



2018 VI 13

1430

Seat No. :

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Time : 2½ Hours

BIOLOGY
(Old Pattern)

Subject Code

H	7	0	4
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Total No. of Questions : 5

(Printed Pages : 4)

Maximum Marks : 55

- Instructions :**
- All questions are **compulsory**.*
 - Answer **each** question on a **fresh** page.*
 - Write the **main** question no. and sub question no. **clearly**.*
 - Draw **neat** diagram **wherever** specified in lead pencil only.*
 - The questions paper consists of **5** main questions.*
 - There is no overall choice however internal choice has been provided in **one** question **each** of **4** marks, **3** marks and **two** questions of **2** marks.*
 - Multiple choice question should be attempted only once on the answer book. If attempted more than once, it will not be evaluated.*

1. A) Choose the correct alternative and rewrite.

The type of gametophyte formed by a staminate flower will be _____ **1**

- | | |
|--------------|----------------|
| • Pollen sac | • Pollen grain |
| • Anther | • Embryo sac |

B) A breeder is trying to hybridize 2 plants with desirable qualities. He has some doubts. What method should he follow to ensure success to his experiment ? **1**

C) Draw a neat diagrammatic representation of a mature embryo sac. **2**

D) The bio diversity of Alaska situated at latitude of 64° N is having lesser Biological biodiversity than Brazil situated at 14°S. Justify scientifically. **2**



E) Draw a neat diagram of structure of a human sperm. **2**

F) Discuss the events that will take place after the formation of zygote till implantation of the blastocyst in the uterus. **3**

OR

F) Discuss the major features of embryonic development at various stages of pregnancy. **3**

2. A) Choose the correct alternative and rewrite.

The pioneer species for primary succession on a rock will be _____ **1**

- Algae
- Lichens
- Zooplanktons
- Bryophytes

B) A dead Artic fox will take longer time to decompose as compared to a fox of same weight and size in the tropics. Give scientific reason. **1**

C) Draw a neat diagram of DNA double helix. **2**

D) Explain the 2 additional complexities involved in eukaryotic transcription. **3**

E) In Rabbits grey hair is dominant to white hair and black eyes are dominant to red eyes. A breeder crossed a male rabbit (homozygous for the dominant trait) with a female rabbit (recessive for the trait). Using punnett square work out the F1 and F2 generation and derive the phenotypic ratio of F2. **4**

3. A) Choose the correct alternative and rewrite.

The proteins encoded by the gene *cryIAc* and *cryIIAb* will control _____ **1**

- boll worms
- Aphids
- Corn borers
- Bud worms



- B) A study showed that in a population of A the sum total of the allelic frequency is equal to 1 whereas in population of B it is not equal to 1. What can be inferred from the above results ? **1**
- C) What are the various ways the transgenic animals are used to the benefits of human being ? **2**
- D) In a biotechnology lab a teacher wants to demonstrate a technique for which some of the requirements are calcium ions, ice and heat. Identify the technique the teacher wants to demonstrate and explain the procedure. **2**
- E) Enlist various paleontological evidences to support evolution. **2**
- OR
- E) What is adaptive radiation ? Give 2 examples. **2**
- F) Write a note on Gel Electrophoresis. **3**
4. A) Choose the correct alternative and rewrite. **1**
- Inbreeding depression can be overcome by _____
- Inbreeding
 - Out crossing
 - Cross breeding
 - None of the above
- B) One limb of Shivam is slowly getting inflamed. On consultation with a doctor, he is told that it is due to a pathogen that resides in the lymphatic system of the limb. Name the pathogen causing the disease. **1**
- C) Explain the methods of plant breeding for disease resistance. **2**
- D) Enumerate the role of microbes as bio fertilizers in organic farming. **3**
- E) Explain what is innate immunity ? How does it accomplish its function ? Describe any 3 barriers giving an example of each. **4**
- OR
- E) Explain the techniques used to diagnose cancer and the various approaches for its treatment. **4**



5. A) Choose the correct alternative and rewrite.

The radiations given off by Nuclear waste is extremely damaging to biological organisms because it causes. _____ **1**

- Breathlessness
- Replication
- Blindness
- Mutation

B) Why is CNG preferred over diesel for public transport in the metro cities ? **1**

C) A NGO in Goa has decided to undertake a campaign of creating awareness on 'reproductively healthy society'. As an active member of the NGO what activities would you take up to make the campaign a success ? **2**

D) Discuss the various steps undertaken by the Indian Government to overcome population explosion. **2**

E) What are the effects of greenhouse gases ? **2**

OR

What are the effects of deforestation ? **2**

F) Give an account of how temperature as an abiotic factor plays a role in distribution of living organisms. **3**
