

B.TECH DEGREE EXAMINATIONS: JUNE 2010

Second Semester

BIOTECHNOLOGY

BTY101: Basic Biology and Genetics

Time: Three Hours

Maximum Marks: 100

Answer ALL Questions:-

PART A (10 x 1 = 10 Marks)

1. Protobionts are
a) Protozoans b) Bacteria c) Viruses d) First living forms
2. *Archaeopteryx* is the connecting link between
a) Birds and reptiles b) mammals and reptiles
c) Fishes and reptiles d) Amphibians and reptiles
3. Gram positive bacterial genus is
a) *Escherichia* b) *Erwinia* c) *Pseudomonas* d) *Bacillus*
4. An example of acoelomate animal is
a) *Hydra* b) *Hirudinaria* c) *Periplanata* D) *Unio*
5. Photosystem II is present in
a) Mitochondria b) Chloroplast c) Golgi complex d) Ribosomes
6. Tight junctions/ Zonulae occludentes of plasma membrane are
a) Finger like projections in between two cell membrane
b) Thickened areas of plasma membrane
c) Tonofibrillar region
d) Two adjacent cells fuse together so that there is no intercellular space
7. Homozygous dominant trait is
a) TT b) Tt c) tT d) tt
8. In AB blood group persons the RBC will have the following antigen
a) A b) B c) Both A and B d) O
9. Balbiani rings are found in the chromosomes present in the salivary glands of
a) Dipteran insects b) Vertebrates c) Mammals d) Birds
10. Haemophilia in man is a recessive disorder linked to
a) X- chromosome b) Y - chromosome c) Chromosome 6 d) Chromosome 10

PART B (10 x 2 = 20 Marks)

11. Briefly comment on 'microspheres'.
12. Write brief notes on the differences between cells and tissues
13. Briefly comment on the organization of *Amoeba proteus*
14. Write short notes on food digestion in a vertebrate animal.
15. Comment on the types of endoplasmic reticulum.
16. Write notes on the site of ATP generation in a cell.
17. Briefly comment on incomplete dominance. Give one example.
18. What is the difference between back cross and test cross?
19. Give a few examples of sex linked disorders.

20. What is aneuploidy?

PART C (5 x 14 = 70 Marks)

21. (a) Write an essay on chemical building blocks of life.

(OR)

(b) Explain various evidences of evolution.

22. (a) Give a comparative account on the structure and organization of bacteria, fungi and higher plants

(OR)

(b) Give a comparative account on the structure and organization of coelomate and acoelomate invertebrates

23. (a) Write an essay on the ultra-structure of a cell and its organelles.

(OR)

(b) Describe various types of cell division with figures.

24. (a) Describe Mendelian laws of inheritance with examples.

(OR)

(b) Explain the following with examples:

(i) Linkages and crossing over

(ii) Multiple alleles

25. (a) Describe the following with suitable examples:

(i) Polytene chromosome

(ii) Lamp brush chromosome

(OR)

(b) Describe the following with examples:

(i) Sex linked disorders in man

(ii) Polyploidy.
