Total No. of printed pages = 4

BP 605 T

2015/24

Roll No. of candidate

2024

B.Pharm. 6th Semester End-Term Examination

PHARMACEUTICAL BIOTECHNOLOGY THEORY

(New Regulation w.e.f 2017-18)

Full Marks – 75 Time – Three hours

The figures in the margin indicate full marks for the questions.

1. Multiple Choice Questions (MCQ) (Answer *all* questions) : (20 × 1 = 20)

(i) Which is most suitable media for PTC?

(a) M S media (b) Nutrient Broth

(c) PDB broth (d) SDA Media

(ii) PCR is a

(a) DNA amplification method

(b) Western blotting method

(c) DNA digestion method

(d) DNA fragmentation method

(iii) Transcription is __

(a) DNA to RNA

(b) RNA to protein

(c) cDNA to DNA

(d) RNA to DNA

(iv) Which is not a step in vaccine preparation?

(a) Killing

(b) Fractionation

(c) Adsorption and conjugation

(d) Desorption

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(v) The class of antibodies, which can cross placenta is

(a) IgD (b) IgA

(c) IgG (d) IGM

(vi) In which of the technique, the enzyme and polymer are bridged by the use of bi-functional reagent?

(a) Covalent cross-linking (b) Adsorption

(c) Physical entrapment (d) Microencapsulation

(vii) The PCR technique was developed by

(a) Kany Mullis (b) Kohler

(c) Milstein (d) Boyer

(viii) In the production of the Hormone-Insulin using rDNA technology, the formed recombinant DNA is introduced into

(a) Bacteria (b) Fungi

(c) Yeast (d) Virus

(ix) Name the type of culture which is prepared by inoculating directly from the tissue of an organism to culture media?

(a) Primary cell culture (b) Secondary cell culture

(c) Cell lines (d) Transformed cell culture

(x) Tuberculin type comes under which type of hypersensitivity?

(a) Type I Hypersensitivity

(b) Type III Hypersensitivity

(c) Type II Hypersensitivity

(d) Type IV Hypersensitivity

(xi) Which end of DNA is phosphorylated by Alkaline Phosphatase enzyme?

(a) 3' End

(b) 5' End

(c) 2' End

(d) Both 3' and 5' End

(xii) Antibody chains are linked together by

(a) Covalent Bonds

(b) Hydrogen Bonds

(c) Disulphide Bonds

(d) Hydrophilic Bonds

(xiii) Difference between plasmid and cosmid vector is

(a) Antibiotic Resistance Gene

(b) COS sites

(c) Origin of Replication

(d) Marker regions

(xiv) Which organism used for the production of penicillin antibiotic?

(a) Penicillium notatum

(b) Aspergillus niger

(c) Bacillus subtilis

(d) Bacillus cereus

(xv) What is a cell line?

(a) Multilayer culture

(b) Transformed cells

(c) Multiple growth of cells

(d) Sub culturing of primary culture

(xvi) B cells that produce and release large amounts of antibody are called

(a) Memory cells (b) Basophils

(c) Plasma cells (d) Killer cells

(xvii) Which hypersensitivity reactions are mediated by T cell?

(a) Type IV (b) Type III

(c) Type I (d) Type II

(xviii) Which enzyme is used to join together two different types of DNA molecules?

(a) Ligase (b) Endonuclease

(c) Exonuclease (d) Protease

(xix) Which of the following enzymes in bacteria are responsible for restricting the growth of viruses?

(a) Restriction endonuclease (b) Topoisomerase

(c) Gyrase (d) Protease

(xx) RFLP stand for

(a) Restriction fragment length polymorphism

(b) Restriction length polymerase

(c) Restricted fragment live polymorphism

(d) Rapid fragment length polymorphism

2. Short answers (Answer any *seven*) $(7 \times 5 = 35)$

(a) Write a note on production of penicillium.

(b) Describe characteristics of restriction endonuclease enzyme.

(c) Explain in brief about the structure of immunoglobulins.

(d) Write in brief about production of vaccines and toxoids.

(e) Describe in brief about cloning vectors, restriction endonuclease and DNA–ligase.

(f) Give a vivid description of Western blot and its use.

(g) Describe in brief about hypersensitivity reactions.

(h) Discuss briefly the mechanism of transformation.

(i) Describe in brief about storage condition and stability of official vaccines.

3. Long answers (Answer any *two*) $(2 \times 10 = 20)$

(a) Write in brief about hybridoma technology. Describe the role of transducer in Biosensors. (5+5)

(b) Discuss in brief about cellular and humoral immunity. Explain briefly about the structure and function of mhc. (5+5)

(c) Describe with diagram about Recombinant DNA technology. Discuss in brief about enzyme immobilization and protein engineering. (5+5)