

B.Pharm. (CBCS Pattern) Semester - VI  
**BP605T - Pharmaceutical Biotechnology**

P. Pages : 3

Time : Three Hours



**GUG/S/23/14141**

Max. Marks : 75

- Notes :
1. Illustrate your answers wherever necessary with the help of neat sketches.
  2. All questions are compulsory.

- 1.**
- i) Who is the father of Biotechnology? **20x1  
=20**
    - a) Louis Pasteur
    - b) Robert Koch
    - c) Karl Erkey
    - d) Robert Brown
  - ii) The first polio vaccine was developed by
    - a) Inaba
    - b) Ogawa
    - c) Salk
    - d) Sabin
  - iii) The first human protein produced through recombinant DNA technology is
    - a) Insulin
    - b) Erythropoietin
    - c) Interferon
    - d) Somatostatin
  - iv) Humulin, a genetically engineered insulin was produced for the first time by
    - a) Biocon India Ltd
    - b) Glaxoc
    - c) Elililly & company
    - d) Cipla
  - v) The scientists who won the Nobel prize for physiology for their discovery of restriction Endonucleases are
    - a) Jacob & Monad
    - b) Smith, Nathans & Arber
    - c) Watson & Crick
    - d) Alec Jaffreys & Milstein
  - vi) Use of genetic technique in forensic science is also called as
    - a) Genetic finger printing
    - b) In vitro culture
    - c) Hybridoma technology
    - d) Gene therapy
  - vii) What was the first synthetic polymer used for enzyme immobilization.
    - a) Nylon
    - b) Polystyrene
    - c) Silk
    - d) Polyamide
  - viii) The predominant hypersensitivity reaction involving IgE is.
    - a) Type I
    - b) Type II
    - c) Type III
    - d) Type IV
  - ix) Yellow fever virus can be attenuated by serial passage on culture of
    - a) Embryonated eggs
    - b) Tissues
    - c) Chick embryo tissue
    - d) Pig embryo tissue
  - x) The chemical used for conversion of toxin into toxoid is
    - a) Ethanol
    - b) Chloroform
    - c) Formaldehyde
    - d) Hydrochloric acid

- xi) In hybridoma technology, hybrid cells are selected in -----
  - a) MS medium
  - b) HAT medium
  - c) X - gal medium
  - d) Whites medium
- xii) Recombivax is a -----
  - a) Recombinant Hepatitis A Vaccine
  - b) Recombinant Hepatitis B Vaccine
  - c) Recombinant Hepatitis C Vaccine
  - d) Recombinant Hepatitis D Vaccine
- xiii) The first engineered plasmid vector is -
  - a) pBR 322
  - b) pUC vector
  - c) pSC 101
  - d) pUC 19
- xiv) Soy meal, peptone, & tryptone are used as the source of -
  - a) Carbon
  - b) Carbon & Nitrogen
  - c) Nitrogen
  - d) Mineral
- xv) A device which is used for introducing air into the liquid in a fermenter is -
  - a) Sparger
  - b) Baffle
  - c) Agitator
  - d) Impeller
- xvi) In which fermentation Vit B 12 is obtained as by product?
  - a) Penicillin
  - b) Streptomycin
  - c) Griseofulvin
  - d) Tetracyclin
- xvii) The organic solvent used in extraction of penicillin after fermentation is-
  - a) Amyl acetate
  - b) Aceyl methyl carbinol
  - c) Ethyl alcohol
  - d) Acetaldehyde
- xviii) Highest percentage of starch present in -
  - a) Amylase
  - b) Amylopectin
  - c) Both A & B
  - d) None of the above
- xix) The first  $\beta$  -lactamase enzyme produced from -
  - a) B. subtilis
  - b) S. aureus
  - c) S. pyrogenesd
  - d) E. coli
- xx) Temperature required to causes denaturation of double stranded DNA in PCR
  - a) 95°C
  - b) 50-65°C
  - c) 72°C
  - d) 70-74°C

**2. Solve any two.**

$$10 \times 2 = 20$$

- Define fermentation. Give construction & working of typical Bioreactor.
- Explain the production of Monoclonal antibodies by hybridoma technology.
- Explain sterilization methods.

3. Solve any seven.

5x7=  
35

- a) Describe the method of preparation of bacterial vaccine.
- b) Give account on anticoagulant used in preparation of blood components.
- c) Explain Basic principles of genetic engineering.
- d) Give note on biotechnology used in environmental monitoring?
- e) Briefly explain components used in Biosensor.
- f) Give the Structure and Function of MHC
- g) Note on Storage conditions and stability of official vaccines.
- h) Discuss study of the production of - penicillins.
- i) Differentiate Between Eukaryotes and Prokaryotes.

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