

Roll No.: Date: 

**NORTHWEST ACCREDITATION COMMISSION, USA**  
**SR. SECONDARY/12<sup>TH</sup>**  
**2017-2018**

Subject- BIOLOGY (THEORY)

Question Paper No. : 

B	T	3	2
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Subject Code : BI1206

Question Paper Code: 

B	G	7	0
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Total Time: 03.00 Hours.

Total Marks: 70

**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**

This Question Paper is divided into three Sections – A, B and C. All Sections are compulsory. Attempt all Sections as per instructions.

- a) Section A question No. 1 to 4 are very short questions carrying 3 marks each in approximately 20-30 words.
- b) Section B question No. 5 to 11 are short questions carrying 4 marks each in approximately 30-50 words.
- c) Section C question No. 12 to 16 are long questions carrying 6 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

## SECTION A

Total number of questions: 4	Marks allocated to each question: 3	Total marks: 12
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- Question 1.** What is anthropogenic extinction? How is it different from mass extinction?
- Question 2.** Where do you find complex V in mitochondria? What is its role?
- Question 3.** In an autoimmune disorder, a person produces antibodies that mimic the action of TSH. Name the disorder, which results due to this situation. Give its symptoms.
- Question 4.** Draw a sectional view of a pollen grain and label the following parts:
- (a) Intine (b) Exine  
(c) Germ pore (d) Generative cell

## SECTION B

Total number of questions: 7	Marks allocated to each question: 4	Total marks: 28
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- Question 5.** Explain the Capillarity Theory in respect of ascent of water in plants. Name the tissue involved.
- Question 6.** Why is sub-culturing essential in plant tissue culture?
- Question 7.** Distinguish between epimorphic and morphallactic regeneration, giving one example of each.

**OR**

Briefly describe the stages of spermatogenesis in humans.

- Question 8.** Where and how is urea produced in ureotelic animals? What happens to the kidney filtrate in descending loop of Henle and collecting tubules in humans?
- Question 9.** Define innate immunity. Name and explain the category of barrier which involves macrophages.

**OR**

Why is suspension culture constantly agitated? Give three reasons.

**Question 10.** Draw a schematic labelled diagram to show the ATP synthesis by inner membrane particles of mitochondrion.

**Question 11.** How is the carbon dioxide released from the blood into the alveoli of lungs? Explain.

**OR**

Explain the significance of thermal stratification in a lake with reference to winter, summer and spring seasons.

### SECTION C

Total number of questions: 5	Marks allocated to each question: 6	Total marks: 30
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**Question 12.** Explain the electron transport system. Where does it occur in a mitochondrion and what is the role of oxygen in it?

**OR**

What is oxygen-haemoglobin dissociation curve? Describe the role of red blood cells in the transport of oxygen and carbon dioxide by blood.

**Question 13.** Briefly explain the principle, procedure and the role of ELISA.

**OR**

What is somatic hybridisation? Explain the various steps involved in the process. Mention any two uses of somatic hybridisation.

**Question 14.** Why do  $C_4$  plants have dimorphic chloroplasts? Explain the different steps involved in  $C_4$  photosynthetic carbon cycle in such plants.

**OR**

Explain the mechanism of muscle contraction by sliding filament theory.

**Question 15.** Describe the roles of pituitary and ovarian hormones during the menstrual cycle in a human female.

**OR**

What is a 'reflex action'? With the help of an example describe the functions of the various components of a spinal reflex arc.

- Question 16.** (a) Draw a section of the microscopic structure of human retina and label any six parts in it.
- (b) Name the structure that determines the eye colour in humans. What is the normal function of this structure?
- (c) Name the point of sharpest vision and the point of no vision in human eye.

**OR**

Where does Calvin cycle occur in a chloroplast? Give a schematic representation of the cycle.

**END OF THE QUESTION PAPER**