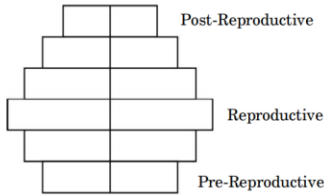


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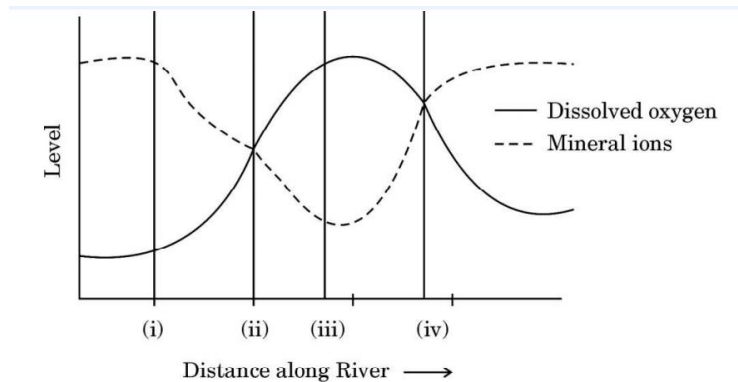
Biology Holiday Homework DEC 2024

1. The status of the human population reflected in the human age pyramid given below is :

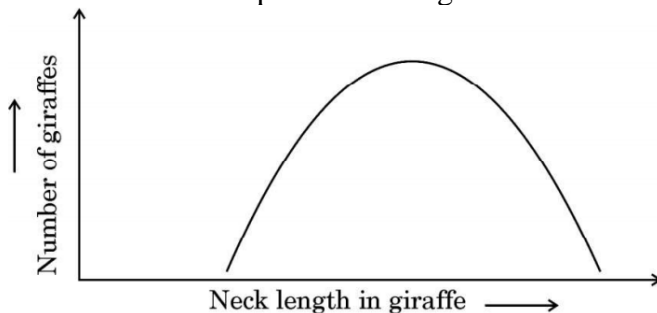


- (a) Declining population (b) Stable population
 (c) Expanding population (d) Extinct population

2. The graph plotted below is based on the data collected by biology students with respect to the levels of oxygen at the specific points in the river flowing outside their city. Which point in the graph indicates the entry of untreated sewage in the river ?



3. Select the option that gives the correct description of the process of Natural Selection with respect to the length of the neck of giraffe.



- (a) Stabilising selection as giraffes with longer neck lengths are selected further.
 (b) Disruptive selection as giraffes with smaller and longer neck lengths are selected.
 (c) Directional selection as giraffes with longer neck lengths are selected.
 (d) Stabilising selection as giraffes with medium neck lengths are selected.

4. Assertion (A) : A patient of ADA deficiency undergoing treatment for

gene therapy requires periodic infusion of genetically engineered lymphocytes.
Reason (R) : Lymphocytes are immortal.

5. Assertion (A) : A cattle egret and grazing cattle in close association is a classic example of commensalism.

Reason (R) : As grazing cattle move through the field, they stir up and flush out insects from the vegetation that otherwise might be difficult for egrets to find and catch

6. Assertion (A) : Endosperm is completely consumed during the development of embryo in ex-albuminous seeds.

Reason (R) : Castor, pea and beans are all examples of ex-albuminous seeds.

7. Assertion (A) : Birds like pigeon have heterogametic females whereas the males are homogametic.

Reason (R) : In pigeons, females have Z and W sex chromosomes whereas males have ZZ sex chromosomes

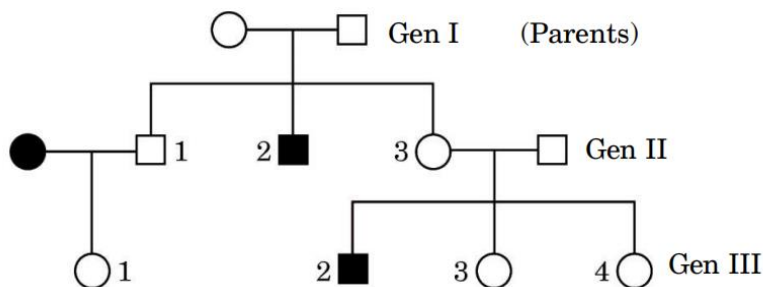
8. With the help of a schematic diagram only, show in three steps, the formation of recombinant DNA by the action of restriction endonuclease EcoRI and DNA ligase.

9. Study the given pedigree chart and answer the questions that follow.

(a) Is the trait given in the chart dominant or recessive ? Give reason in support of your answer.

(b) Is this trait autosomal or sex-linked ? Give reason in support of your answer.

(c) Write the possible genotypes of the children numbers the second generation.



10. What are the characteristics of stem cells. From where can one obtain stem cells in humans? State any two applications of stem cell in curing human diseases

11. Gene expresses itself in a cell system as a protein/enzyme. How does an expression of gene occur in a cell system and when does it need to occur, and how the gene expression is regulated in a prokaryote cell system was studied by the combined efforts of Jacques Monod, the biochemist and Francois Jacob, the geneticist. For their work on lactose metabolism in *E. coli* and introducing concept of Lac operon they were awarded the Nobel Prize in 1965.

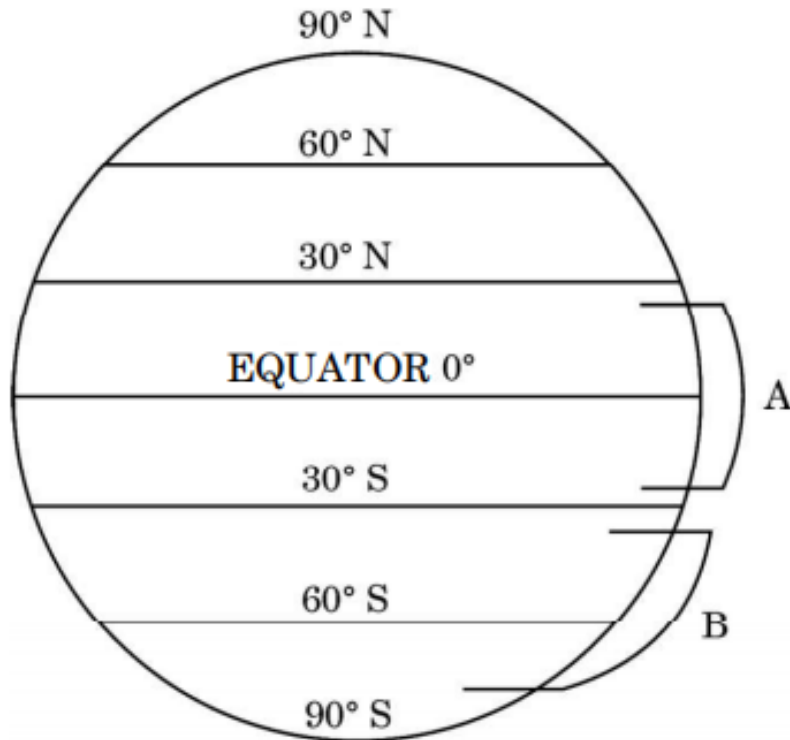
(a) Why is *lac* operon said to be a transcriptionally regulated system ?

(b) It is said that the *lac* operon has to be operational at a very low level in the bacterial cell all the time. Justify.

(c) Why is the regulator gene in *lac operon* marked as I gene?

- (d) Draw a schematic diagram of *lac* operon in absence of inducer in the culture medium of the bacteria
- (e) Draw a schematic diagram of *lac* operon in presence of an inducer in the culture medium of bacteria

12.



1.

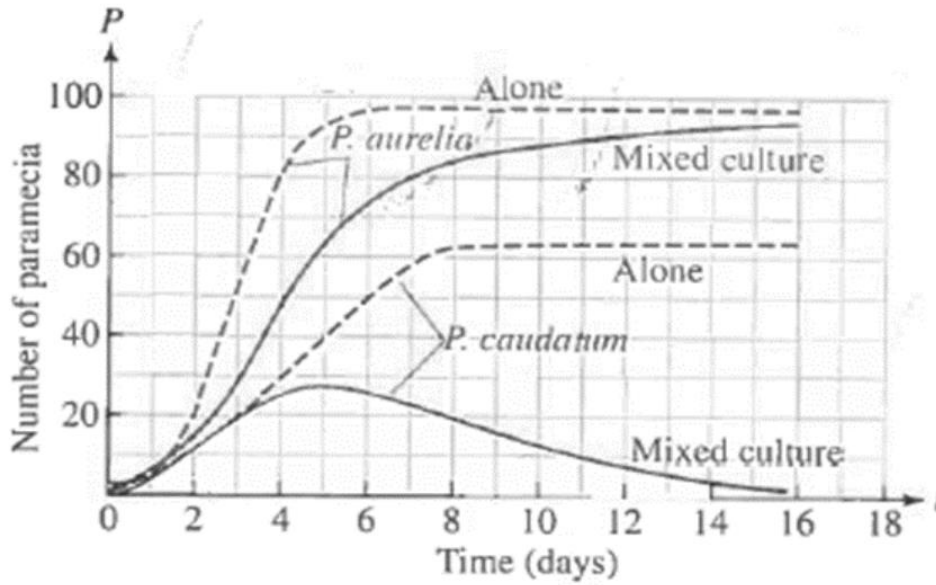
A. Write the observations made regarding the species diversity when moving from region A to region B. Give two reasons also.

B. Stating the reason, mention the approximate number of bird species recorded in India.

C. Name the region in the world that records the greatest biodiversity and mention why

13. Observe the graph given below.

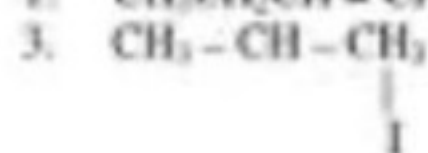
The graph represents inter-specific interaction between two species of *Paramecia* competing for the same resource in a culture medium. *Paramecium caudatum* and *Paramecium aurelia* were grown in separate cultures as well as in mixed cultures. It was found that each species grew in numbers according to the logistic equation



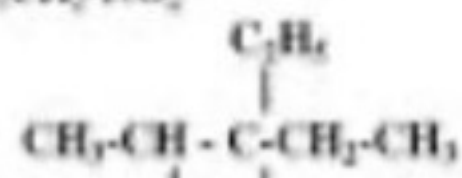
- Which species is competitively superior? Support it with the data provided in the graph.
- State the underlying principle for the above result and name the scientist associated with this principle.
- Explain the mechanism in which two or more species competing with each other can co - exist.
- Graphs A and B shown below depict interaction of two species. Which graph indicates Mutualism? Give reason.

- Explain the process of protein synthesis from processed m-RNA
- (a) How does Hardy Wienberg equation explain genetic equilibrium?
(b) List any 4 four factors that affect hardy Weinberg law.
- Submit practical and investigatory record completed in all respects

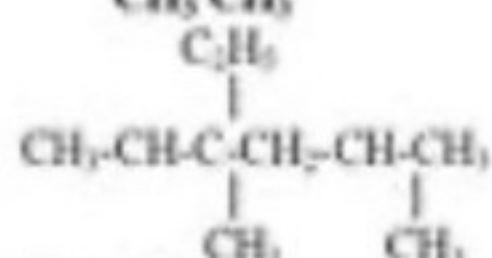
Q1. Give IUPAC name of the followings:-



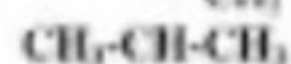
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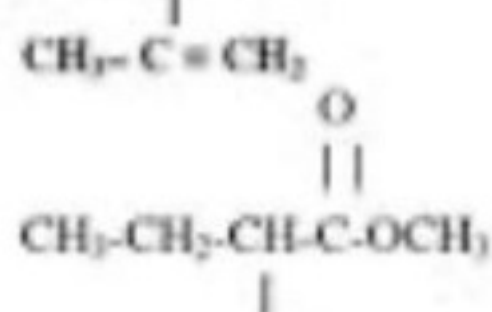
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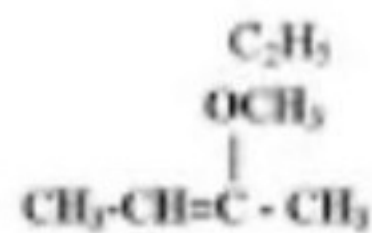
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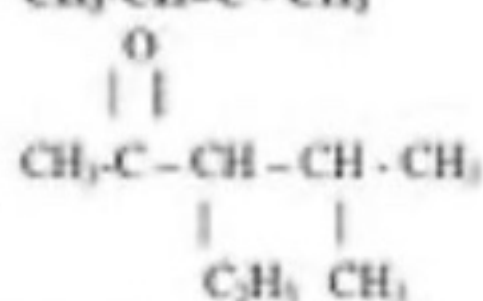
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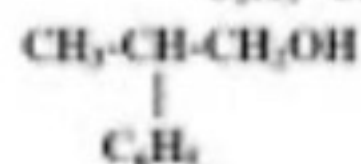
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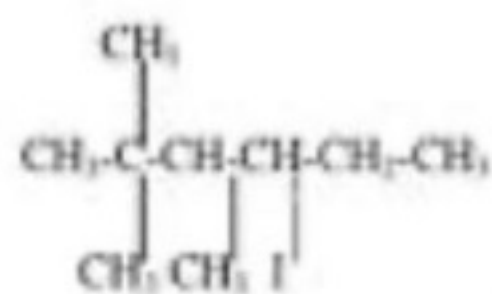
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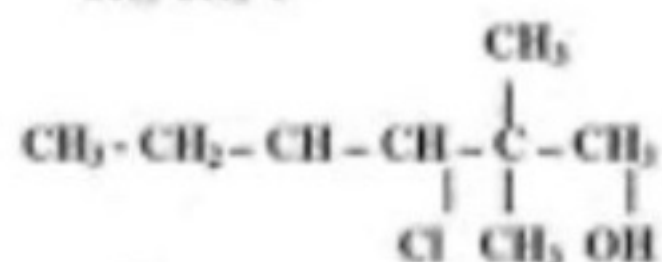
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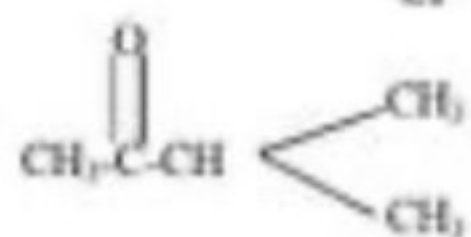
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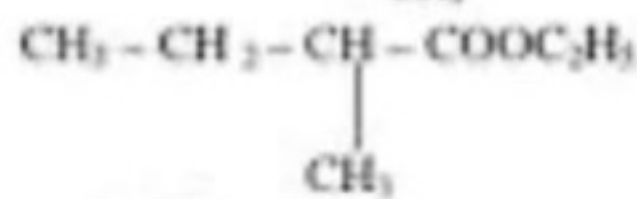
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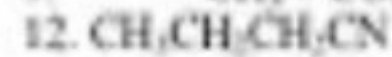
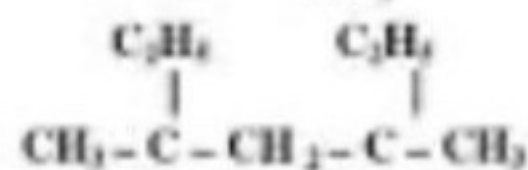
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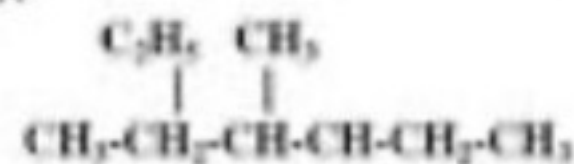
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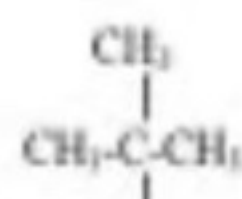
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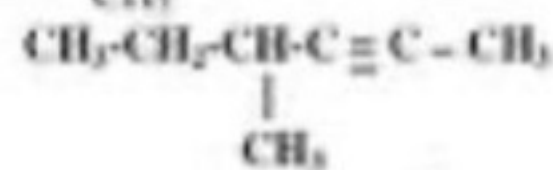
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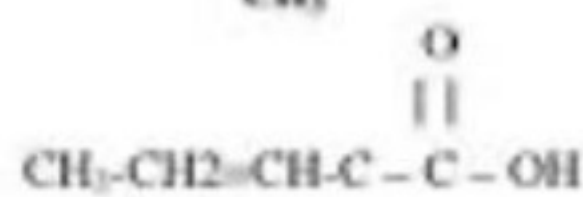
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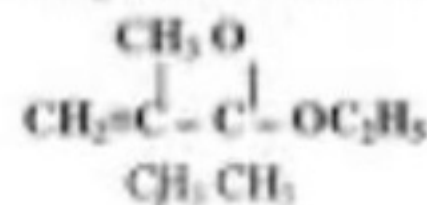
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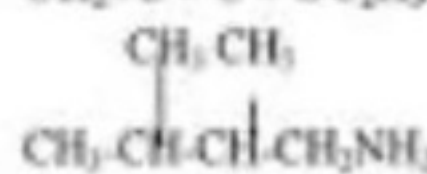
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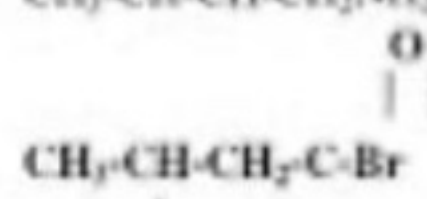
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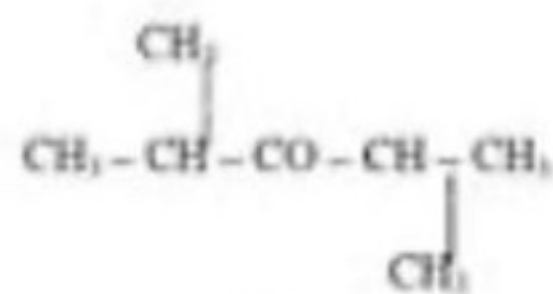
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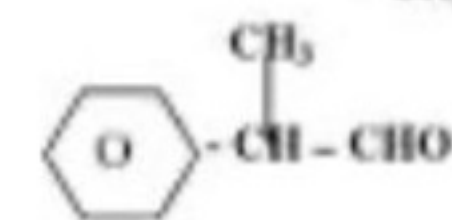
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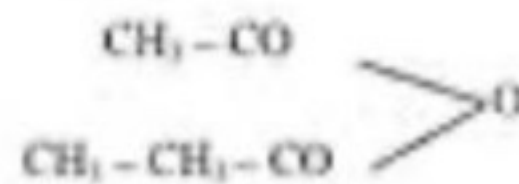
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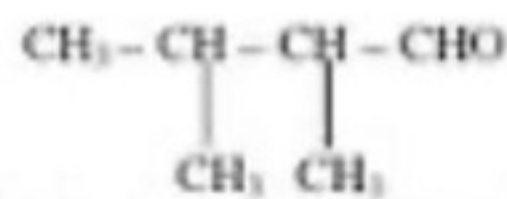
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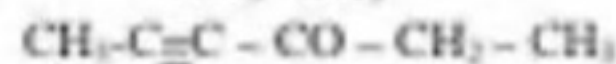
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38.



CLASS XI COMPUTER SCIENCE

1.	Which of the following data types max() can work upon? (a) string (b) tuple (c) list (d) all of these
2.	ord('G') returns the value _____.
3.	Define a single element tuple TS with the value 45.
4.	What will be the content of L after execution of the following code? L = [4,1,8,9,5] L = L[::-1]
5.	Write a program in python to find the lowest value present in a tuple without using min() function. [Hints: use loop]
6.	What is the resultant string for the following statement? i. "+" .join("Well") ii. 'Are' * 3
7.	Explain tuple unpacking with suitable example.
8.	Consider NL = [7.8, -2.4, 1, 3.7, 9] and answer the following: i. What will be the outcome of the following NL[-4:4:2] ? ii. Write a statement to sort the elements of NL in descending order of values.
9.	Find the output of the following program code: Msg="CompuTer" Msg1="" for i in range(0, len(Msg)): if Msg[i].isupper(): Msg1=Msg1+Msg[i].lower() elif i%2==0: Msg1=Msg1+'#' else: Msg1=Msg1+Msg[i].upper() print(Msg1)
10.	Write a program in python to input a text from the user and display the number of vowels present in the text. e.g. – If the text is “Welcome all the students to KV DRDO” the no. of vowel is 9.
11.	Find output of the following code: V = (78, 21, [31, 56], 'Guess', 45) print(V[3][2]) V[2][1]=40 for i in range(-1,-len(V),-2): x = V[i]*2 print(x)
12.	Write a program in python to input a list of real numbers from the user and rearrange the list like all negative numbers first, then Zero's if any, then all the positive numbers. No sorting of values required. e.g. If input is [31, 19, 0, -7, 54, -56, - 87, 74] the output will be [-7, -56, -87, 0, 31, 19, 54, 74]
13.	Consider the following program and answer the following questions: Str = "Violet Indigo Blue Green Yellow Orange Red" W = _____ # STATEMENT 1 X = W._____() # STATEMENT 2 Y = W._____('Blue') # STATEMENT 3 W._____ # STATEMENT 4 W.insert(_____) # STATEMENT 5 print(W)
	i. Complete STATEMENT 1 so that W contains ['Violet', 'Indigo', 'Blue', 'Green', 'Yellow', 'Orange', 'Red']

	ii. Fill the blank in STATEMENT 2 to delete the last element from W.
	iii. Write the correct function to delete 'Blue' from W in STATEMENT 3.
	iv. Fill in the blanks for STATEMENT 4 to add two more elements 'Pink' and 'Grey' at the end of W
	v. Write down the correct parameter for STATEMENT 5 so that W is ['Violet', 'White', 'Indigo', 'Green', 'Yellow', 'Orange', 'Pink', 'Grey']
14.	<p>Akshit is a computer science student of class XI. He has written a program for manipulating string. Fill the blank with appropriate command / method</p> <pre> myaddress="Wazirpur 1 , New Yamuna Nagar , New Delhi" for i in range(_____): #line 1 if myaddress[i].____ : #line 2 print(myaddress[i].upper(), end="") elif myaddress[i]._____: # line 3 print("*",end="") else: print(myaddress[i],end="") print() print(len(myaddress.split(","))) #line 4 print(myaddress.replace("New","Old")) #line 5 </pre> <p>a. Fill in the blank in Line 1 to calculate length of string b. Write the function in line 2 to check lower letter. c. Write the function in line 3 to check digit. d. What will be the output of line 4. e. What will be the output of line 5.</p>

KVDRDO

Holiday homework Class 11, Dec 2024

- 1. Give a comparative account of various classes of Fungi**
- 2. Draw a neat labelled diagram of dicotyledon seed.**
- 3. Write a note on zwitterion.**
- 4. Differentiate between nucleotide and nucleoside with an example**
- 5. Describe Placentation and Aestivation with neat labeled diagrams**
- 6. Explain T.S of dicot root with a neat labelled diagram**
- 7. Explain ETS**
- 8. Describe chemiosmotic synthesis with neat labelled diagram.**
- 9. Describe C3 and C4 cycle with diagram**
- 10. Describe Prophase I and Mitosis.**
- 11. What is apical dominance. Name any two synthetic auxins.**
- 12. Describe cofactors**
- 13. Complete your record and investigatory in all respects and submit**