SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)
COIMBATORE – 35

DEPARTMENT OF COMPUTER SIENCE AND ENGINEERING (UG & PG)

Final Year Computer Science and Engineering, 7th Semester

Question Bank

Subject Code & Name: 19GET277/Biology for Engineers

UNIT –I

1. (a) State biology?
   (b) What is autotrophs & heterotrophs?
   (c) State taxonomy?
   (d) What are the three domines (kingdoms) of life?
   (e) What is cell?

2.(a) Draw ultra structure of Prokaryotic cell.
(f) Compare the characteristics of Prokaryotic and Eukaryotic cell. (6M)

2. What are Model organisms? Give brief notes n any three model organisms. (10M)

3. (a) Classify Kingdom Protista and Kingdom Animalia. (6M)
   (b) Write short notes on unicellular and Multicellular with examples. (4M)

4. (a) Explain mode of excretion in Urioteliic organisms. (6M)
   (b) Write carbon and Energy Utilization in lithotrophs (4M)

5. (a) Define Habitat. Explain Terrestrial Habitat. (5M)
   (b) How autotrophs utilize carbon and energy? (5M)

6. Write the differences between Plant cell and Animal cell. (5M)

7. (a) Define classification. (2M)
   (b) What are the Divisions in Kingdom Plantae? (3M)

8. Describe Amminotelsim and Uricotelism. (5M)

9. Draw labeled diagram of Animal cell as seen in Electron microscope. Comment on characteristics of Animal cell. (5M)

10. Explain the classification of organisms based on carbon utilization of organisms. (10M)

UNIT-II

1. (a) What is cell cycle? [2M]
   (b) What is meiosis? [2M]
   (c) Define mendel 1st& 2nd law. [2M]
   (d) Give an account on dominant & recessive uses. [2M]
   (e) what is gene mapping? [2M]

2. What are the three Laws of Inheritance proposed by Mendel? Explain Monohybrid cross. [10M]
3. Define gene Interaction. Give brief account on Dominant Epistasis With suitable example. [10M]
4. (a) Describe Complementary Gene Interaction. [5M]

   (b) Give an account on Duplicate Gene Interaction. [5M]
5. (a) Explain Phenylketonuria. [5M]

   (b) Explain about Albinisim. [5M]
6. Explain Meiosis with diagrammatic representation. [10M]
7. Discuss on Gene Mapping. [5M]
8. Give an account on Law of Independent Assortment [Diybrid cross] [5M]
9. What is Mitotic Cell division? Explain Mitosis with neat diagram. [5M]
10. Give an account on Down's syndrome. [5M]
11. How genetic material passes from Parents to offspring's? [10M]

UNIT-III

1. (a)What are polysaccharides? (2M)
   (b) Write any four functions of proteins? (2M)
   (c) List the two types of lipids and their functions? (2M)
   (d) How many types of nucleic acids are there? And write any two functions. (2M)
   (e) List some important organic compounds present in living organisms? (2M)

2. Define enzymes and its role in plants? (10M)
3. Describe the enzyme nature, properties and nomenclature? (10M)
4. Describe the enzyme action and kinetics? (10M)
5. What are lipids? Classify and explain different types of lipids. (10M)
6. What are the macro molecules and its types? Write the functions of macro molecules.(10M)
7. What are carbohydrates? Classify and explain monosaccharides. (10M)
8. Biological classification of amino acids and their importance. (10M)
9. Describe the
   a) RNA catalysis. (5M)
   b) Kinetic parameters related too biology. (5M)
10. Define polysaccharides with suitable examples. (10M)
11. What are Nucleotides? (10M)

UNIT IV

1. (a) Distinguish between DNA and RNA ? (2M)
   (b) Draw a neat diagram of DNA double helix structure? (2M)
   (c) What is complementation? (2M)
   (d) Write full form of M-RNA& TRNA & their functions? (2M)
   (e) What are the two purines & Pyrimidines of DNA? (2M)

2. Explain genetic code & Degeneracy of genetic code? (10M)

3. Explain & Describe the R-DNA technology methods? (10M)

4. Define transgenic plants & its applications? (10M)

5. Give brief account on hierarchy of DNA structure from single stand to double helix? (10M)

6. Explain about on Genetic material of DNA? (10M)

7. Explain

   a. coding and decoding genetic information transfer . (5M)

   b. R-DNA duplication. (5M)

8. Give an account on

   a. Proteins as enzymes. (5M)

   b. Protein as Structural elements. (5M)

9. What are the functions & Structure of Proteins? (10M)

10. Explain gene- complementation and recombination (10M)

11. Explain the Laws of Thermodynamics in biological systems. (10M)

UNIT-V

1. (a) What are photo systems ? (2M)
   (b) Difference between aerobic &anaerobic respiration? (2M)
   (c) What are the general features of TCA cycle? (2M)
   (d) What is sterilization? (2M)
   (e) Define stem cells & their functions? (2M)

2. Define glycolysis in detail. (10M)
3. Define kerbs cycle in detail. (10M)
4. Explain identification and classification of microorganisms. (10M)
5. What are the principles of energy transaction in physical and biological world? (10M)
6. Give an account on energy yielding and energy consuming reactions? (10M)
7. Write a note on sterilization and various techniques used. (10M)
8. Explain
   a) ATP as energy currency (5M)
   b) Photosynthesis (5M)
9. Give an account on Growth kinetics. (10M)
10. Explain exothermic and endothermic reactions. (10M)
11. How to prepare culture medium? Explain it in detail. (10M)