RGUHS SEMSTER-VI

PHARMACEUTICAL BIOTECHNOLOGY (BP05 T)

Long Essay:

1.Explain the different methods of immobilization of enzyme. And give its applications

2.Describe the production of hepatitis B vaccine.

 3.Explain the production of Griseofulvin and Penicillin by fermentation technology with a neat labelled flow chart.

4.What are biosensors? Explain the types with pharmaceutical applications.

5.Write a detailed note on cloning vectors.

6.Describe the production of citric acid by fermentation technology with a neat labelled flow chart.

7.Explain different methods of enzyme immobilisation with their advantages and disadvantages.

8.Describe the production of Hepatitis B vaccine. Write a note on plasmid vectors.

9.Describe the production of Penicillin by fermentation technology with a neat labelled flow chart.

10.What are biosensors? Write its principle and its functions.

11.Write in detail the production of Insulin by genetic engineering method.

12.Write in detail the different types of fermenters and its applications.

13.Write in detail the different methods of enzyme immobilization. Write its applications.

14.Write in detail three different vectors used in genetic engineering.

15.Write the design of an industrial fermenter with a neat labelled diagram.

16.What is enzyme immobilization? Explain covalent bonding and gel entrapment methods with

 advantages and disadvantages.

17.Describe the general method of recombinant DNA technology.

18.Describe the construction and working of a fermenter with a neat labelled diagram.

19.Describe any three methods of enzyme immobilization. Illustrate the applications of immobilised

 enzymes in medicine and production of pharmaceuticals.

20.Describe the production of insulin by recombinant DNA technology.

21.Describe the different methods of fermentation. Explain the production of griseofulvin by

 fermentation technology with a neat labelled flow chart.

22.What are biosensors? Explain the types with pharmaceutical applications.

23.Write a detailed note on cloning vectors.

24.Describe the production of citric acid by fermentation technology with a neat labelled flow chart.

25.Explain different methods of enzyme immobilisation with their advantages and disadvantages.

26.Describe the production of Hepatitis B vaccine. Write a note on plasmid vectors.

27.Describe the production of Penicillin by fermentation technology with a neat labelled flow chart.

28.Explain different types of biosensors and their applications in pharmacy and medicine.

29.Describe the production of insulin by r DNA technology.

30.Describe the production of Penicillin by fermentation technology with a neat labelled flow chart.

Short Essays:

1.Describe the production and uses of Penicillinase.

2.Explain the production of interferons by rDNA technology.

3.Describe the production of hormone insulin.

4.Describe the structure and functions of MHC.

5.Describe the production of monoclonal antibodies by hybridoma technology.

6.Explain the general method of the preparation of viral vaccine.

7.Write a note on serum –immune blood derivatives.

8.Describe ELISA test with its applications.

9.What is Mutation and explain the different types of mutation.

10.Describe the production and uses of amylase.

11.Explain the production of interferons by rDNA technology.

12.List out the applications of genetic engineering in medicine.

13.Write a note on microbial biotransformation in production of steroidal medicinal agents.

14.List out different blood products and their applications.

15.Outline the general method for the production of live viral vaccines.

16.Write the role of lymphocytes in immunity.

17.Describe the Southern blot test. How does it differ from Western blot test?

18.Explain conjugation. Write its significance.

19.Describe the production and uses of lipase.

20.Explain polymerase chain reaction with applications.

21.Outline the production of interferons by rDNA technology

22.What is biotransformation? List out the applications of microbial biotransformation.

23.Describe the applications and method for production of monoclonal antibodies.

24.Outline the general method for the preparation of live attenuated bacterial vaccines.

25.What are vaccines? Classify the types with examples.

26.Describe the Southern blot test with its applications.

27.Explain transduction and conjugation.

28.How to make sodium alginate beads in calcium chloride solution?

29.What is PCR? Write the working principle of PCR.

30.Explain the structure of immunoglobulins.

31.Write the production ofkilled bacterial vaccines.

32.Write the production of monoclonal antibodies.

33.Write in brief the western blotting technique and mention its application.

34.Write in brief about transformation with suitable examples.

35.Write briefly about different types of mutation and give its significance.

36.Write in brief the Collection, Processing and Storage of whole human blood.

37.Explain the method for determination of immobilized amylaseactivity.

38.Write a note on applications of genetic engineering in medicine production.

39.Write a note on Immune stimulation and Immune suppression.

40.Write in brief structure and function of MHC.

41.Write a note on storage and stability of vaccines.

42.Write in brief the southern blot technique and mention its applications.

43.Write in brief about transduction. Explain the types.

44.Describe ELISA with its applications.

45.Define fermentation and write the production of Vitamin B12.

46.Describe the production and uses of amylase.

47.Explain the production of insulin by rDNA technology.

48.Describe the technique of polymerase chain reaction (PCR).

49.Explain the production of penicillin G by fermentation technology.

50.Classify immunity. Write the difference between active and passive immunity

51.Outline the general method for the preparation of live attenuated bacterial vaccines.

52.Describe the structure of an immunoglobulin with a neat labelled diagram.

53.Describe ELISA with its applications.

54.Explain microbial biotransformation with examples.

55.Describe the production and uses of penicillinase. List out advantages of 56.production of enzymes from microbial sources.

57.Explain the production of hepatitis B vaccine by rDNA technology.

58.What are restriction enzymes? Explain the types and their role in genetic engineering.

59.Explain different types of mutations.

60.Describe the production of monoclonal antibodies by hybridoma technology.

61.Outline the general method for the preparation of bacterialtoxoids.

62.What are vaccines? Classify the types with examples.

63.Describe the Southern blot test with its applications.

64.What is transduction. Explain the methods.

65.Describe the production and uses of amylase.

66.Explain the production of interferons by rDNA technology.

67.List out the applications of genetic engineering in medicine.

68.Write a note on microbial biotransformation in production of steroidal medicinal agents.

69.List out different blood products and their applications.

70.Outline the general method for the production of live viral vaccines.

71.Write the role of lymphocytes in immunity.

72.Describe the Southern blot test. How does it differ from Western blot test?

73.Explain conjugation. Write its significance.

74.Describe the production and uses of lipase.

75.Explain Polymerase chain reaction with applications.

76.Outline the production of interferons by rDNA technology.

77.What is biotransformation? List out the applications of microbial biotransformation.

78.Describe the applications and method for production of monoclonal antibodies.

79.Outline the general method for the preparation of antitoxin.

80.Describe the structure of Immunoglobulin.

81.Describe ELISA with its applications.

82.Explain different types of mutations.

83.Describe the production and uses of catalase.

84.What are cloning vectors? Explain the features of pBR322.

85.What are molecular scissors. Explain their role in recombinant DNA technology.

86.Explain the production of antibodies from B lymphocytes.

87.Classify vaccines giving examples.Write the difference between toxins and toxoids.

88.What are monoclonal antibodies? Describe different methods of purification of MAb.

89.Describe ELISA with its applications.

90.Explain briefly, transformation, transduction and conjugation.

91.Explain different types of mutagenic agents.

Short Answers:

1. How is fermentation equipments sterilized.

2.Write any two application of Microbial Biotransformation.

3.Define conjugation.

4.Define plasmids with examples.

5.Define immunoglobulins.

6.Write the storage conditions of vaccines.

7.Difference between vaccine and serum.

8.What is PCR. Give two applications.

9.Write any four applications of Amylase.

10.List out any four advantages of Enzyme Immobilization.

11.List out any two applications of enzymes in medicine.

12.Write any four methods of immobilisation techniques.

13.Define immunity. List the types of immunity.

14.What are different types of aerators.

15.List out different types of hypersensitivity reactions.

16.Write any four properties of Immunoglobulin M.

17.Write the difference between vaccines and sera

18.What are cosmid vectors?

19.Write any four applications of PCR.

20.Write any four differences between prokaryotic and eukaryotic DNA.

21.List out any four applications of enzymes in medicine.

22.Write any four applications of immobilised enzymes.

23.What is cellular immunity?

24.What is protected fermentation?

25.What is immune suppression? Give two example for immunosuppressive agent.

26.Write any four properties of Immunoglobulin G.

27.What are the conditions for storage of official vaccines?

28.What are transposons?

29.Write any two applications of ELISA.

30.What do you mean by plasmid.

31.Name any four natural polymers used for immobilization.

32.Name any four disadvantages of immobilization.

33.Write any four applications of interferons.

34.Define toxoids.Give two examples.

35.Name any twoblood products with applications.

36.What is hypersensitivity? Write the types.

37.What is microbial biotransformation? Give two examples.

38.What is downstream processing? Give two examples.

39.Expand ELISA and write two applications.

40.Applications of plasma substitutes.

41.Name any four advantages of enzyme immobilization.

42.Name any four chemical polymers used for immobilization.

43.What are restriction endonuclease enzymes? Give two examples.

44.Name two methods of preparation of viral vaccine.

45.Define hybridoma technology. Write two applications.

46.Write the therapeutic uses of plasma substitutes.

47.Name four mutagenic agent.

48.What is upstream processing? Give two examples.

49.What are transposons and episomes?

50.Write any four pharmaceutical applications of biosensors.

51.Write any four pharmaceutical applications of biotechnology.

52.Enlist the different types of vectors used in genetic engineering.

53.Write the source organism and uses of griseofulvin.

54.What are anti-toxins? Give an example.

55.Write any two functions of MHC.

56.What are plasma substitutes?

57.Write any four applications of western blotting?

58.What are point mutation?

59.List out any four applications of enzymes in medicine.

60.Write any four advantages of immobilised enzymes.

61.What is cellular immunity?

62.What is protected fermentation?

63.What is immune suppression? Give two examples for immunosuppressive agent.

64.Write any four properties of Immunoglobulin G.

65.What are the conditions for storage of official vaccines?

66.What are transposons?

67.Write any two applications of ELISA.

68.List out any two applications of enzymes in medicine.

69.Mention anytwo methods of immobilisation techniques.

70.Define immunity. List the types of immunity

71.What are different types of aerators.

72.List out different types of hypersensitivity reactions.

73.Write any four properties of Immunoglobulin M.

74.What is HAT medium. Write its role in selection of hybridoma cells.

75.What are cosmid vectors?

76.Write any two applications of PCR.

77.List out any four applications of biotechnology in medicine.

78.Write any four synthetic polymers used forimmobilisation of enzymes

79.What is humoral immunity?

80.List any four factors that affect fermentation process.

81.Write the functions of MHC.

82.Write any four properties of Immunoglobulin A.

83.Write the difference between vaccines and sera.

84.Write the difference between transposons and episomes.

85.Write any four applications of Southern blot test.

86.What is protein engineering?

87.Write any four applications of proteases

88.What is chimeric DNA?

89.What are batch culture and continuous cultures?

90.Write any four uses of blood products.

91.Write the role of CD4 cell in immune reaction.

92.Write the different types of heavy chains and light chains in immunoglobulin molecules

93.Write the importance of transposons.

94.Write any two enzymes and their substrates employed in ELISA.

95.What are plasmids. Give one example.