I. Answer any FIVE of the following:  
   Draw labelled diagrams wherever necessary
   1. Bacterial Growth curve.
   2. Lytic life-cycle of λ-Phage.
   4. Okazaki fragments.
   5. Genetic code.
   6. Lac operon.
   7. Restriction
   8. Transgenic plants.

II. Answer any FIVE of the following:
   Draw labelled diagrams wherever necessary
   OR
   10. What are Retro-Viruses? Give one example briefly.
   11. Define Replication? Explain the types of Replication.
   OR
   12. Describe the transcription with diagrams.
   13. Explain the protein synthesis in prokaryotes.
   OR
   14. Explain the tools of rDNA Technology.
   15. Discuss about Regulation of Prokaryotic Gene expression
   OR
   16. Define PCR, explain principle and applications.
   17. Explain the industrial production of Alcohol; penicillin.
   OR
   18. Discuss about proteomics; Genomics and Gene Bank.
I. Answer any FIVE of the following: 5x5=25

Draw labeled diagrams wherever necessary

1. Louis Pasteur.
2. Edward Jenner.
3. Prions.
5. TMV.
6. Polio virus.
7. Pigments in algae.
8. Mycotoxins.

II. Answer any FIVE of the following: 5x10=50

Draw labeled diagrams wherever necessary

9. Describe the role of micro-organism in fermentation.

OR

10. Write about the principle and procedure of Gram staining.

11. Describe the whittaker's five kingdom classification and their utility.

OR

12. What are the differences between prokaryotes & eukaryotes.

13. What are protozoans? Discuss about Amebiasis.

OR

14. Write about Detailed study of Typhoid.

15. Describe the general structure of Algae. Add a note on their economic importance.

OR

16. Describe the applications of Algae in agriculture & industry?

17. Write about the asexual and sexual reproduction mechanisms in fungi.

OR

18. Describe the economic importance of fungi in food & medicine.
I. Answer any FIVE of the following:

Draw labeled diagrams wherever necessary

1. Collection of blood
2. RBC count
3. Anaemia
4. Blood coagulation
5. Erythropoiesis
6. Blood cell counters
7. Blood transfusion
8. Blood Bank

II. Answer any FIVE of the following:

Draw labeled diagrams wherever necessary

9. *Explain the effects of storage of blood.*
10. What are anti-coagulants and effects of anti-coagulants on blood
11. *Explain the composition of blood (OR)*
12. Discuss about ESR (OR)
13. *Write about blood coagulation and its mechanism. (OR)*
14. Write about detailed study of Plasmodium vivax (OR)
15. *Explain the automated coagulated systems. (OR)*
16. Write about differential count, and cytochemical differential counter (OR)
17. Explain the human A,B,O blood group systems (OR)
18. Explain the pancreatic infections of blood
I. Answer any FIVE of the following:  
Draw labeled diagrams wherever necessary

1. Five Kingdom concept
2. Tuberculosis
3. Safe disposable strategies
4. Compound microscope
5. Autoclave
6. Bacteria growth curve
7. Measles
8. Agglutination

II. Answer any FIVE of the following:

Draw labeled diagrams wherever necessary

9. Give a brief account about the distribution of normal microflora of Man (OR)
10. Write about the factors influencing the growth of bacteria (OR)
11. Discuss the different sterilization techniques used in microbiology laboratory (OR) (OR)
12. What is Gram staining? What are the basic steps in Gram staining (OR)
13. Describe the different types of culture media in microbiology laboratory (OR)
14. Write about the Morphology, pathogenicity, clinical features and treatment of the Mycobacteria (OR)
15. Write about the Morphology, pathogenesis, clinical features and treatment of cutaneous Mycoses (OR)
16. Describe the general transmission routes for viruses (OR)

47. Write an essay on Autoimmune disease (OR)
48. Describe the clinical diagnosis of ELISA
I. Answer any FIVE of the following:  
5x5=25

1. Phenylketonuria.
2. Kashiorkar.
3. Rickets.
4. Hyper and Hypo Thyroidism.
5. Rheumatoid Arthritis.
6. Antigenic shift and Antigenic drift.
8. Bacterial infections of cholera.

II. Answer any FIVE of the following:  
5x10=50

9. (9) Explain the inborn errors of amino-acid metabolism.  
   (OR)
10. (9) Inborn errors of lipid metabolism.  
11. (10) Write about Osteomalacia and Obesity.  
   (OR)
12. (10) Discuss about Diabetes Mellitus.  
13. (10) Explain the hormone action and types of pituitaryism.  
   (OR)
15. (10) Explain the bacterial pathogenisis.  
   (OR)
16. (10) Write the source reservoir and transmission of pathogens.  
17. (10) Explain the viral infection with two examples.  
   (OR)
18. (10) What are vaccines? and explain about types of vaccines.
I. Answer any FIVE of the following:
1. Define Nutrition and food.
2. Functions of carbohydrates.
3. Vitamin-C.
5. Cereals.
6. Uses of cooking.
7. Minimising Nutrient losses.
8. Concept of Balanced diet.

II. Answer any FIVE of the following:
10. Explain the Basic food groups.
11. Write the functions, dietary sources and deficiency of proteins.
12. Explain the sources, functions and deficiency of Vitamin-A.
13. Write the nutritional contribution and changes of fruits and vegetables.
14. Write about meat, poultry and fish.
15. Explain the methods of cooking.
16. Discuss about advantages and disadvantages of cooking.
17. Write about food exchange list.
18. Explain the factors effecting meal planning and food behaviour.
I. Answer any FIVE of the following: 5x5=25

Draw labeled diagrams wherever necessary
1. Nutrition during pre-school children
2. RDA and its for adults
3. Iodine deficiency disorders
4. Fluorosis
5. Nutrition for pregnant women
6. Food adulteration
7. Agmark and FPO
8. Drug addiction

II. Answer any FIVE of the following: 5x10=50

Draw labeled diagrams wherever necessary

(1) Write the growth and development of school children. OR
(10) Explain the nutritional guidelines and healthy food choice of adolescence. OR
(11) Explain the physical changes of and nutritional guidelines of adolescence. OR
(12) Write the nutritional concerns and food choices of lacting mothers. OR
(13) Write about under nutrition of protein. OR
(14) Explain the over nutrition and its diseases. OR
(15) Discuss about adulterates in consumed food items. OR
(16) Explain the food laws and standards. OR
(17) Explain the social health problem of alcoholism. OR
(18) Define AIDS and explain AIDS control programme.
I. Answer any FIVE of the following:  

5x5 = 25

1. Write about Nutrition care?
2. Define Balanced diet?
3. Tuberculosis.
4. Diarrhea.
5. Lactose Intolerance.
6. Underweight.
7. Bulimia.
8. Hyper tension.

II. Answer any FIVE of the following:  

5x10 = 50

Draw labeled diagrams wherever necessary.

9. Explain the Therapeutic adaptations of Normal diet? (OR)
10. Explain the progressive diets? (OR)
11. Explain the etiology, clinical and Nutritional Management of Typhoid. (OR)
12. Write about etiology, clinical and Nutritional Management of Tuberculosis. (OR)

13. Write about etiology, clinical features and Nutritional managment of GI tract disorders. (OR)

14. Discuss about Hepatitis. (OR)
15. Write about weight imbalances disorders. (OR)
16. Explain the etiology, clinical features and Nutritional management of eating disorders. (OR)

17. Discuss about Type-1 and Type-2 diabetes Mellitus. (OR)

18. Explain the coronary Heart Disease.