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Roll No.

Date:

NORTHWEST ACCREDITATION COMMISSION, USA

HIGH SCHOOL DIPLOMA (Sr. Secondary/12TH)

Subject- Biology(theory)

Subject Code – B404

Question Paper No. :

Question Paper code:

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:

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 5 are very short questions carrying 2 marks each.

b) Section B question No. 6 to 15 are short questions carrying 3 marks each.

c) Section C question No. 16 to 21 are long questions carrying 5 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.

TIME: 3 Hours.

TOTAL MARKS: 70

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

P.T.O.

SECTION A

Total number of questions: 5	Marks allocated to each question: 2	Total marks: 10
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Question 1. Name the interaction that exists between *Cuscuta* and shoe-flower plant.

Question 2. State the chromosomal defect in individuals with Turner's syndrome.

Question 3. Why do we add an inoculum of curd to milk for curdling it?

Question 4. It was diagnosed by a specialist that the immune system of the body of a patient has been suppressed. Name the disease the patient has been suffering from and its causative agent.

Question 5. Why is cardiac pacemaker a life-saving device?

SECTION B

Total number of questions: 10	Marks allocated to each question: 3	Total marks: 30
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- Question 6. Draw a flow chart to depict the multiplication of an HIV virus in a host cell.
- Question 7. Why do tribes who live in high altitude of Himalayas experience discomfort in respiration? How do they get adapted to survive in such a situation?
- Question 8. What is senescence? How do free radicals make senescence faster?
- Question 9. Does the location of Juxtaglomerular apparatus in human kidney explain its function.
- Question 10. Why is suspension culture constantly agitated? Give three reasons.
- Question 11. Draw a diagram of the L.S. of mature angiosperm (anatropous) ovule. Label any six parts.
- Question 12. A sugarcane has been affected by virus. How can a virus free cane be developed from it? Explain the procedure.
- Question 13. Explain the events in a normal woman during her menstrual cycle on the following days.
- Ovarian event from 13-15 days
 - Ovarian hormones level from 16 to 23 days
 - Uterine events from 24 to 29 days
- Question 14. What is senescence? How do free radicals make senescence faster?
- Question 15. Explain with the help of a suitable example for each of the following terms:
- morphallaxis
 - epimorphosis
 - compensatory regeneration.

SECTION C

Total number of questions: 6	Marks allocated to each question: 5	Total marks: 30
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- Question 16. Explain the application of biotechnology in producing Bt cotton.

OR

Unless the vector and source DNA are cut, fragments separated and joined, the desired recombinant vector molecule cannot be created.

- How are the desirable DNA sequences cut?
- Explain the technique used to separate the cut fragments.
- How are the resultant fragments joined to the vector DNA molecule?

- Question 17. (a) Describe the different steps in one complete cycle of PCR.

- State the purpose of such an amplified DNA sequence.

OR

A pea plant producing yellow coloured and round seeds is given with unknown genotypes. Explain how you would find the correct genotypes of the plants with respect to the two traits mentioned. Work out the cross and name it.

- Question 18. (a) Where are B-cells and T-cells produced in the human body? How do they differ from each other?

P.T.O.

Mention any two differences.

(b) Name any three classes of immunoglobulins in humans. Write one function of each.

OR

What is a synovial joint? What makes such a joint move freely? Describe any three kinds of synovial joints in the human body, giving one example of each.

Question 19. Draw a diagram of the longitudinal section of a mature anatropous ovule and label any ten parts in it.

OR

(a) What causes the depletion of Ozone in the stratosphere. Explain the role of UV rays and this chemical in its depletion.

(b) How does this depletion affect human life?

Question 20. (a) Draw a labelled diagram of the sectional view of a typical anatropous ovule.

(b) Mention the fate of all the components of the embryo sac after fertilization?

OR

Malarial parasite 'Plasmodium' completes its life cycle in two hosts. Draw its complete life cycle and explain various stages it follows throughout its life.

Question 21. What is photorespiration? Explain the photorespiration pathway in the plants.

OR

How is specific immunity generated in our body? Why is specific immunity considered to be unique in its function? Write any four features of this type of immunity.

END OF THE QUESTION PAPER