



**ANANDALAYA**  
**PREBOARD EXAMINATION - 2**  
**Class : XII**

Subject : BIOLOGY  
Date 18/01/2016

M.M : 70  
Time : 3 Hours

**GENERAL INSTRUCTIONS**

- All questions are compulsory
- This question paper consists of five sections, A, B, C, D and E. Section A contains 5 questions of one mark each, section B is of 5 questions of two marks each, section C is of 12 questions of three marks each and section D is of 1 question of four marks and section E is of 3 questions of 5 marks each.
- There is no overall choice. However, an internal choice has been provided in one question of two marks, one question of 3 marks and all questions of 5 marks weightage.
- Wherever necessary, the diagrams drawn should be neat and labelled.

**SECTION – A**

1. What is saltation? 1
2. If the given segment of a double stranded DNA has 30% thymine, what is the percentage of guanine and adenine in this DNA segment? 1
3. What is the norm set by Euro II for petrol and diesel vehicles? 1

**OR**

- What is meant by thermal pollution?
4. Give two examples of artificial ecosystems. 1
  5. Name two radioactive substances responsible for environmental pollution. 1

**SECTION - B**

6. How can you justify the fact that flower is a modified shoot? 2
7. What changes occur in the newly born baby of human? 2
8. What is Pedigree Analysis? Give two areas of applications of the same. 2
9. Name the proteins released by the cells making them less susceptible to viral attack. Which chemical is released by WBCs during infections that lead to increased body temperature? 2
10. Differentiate between electroporation and microinjection. 2

**SECTION - C**

11. What is GEAC and what are its objectives? 3
12. What are the effects of ultraviolet radiations on Human? (Write any 3 points). 3
13. What do you mean by Hot Spots of Biodiversity? Mention the criteria that determine it. 3
14. Name the pathogen, the vector and the symptoms of the disease Elephantiasis. 3
15. Expand MALT. Where are they located? State the functions of the lymph node. 3

**OR**

- What are lymphoid organs? Differentiate between primary and secondary lymphoid organs.
16. Define the term Totipotency. How are plantlets obtained from cultured cells? 3
  17. What are the commonly used plant growth regulators in plant tissue culture? What are their specific functions? 3
  18. How did Urey and Miller provide the conditions of primitive Earth to prove the origin of Earth in their Experiments? 3

19. t-RNA is charged with amino acid Phenylalanine: (a) What end of RNA is the Amino Acid attached? (b) What is the m-RNA codon that coded for Phenylalanine? (c) What is its anticodon? (d) Which enzyme is responsible for this attachment? 3
20. A diploid egg mother cell having 46 chromosomes produces two types of gametes – one with XX chromosomes plus 22 autosomes and the other with 22 autosomes only. What phenomenon led to this? Briefly explain the clinical features this may lead to? 3
21. Draw a diagram of section through human ovary and label the parts. 3
22. Differentiate between spermatogenesis and oogenesis. 3

#### **SECTION - D**

23. Mili is eager to know the sex of her unborn child. She approached a doctor for the same but the doctor refused to conduct the test. Instead she was explained of the statutory warning on the same and the reasons behind it. 4
- (a) What values did the doctor reflect through her initiative?  
 (b) Name the diagnostic test which reveals the sex of the unborn child.  
 (c) How is this test done?  
 (d) What social abuse is associated with the application of this test?

#### **SECTION –E**

24. (a) Explain the process of DNA replication with help of a schematic diagram. 5  
 (b) In which phase of the cell cycle does replication occur in Eukaryotes? What would happen if cell division is not followed after DNA replication?

#### **OR**

- (a) Explain Darwin Theory of Evolution with the help of one suitable example. State the two key concepts of the theory.  
 (b) Mention any three characteristics of Neanderthal man that lived in near East and Central Asia?
25. “Biotechnology can greatly promote human welfare, but it can also be misused to increase human sufferings.” Comment on the statement with the help of suitable examples. 5

#### **OR**

How are industrialized nations exploiting the bioresources of developing countries? Explain it by taking any examples.

26. What kinds of threats to the biodiversity may lead to its loss? 5

#### **OR**

What are the various sources of soil pollution and its effects on the environment?