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**NORTHWEST ACCREDITATION COMMISSION, USA
HIGH SCHOOL DIPLOMA (Sr. Secondary/12TH) 2018-2019**

Subject- BIOLOGY (PRACTICAL)

Question Paper No. :

B	P	3	3
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Subject Code : PBI1206

Question Paper Code:

P	B	7	1
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Total Time: 01.30 Hours.

Total Marks: 30

GENERAL INSTRUCTIONS

1. OPENING AND CHECKING OF THE QUESTION-BOOKLET

Break open the seal of the Question-Booklet only when the announcement is made by the Invigilator. After breaking the seal and before attempting the questions, student should immediately check for:

- a) The number of the printed page in the Question-Booklet is the same as mentioned on the cover page of the Booklet and
- b) Any printing error in the Booklet pages, if any.
Any discrepancy or error should be brought to the notice of the Invigilator who will then replace the Booklet. No additional time will be given for this.

2. No student, without the permission of the Superintendent, or the Invigilator concerned, is to leave his/ her seat or the Examination Room.

3. FILLING UP THE REQUIRED INFORMATION ON QUESTION-BOOKLET AND ANSWER SHEET

After breaking open the seal and checking the Booklet, student should:

- a) Fill up the **Question Paper No. and Question Paper Code** (mentioned on the cover of Question-Booklet) in the space provided on the First Answer Sheet.
- b) Fill up his/her Roll Number on the First Answer Sheet and on each Supplementary Answer Sheet, if taken.
- c) Student should mention the total number of **Supplementary Answer Sheet**, if taken, in the space provided on the First Answer Sheet and also fill up the Serial Number mentioned on each **Supplementary Answer Sheet** along with his/her Roll Number in the register maintained by the Invigilator. Student must tie all the Answer Sheets with the thread provided by the Invigilator.

4. INSTRUCTIONS ABOUT QUESTION PAPER

- a) This Question Paper includes five questions. All questions are compulsory.
- b) All questions are carrying six marks each in approximately 80-120 words.

5. Student found in possession of Cellular Phone / Mobile Phone / Pager or any other Communication Device and/or any Book/Note whether using or not, will be liable to be debarred for taking examination(s) either permanently or for specified period or/and dealt with as per law or/and ordinance of the School/SERI according to the nature of offence, or/and he/she may be proceeded against and shall be liable for prosecution under the relevant provision of the Statutory Law.

THE ANSWER SHEET IS TO BE RETURNED ON COMPLETION OF THE TEST

This Question Paper MUST be attached with Answer Sheet

- Question 1.** (a) List the different attributes that a population has and not an individual organism.
- (b) What is population density? Explain any three different ways the population density can be measured, with the help of an example each

OR

“It is often said that the pyramid of energy is always upright. On the other hand, the pyramid of biomass can be both upright and inverted”. Explain with the help of examples and sketches.

- Question 2.** (a) Plan an experiment and prepare a flow chart of the steps that you would follow to ensure that the seeds are formed only from the desired sets of pollen grains. Name the type of experiment that you carried out.
- (b) Write the importance of such experiments.

OR

- (a) What are methanogens? How do they help to generate biogas?
- (b) Why are the plants raised through micropropagation termed as somaclones?
- (c) Mention two advantages of this technique.

- Question 3.** (a) Differentiate between homology and analogy. Give one example of each.
- (b) What is a test cross? How can it decipher the heterozygosity of a plant?

OR

- (a) Why must a cell be made 'competent' in biotechnology experiments? How does calcium ion help in doing so?
- (b) State the role of 'biolistic gun' in biotechnology experiments.

- Question 4.** (a) Enumerate any six essentials of good, effective dairy farm management practices.
- (b) Explain the function of “anaerobic sludge digester” in a sewage treatment plant.

OR

Describe the roles of pituitary and ovarian hormones during the menstrual cycle in a human female.

- Question 5.** (a) How are Mendelian inheritance, polygenic inheritance and pleiotropy different from each other?
- (b) Explain polygenic inheritance pattern with the help of a suitable example.

OR

- (a) Draw a labelled diagram of a “replicating fork” showing the polarity. Why does DNA replication occur within such “forks”?
- (b) Name two enzymes involved in the process of DNA replication along with their properties.

END OF THE QUESTION PAPER