FIRST TERMINAL EXAMINATION, 2016
BIOLOGY

Time : 3 hrs. **Class XII** **M.M. : 70**

Date – 16.09.2016

General Instructions:

- *There are a total of **26 questions** and **5 sections**.*
- ***Section A** contains questions number **1 to 5** of **1 mark** each. **Section B** contains questions number **6 to 10** of **2 marks** each. **Section C** contains questions number **11 to 22** of **3 marks** each. **Section D** contains question number **23, value based** question of **4 marks**. **Section E** contains questions number **24 to 26** of **5 marks** each.*
- *There are no overall choices. However, internal choice has been provided in one question of 2 marks, in one question of 3 marks and all the questions of 5 marks. An examinee is to attempt any one question out of the two given in the question paper with the same question number.*

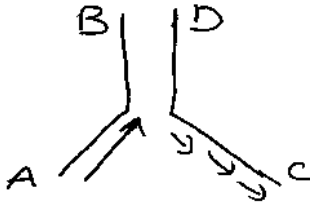
SECTION – A

Q.1 Name any one green house gas and its possible source of production on large scale.

Q.2 One of the control measure employed by the government is applications of euro III norms. What does it stipulate?

Q.3 When a tall pea plant was self pollinated ¼ of the progeny were dwarf. Give the genotype of the parent and the dwarf progenies.

Q.4 Mention the polarity of the DNA strands A-B and C-D shown in the replicating fork given below.



Q.5 Give the name of the source organism of the gene cry IAc and its target pest.

SECTION – B

Q.6 a) Why do children cured by enzyme replacement therapy for adenosine deaminase deficiency need periodic treatment?

b) Name any two techniques that serve the purpose of early diagnosis of some bacterial / viral human diseases.

Q.7 How is Darwin concept of evolution different from De Vries?

Q.8 a) State Gause's competitive exclusion principle.

b) Why is calotropis not grazed by goats and cattles.

Q.9 Draw a schematic representation of Lac operon.

Q.10 Differentiate between the following :

a) Production and Decomposition

b) Primary and Secondary Productivity

OR

What characteristics make a community stable.

SECTION – C

Q.11 a) Name two metals used in catalytic converter.

b) State the cause of accelerated eutrophication.

c) What is poly blend? Give its use.

Q.12 a) Why are grasshopper and Drosophila said to show male heterogamety.

b) Explain with an example, where a gene which carries a major disadvantage in homozygous state, confers an advantage in heterozygous condition.

Q.13 a) Draw a schematic structure of a transcription unit.

b) Why hnRNA is required to undergo splicing.

Q.14 Give the salient features of Human Genome project.

Q.15 Explain with diagrammatic representation of the operation of Natural selection on different traits.

Q.16 a) Draw a graph to show exponential and logistic growth models.

b) Give equations for both of them.

Q.17 a) What does standing crop of a trophic level represent?

b) List any two ways of measuring the standing crop of a trophic level.

c) Name any two organisms which can occupy more than one trophic level in an ecosystem.

Q.18 Since the origin of life on earth, there were 5 episodes of mass extinction of species.

a) How is 6^{th} extinction different from the previous episodes?

b) Who is responsible for 6^{th} extinction?

c) List any four points that can help to overcome this disaster.

Q.19 a) What is Hardy-Weinberg Principle?

b) Give its equation.

c) Name the factors affecting it.

Q.20 Draw a schematic diagram to show the formation of recombinant DNA by the action of restriction endonuclease enzyme-Eco RI.

Q.21 Describe Frederick Griffith experiment on mice.

Q.22 Draw a labelled diagram of sparged stirred-tank bioreactor.

OR

a) Name two DNA vaccines.

b) State the role of C-peptide in human insulin.

c) What is a patent?

SECTION – D

Q.23 No evidence was found on a crime scene, other than only a few hair strands. The inspector wanted to find the criminal.

a) In your opining what could be the solution to this problem.

b) What are basic steps in this technique?

c) What values are shown by the inspector?

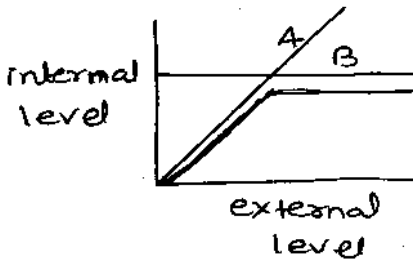
SECTION – E

Q.24 How did Harshey and Chase established that DNA is transferred from virus to bacteria.

OR

Describe the process of translation with labelled diagrams.

Q.25



a) i) Which among A and B depicts conformers?

ii) What does the other line in graph depict?

iii) Which category humans belong?

b) What determine the type of Benthic animals in an aquatic ecosystem?

c) Define population and community.

OR

a) Differentiate between the following with at least 3 examples.

i) Mutualism and Parasitism.

ii) Commensalism and Predation.

b) What is ammensalism? Give one example.

Q.26 a) What is plasmid? Why it is selected as vector?

b) What is transformation of host?

c) Draw a diagram of pBR 322.

OR

a) How can retrovirus be used efficiently in biotechnology experiments inspite of them being disease causing.

b) Mention the source of thermostable DNA polymerase.

c) What is Btcotton?