| Student Name | | | | | |
|---|---|---|---|---|---|
| Date | | Grade | XII | Roll No. | Pre-board |
| Subject | Biology | Marks | 70 | Teacher's Sign | Time : 3 Hours |

**General instructions**

1. **There are a total of 27 questions and five sections in each question paper. All questions are compulsory.**
2. **Section A contains 1 to 5 multiple choice questions of one mark each.**
   **Section B contains question numbers 6 to 12 short answer type I questions of two marks each.**
   **Section C contains questions numbers from 13 to 21 ,short answer type II questions of three marks each.**
   **Section D contains question numbers from 22 to 24 , case based short answer type questions of three marks each.**
   **Section E contains question numbers from 25 o 27 , long answer type questions of five marks each.**
3. **There is no overall choice in the question paper. However internal choices are provided in questions of one mark, one question of two marks , two questions of three marks and all three questions of five marks. An examinee is to attempt any one o the question out of the two given in question paper with the same question number.**

**SECTION A**

**1** Which of the following is not an example of in situ conservation ?
(a) Biosphere reserves
(b) National parks
(c) Wild life sanctuaries
(d) Zoological parks

OR

Cryopreservation is the preservation of germplasm at very low temperature of around
(a) – 121°C
(b) – 196°C
(c) 0°C
(d) – 101°C

**2** Which of the following is not an example of preypredator relationship ?
(a) Tiger eating a deer
(b) Plant Nepenthes trapping an insect
(c) Bacteria decomposing organic matter
(d) Crocodile killing a man

OR

Two different species cannot live for long duration in the same niche or habitat. This law is called

(a) Allen's law
(b) Glogerrule
(c) Competitive exclusion principle
(d) Weisman's theory.

**3** α – 1 – antitrypsin is

(a) an antacid
(b) an enzyme
(c) used to treat arthritis
(d) used to treat emphysema.

**4** Azolla pinnata has been found to be an important biofertiliser for paddy crops. This quality is due to the presence of

(a) $N_2$ fixing bacteria
(b) $N_2$ fixing cyanobacteria
(c) mycorrhizae
(d) all of these

**5 .** The substance produced by a cell in viral infection that can protect other cells from further infection is

(a) serotonin
(b) colostrum
(c) interferon
(d) histamine.

## SECTION B

**6** Why does Bt toxin not kill the bacterium that produces it, but kill the insect that ingests it?

OR

What do 'cry genes' in Bacillus thuringiensis code for? State its importance for cotton crop.

**7** Explain the response of all communities to environment over time.

**8** .Name two groups of organisms which constitute 'floes'. Write their influence on the level of BOD during biological treatment of sewage.

**9** Why is proinsulin so called? How is insulin different from it?

**10** Name the two different categories of microbes naturally occurring in sewage water.

Explain their role in cleaning sewage water into usable water.

11 Name an allergen and write the response of human body when exposed to it

12 Where does fertilisation occur in humans? Explain the events that occur during this process.

**SECTION C**

13 Name the pest that destroys the cotton bolls. Explain the role of Bacillus thuringiensis in protecting the cotton crop against the pest to increase the yield.

14.(i)State how the constant internal environment is beneficial to organisms.
(ii)Explain any two alternatives by which organisms can overcome stressful external conditions.

OR

How do organisms cope with stressful external environmental conditions which are localised or of short duration?

**15** Any recombinant DNA with a desired gene is required in billion copies for commercial use. How is the amplification done? Explain.

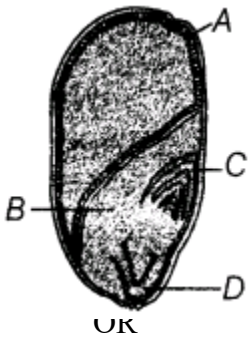
**16** (i)Name the causative organisms for the following diseases.
(a) Elephantiases
(b) Ringworm
(c) Amoebiasis
(ii) How can public hygiene help control such diseases?

**17** .It is established that RNA is the first genetic material. Explain giving three reasons

**18** Why is DNA considered a better hereditary material than RNA?

**19** Describe endosperm development in angiosperm.

**20** LS of a maize grain is given below. Label the parts A, B, C and D in it. [All India 2012]




OR

(i) Why are seeds of some grasses called apomictic? Explain.
(ii) State two reasons to convince a farmer to use a apomictic crop.

**21** A woman has certain queries as listed below, before starting with contraceptive pills. Answer

them.
(i)What do contraceptive pills contain and how do they act as contraceptives?
(ii)What schedule should be followed for taking these pills?

**SECTION D**

**22** .Explain the phenomenon of double fertilisation.

**23** .Name and explain the role of inner and middle walls of human uterus.

**24** Draw a labelled diagram of the sectional view of a human seminiferous tubule (six parts to be labelled).

**SECTION E**

**25.**(i) List any four abiotic components that lead to variations in the physical and chemical conditions of habitats.
(ii) Explain the impact of these components on the distribution of organisms in different habitats.

OR

(i) Name the category of microbes naturally occurring in sewage and making it less polluted during the treatment.
(ii) Explain the different steps involved in the secondary treatment of sewage.

**26** .Explain the process of replication of a retrovirus after it gains ' entry into the human body.

OR

(i)Explain the events taking place at the time of fertilisation of an ovum in a human female.
(ii)Trace the development of the zygote up to its implantation in the uterus.
(iii)Name and draw a labelled sectional view of the embryonic stage that gets implanted.

**27** Angiosperm flowers may be monoecious, cleistogamous or show self incompatibility. Describe the characteristic features of each one of them and state. Which one of these flowers promotes inbreeding and out breeding respectively.

OR

.Draw a labelled diagram of the reproductive system in human female.