

# NORTHWEST ACCREDITATION COMMISSION, USA

HIGH SCHOOL DIPLOMA (Sr. Secondary/12TH) 2014-2015

Subject- BIOLOGY (Practical), Subject Code – PB404

Question Paper No. : 

B	O	8	4
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Date: 

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Question Paper Code: 

B	P	1	6
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Roll No.: 

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TIME: 1.30 Hours.

TOTAL MARKS: 30

## IMPORTANT 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:

- The number of the printed page in the Question-Booklet is the same as mentioned on the cover page of the Booklet and
- 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:

- 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.
- Fill up his/her Roll Number on the First Answer Sheet and on each Supplementary Answer Sheet, if taken.
- 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

- This Question Paper includes five questions. All questions are compulsory.
- All questions are carrying six marks each.

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

- Question 1.** (a) Draw a Schematic diagram of a fertilized embryosac of an Angiosperm.  
(b) Describe the stages in embryo development in a Dicot plant.

**OR**

- (a) Diagrammatically show the stages in the development of megaspore mother cell to form a mature embryo sac in angiosperms.  
(b) Why is this type of embryo sac development called as monosporic?

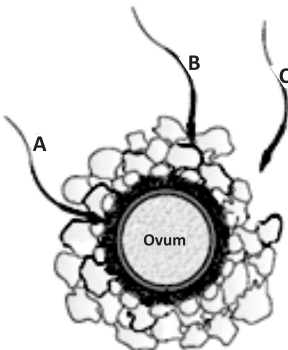
- Question 2.** Explain the following in context of cancer:

- (a) Benign tumor
- (b) Malignant tumor
- (c) Oncogenes / Carcinogens
- (d) Oncogenes
- (e) Contact inhibition

**OR**

- (A) Explain what DNA replication refers to.  
(B) State the properties of DNA replication model.  
(C) List any three enzymes involved in the process along with their functions.

- Question 3.**



- (a) Compare the fate of sperms shown in the diagram.
- (b) What is the role of zona pellucida in this process?
- (c) Analyze the changes occurring in the ovum during the process.
- (d) Mention what helps in the entry of sperm into the ovum.
- (e) Specify the region of female reproductive system where the event represented in the diagram takes place.

**OR**

Name the genes that constitute an operon. How does lac operon get switched on in the presence of lactose?

**Question 4.** Explain the process of protein synthesis from processed m-RNA.

**OR**

Which methodology is used while sequencing the total DNA from a cell? Explain it in detail.

**Question 5.** (a) What are pleiotropic genes? Give example.  
(b) Describe the inheritance pattern of human skin color.  
(c) Differentiate between co dominance and incomplete dominance.

**OR**

Describe adaptive immunity development in the body. Write the type of cells and molecules involved in it. How is it different from innate immunity?

**END OF THE QUESTION PAPER**

Sample Paper