

**INTERNATIONAL INDIAN SCHOOL – DAMMAM  
MODEL EXAMINATION – 2013-2014  
CLASS: XI - BIOTECHNOLOGY**

**Time Allowed: 3 Hrs**

**Total Marks: 70**

**General Instructions:**

- (1) All questions are compulsory.*
- (2) There is no overall choice. However internal choice has been provided in one question of three marks and two questions of five marks. You have to attempt only one of the choices in such questions. Question paper contains four sections – A, B, C and D*
- (3) Question numbers 1 to 6 are very short answer questions, carrying 1 mark each.*
- (4) Question numbers 7 to 14 are short answer questions, carrying 2 marks each.*
- (5) Question numbers 15 to 25 are also short answer questions, but carrying 3 marks each.*
- (6) Question numbers 26 to 28 are long answer questions, carrying 5 marks each.*

**Section – A (1 Mark)**

1. State the law of independent assortment.
2. Define glycosidic bond.
3. State the function of glycogen.
4. Differentiate between pluripotent and multipotent.
5. What are ampholytes?
6. Write the start and the 3 stop codons.

**Section – B (2 Marks)**

7. Explain Ninhydrin test.
8. Draw and label the structure of tRNA.
9. Write a short note on Q-bandings.
10. Explain alpha and beta structure of proteins.
11. What is the importance of patent and what all can be patented?
12. Define IU unit of an enzyme .
13. Differentiate between lysosomes and peroxisomes.
14. What does Giemsa solution consists of?

**Section – C (3 Marks)**

15. What is an idiogram? Define the arm ratio of an ideogram.
16. Explain the three processing reactions which happens to precursor mRNA in the nucleus before they are transported into the cytoplasm.
17. Define the following terms (a) Allele (b) Epistasis (c) Linkage

**OR**

Draw and explain the structure of a chloroplast

18. Differentiate between phase contrast dark field and fluorescence microscopy.
19. Name and give a short note on the cells of the immune system.
20. Enlist any 3 ethical issues in agriculture and health care.
21. Draw and label the structure of an ovule and give a note on female gamete of a flower.
22. Briefly explain the process of IVF.
23. Briefly explain the Watson and Crick model of DNA.
24. List the properties of enzymes.
25. How was it concluded that DNA is the genetic material?

**Section – D (5 Marks)**

26. Explain different types of animal tissues.
27. With the help of a neat labeled diagram explain the check points in cell cycle and its regulation.

**OR**

What is nitrogen fixation? Show and explain the cycle depicting transformation of nitrogen in nature.

28. Explain the process of initiation, elongation and termination in protein synthesis.

**OR**

Give an account of the phases involved in first meiotic phase with relevant diagrams.