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Time: 2 ½ Hours

BIOLOGY

Subject Code

H	7	0	4
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B

Total No. Of Questions: 05

(Printed Pages: 04)

Maximum Marks: 55

INSTRUCTIONS:

- (i) All questions are compulsory.
- (ii) Answer each main question on a fresh page.
- (iii) Write the main question no & sub-question no clearly
- (iv) Draw a neat diagram wherever specified in lead pencil only.
- (v) The question paper consists of 5 main questions.
- (vi) 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.
- (vii) Multiple choice questions should be attempted only once on the answer book. If attempted more than once, it will not be evaluated.

Q. 1 (A) Choose the correct alternative and rewrite:

Pollen grains are well preserved as the fossils because of the presence of _____ [1]

- Sporopollenin
- Germ pore
- Exine
- Intine

(B) Dr. Minaxi is the head of zoology department, in Lucknow University. In her laboratory she developed number of frogs for research work, from single parent, which are morphologically and genetically similar. What method do you think Dr. Minaxi adopted for the above process? [1]

(C) Draw a neat diagram showing L.S of flower. [2]

- (D) Mr. Jack, a dictator of Golden Island ordered cutting of the forest for gold mining. After two decades he found vast changes and loss in biological diversity. As a student of ecology suggest any four causes for such losses. [2]
- (E) Draw a neat diagram of structure of sperm. [2]
- (F) What is Oogenesis? Describe the process in detail. [3]

OR

What is spermatogenesis? Describe the process in detail. [3]

Q. 2 (A) Choose the correct alternative and rewrite:

The rate of formation of new organic matter by consumer is referred to as - [1]

- Gross primary productivity.
- Net primary productivity.
- Secondary productivity.
- Productivity

(B) Mr. Salim is a sailor who visited the island of volcanoes. He observed certain species of lichens on the cooled lava. Which terminology will you suggest to the growth of such living organism? [1]

(C) Draw a neat diagram of double helix of DNA. [2]

(D) What is transcription? Describe the process of transcription in eukaryotes. [3]

(E) Discuss in detail sex determination in human. Mention the features seen in 21st trisomy and XXY genetic abnormality. [4]

OR

State the law of independent assortment. In a pea plant yellow colour seed is dominant over green, and round shape is dominant over wrinkled shape. With the help of Punnet square state dihybrid cross and phenotypic ratio. [4]

- Q. 3 (A) Choose correct alternative and rewrite:
'ELISA' test is based on the principle of- [1]
- Manipulation of DNA.
 - r-DNA technology.
 - Antigen-antibody reaction.
 - RNA interference
- (B) What is saltation? [1]
- (C) Give the main advantages of genetically modified plants (GM plants). [2]
- (D) Describe different steps involved in the isolation of DNA in a pure form. [2]
- (E) Dr.Ramesh is an anthropologist, During excavation in Java, he found fossil remains of a carnivorous animal with brain capacity 900 cc. With your knowledge of the subject - [2]
- (i) Name the form of animal discovered by Dr.Ramesh.
 - (ii) How long ago this animal existed?
- (F) What is a palindrome in DNA? Give the role of restriction enzymes in a palindrome. [3]

Q. 4 (A) Choose the correct alternative and rewrite.

Rama complained intense itching of hands and feet: Examination showed dry scaly lesions on the skin and nails, which is symptom of- [1]

- Filariasis
- Amoebiasis
- Ascariasis
- Ringworm

(B) How is controlled breeding experiment carried out in animals? [1]

(C) Mr.Vedant is a farmer from Pernem, interested to start dairy farm scientifically. As a student of science which processes and symptoms you will suggest to increase yield and improve milk quality, in his dairy farm? [2]

(D) Discuss the various methods involved in the detection of cancer. [2]

OR

How HIV transmission takes place in human? [2]

(E) Explain the different types of barriers of innate immunity. [2]

(F) Which are the microbes and what role do they play in house hold products? [3]

Q. 5 (A) Choose the correct alternative and rewrite: [1]

The process of restoring a forest that once existed but was destroyed at some point of time in the past is –

- Cultivation
- Destruction
- Deforestation
- Reforestation

(B) State the way by which the amount of organic matter in sewage is estimated. [1]

(C) Discuss the different ways by which eutrophication brings about natural ageing of a lake. [2]

OR

How noise pollution affects human health? Suggest the measures to prevent its impact on human health. [2]

(D) What is commensalism? Illustrate with suitable examples.(any two) [3]

(E) Explain the natural and barrier methods help in control of human population. [4]
