice questions, Very short answer type and assertion-reason type questions) of one mark each.
3. Section B consists of question numbers 11-13 (short answer type questions) of two marks each. Answer to these questions should be in the range of 30-50 words.
4. Section C consists of question numbers 14-16 (short answer type questions) of three marks each. Answer to these questions should be in the range of 50-80 words.
5. Section D consists of question numbers 17-19 (long answer type questions) of five marks each. Answer to these questions should be in the range of 80-120 words.
6. All questions are compulsory; however internal choice has been provided in three questions of section A

SECTION- A

1.	The strength of magnetic field inside a long current carrying straight solenoid is a) More at the ends than its centre. b) Minimum in the middle. c) Same at all points. d) Found to increase from one end to the other.	1
2.	A positively charged particle projected towards west is deflected towards north by a magnetic field, the direction of the magnetic field is a) Towards south b) Towards east c) Downward d) Upward	1

3. The image shows the division in *Spirogyra*.

1

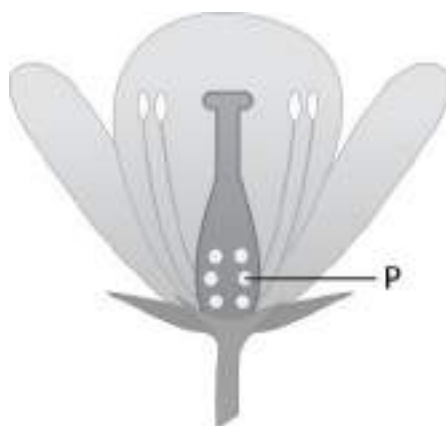


What can be concluded about the *Spirogyra* from this division?

- a) It is a multicellular organism that gives rise to two new equal sized individuals.
- b) It is a unicellular organism that gives rise to two new equal sized individuals.
- c) It is a unicellular organism that breaks into pieces that grows into new individuals.
- d) It is a multicellular organism that breaks into pieces that grows into new individuals.

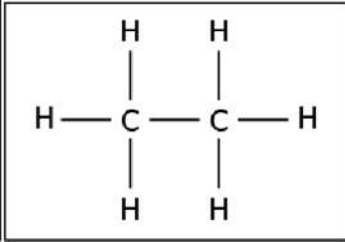
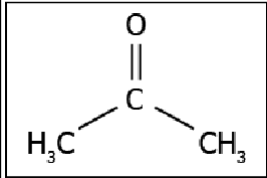
OR

The image shows the structure of a flower.

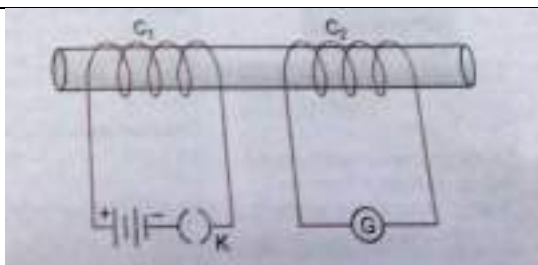


Which process will likely be disturbed or not occur, if labelled part is removed from the flower?

- a) formation of fruit
- b) transport of pollen
- c) formation of pollen
- d) development of pollen tube

4.	<p>The image represents the structure of a carbon compound known as ethane.</p> <div style="text-align: center;">  </div> <p>Which option explains the naming of ethane?</p> <p>a) the presence of functional group connected with a single bond b) as it contains two carbon atoms and a single bond connects the carbon atoms c) carbon compound with a total number of eight atoms are named as ethane d) as it contains six hydrogen atoms and a single bond connects the carbon and hydrogen atom</p> <p style="text-align: center;">OR</p> <p>The image represents a carbon compound.</p> <div style="text-align: center;">  </div> <p>Which functional group is present in the compound?</p> <p>a) alcohol b) aldehyde c) carboxylic acid d) ketone</p>	1
5	<p>Assertion: The uterus prepares itself every month to receive a fertilised egg.</p> <p>Reason: The ovary releases one egg every month.</p> <p>a) Both A and R are true and R is the correct explanation for A. b) Both A and R are true but R is not the correct explanation of A. c) A is true but R is false. d) A is false but R is true</p>	1
6	<p>Assertion: Alkenes have the general formula C_nH_{2n}</p> <p>Reason: There is one triple bond between two carbon atoms in their molecules.</p> <p>a) Both A and R are true and R is the correct explanation for A. b) Both A and R are true but R is not the correct explanation of A.</p>	1

	<p>c) A is true but R is false. d) A is false but R is true</p>	
7	<p>Assertion: Strength of an electromagnet can be increased by increasing the number of turns per unit length in solenoid coil. Reason: Strength of an electromagnet can be increased by increasing the current flowing through the solenoid.</p> <p>a) Both A and R are true and R is the correct explanation for A. b) Both A and R are true but R is not the correct explanation of A. c) A is true but R is false. d) A is false but R is true</p>	1
8	An element forms an oxide, A_2O_3 which is acidic in nature. Identify A as metal or non-metal and give reason for your answer.	1
9	A man with blood group A marries a woman having blood group O. One of their children is with blood group O. What will be the genotype of man and woman?	1
10	<p>Why can't two magnetic field lines cross each other? OR Draw magnetic field lines to represent the uniform magnetic field.</p>	1
SECTION- B		
11	<p>a) Under what condition does a moving charge placed in a magnetic field experience</p> <p>i) maximum force ii) minimum force?</p> <p>b) On what factors does the magnitude of force depends?</p>	2
12	<p>a) A student adds an equal amount of copper sulphate solution in two beakers. He adds zinc in beaker P and silver in beaker Q. The student observes that the colour of the solution in beaker P changes while no change is observed in beaker. Arranges the metals in increasing order of reactivity.</p> <p>b) Show the formation of sodium oxide molecule by transfer of electrons.</p>	2
13	What happens after pollen grain falls on stigma of a flower? Draw a labelled diagram to show changes which occur in flower after pollination.	2
SECTION-C		
14	Two coils C_1 and C_2 are wrapped around a non-conducting cylinder. Coil C_1 is connected to a battery and Key and C_2 with galvanometer G. On pressing the key K, current starts flowing in the coil C_1 . State your observation in the galvanometer:	3



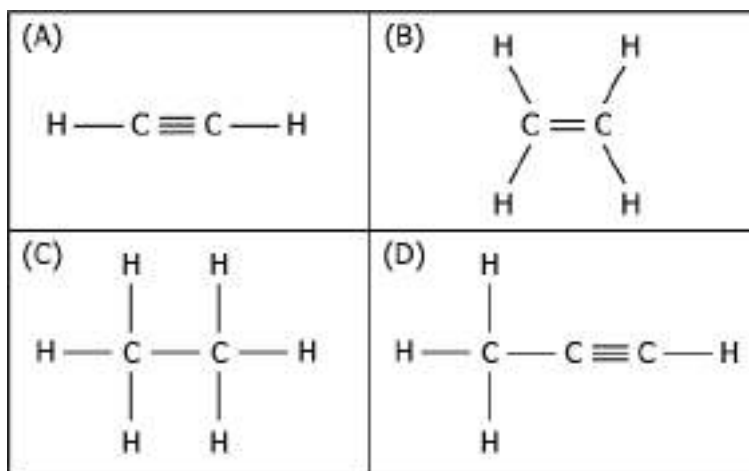
- When key K is pressed on.
- When current in coil C_1 is switched off.
- When current is passed continuously through coil C_1 .

15

Read the following paragraph and answer the questions base upon related concepts:

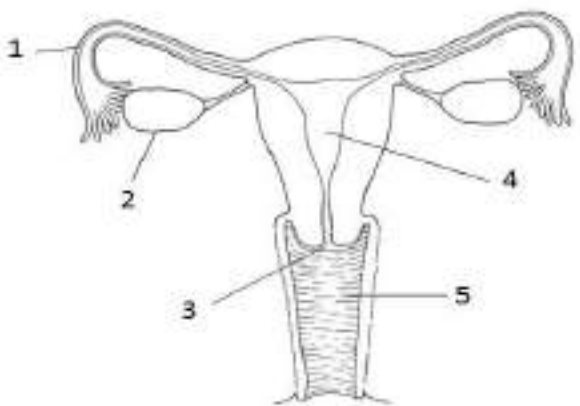
Carbon seems to be a very friendly element. Apart from forming hydrocarbons it also forms bonds with halogens, nitrogen, Sulphur and oxygen. Hydrogen atoms in hydrocarbon chains can be replaced by any of the functional groups which give characteristic properties to carbon chain, regardless of the length of carbon chain. Such a series of compounds in which same functional group substitutes for hydrogen in a carbon chain is called as a homologous series.

- Which of the following compound belong to same homologous series?



- (A) and (B)
 - (B) and (D)
 - (A) and (D)
 - (B) and (C)
- Identify and name the functional group present in following compounds.
 - CH_3COOH
 - $\text{C}_2\text{H}_5\text{CHO}$

3

	c) Write the molecular formula of fourth member of homologous series with general formula $C_nH_{2n+1}OH$.	
16	<p>Read the following paragraph and answer the questions base upon related concepts:</p> <p><i>Reproduction is the process by which living beings increase their population. The rates of birth and death determines the size of the population. The process of sexual maturation is gradual and takes place while general body growth is also taking place. Some degree of sexual maturity does not mean that body is ready for reproduction and bringing up children. Several contraceptive methods are used to prevent unwanted pregnancies and sexually transmitted diseases. Even the male –female sex ratio should be maintained for a healthy society.</i></p> <p>a) Which category of contraceptives act by changing the hormonal balance of body?</p> <p>b) Pre-natal sex determination is prohibited by law. Give reason.</p> <p>c) Identify and name the part of female reproductive system in which copper T is placed.</p>	3
		
SECTION-D		
17	<p>a) State the principle of electric motor and the rule which is used to find the direction of force experienced by the armature.</p> <p>b) Draw magnetic field lines for a current carrying solenoid.</p> <p>c) State any two differences between permanent magnets and electromagnets.</p> <p>d) Why soft iron is used for making electromagnets?</p>	5
18	<p>A blue colour flower plant denoted by BB is cross bred with that of white colour flower plant denoted by bb.</p> <p>a) State the colour of flower you would expect in their F_1 generation plants.</p> <p>b) What must be the percentage of white flower plants in F_2 generation if flowers of F_1 plants are self-pollinated?</p> <p>c) Write the expected ratio of the genotypes BB and Bb in the F_2 progeny.</p> <p>d) State the Law of inheritance which can be concluded from above cross.</p>	5

19	<p>a) Iqbal treated a lustrous, divalent element M with sodium hydroxide. He observed the formation of bubbles in reaction mixture. He made the same observations when this element was treated with hydrochloric acid. Suggest how can he identify the produced gas. Write chemical equations for both the reactions.</p> <p>b) Write the structural formula of all the isomers of pentane.</p>	5
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