M.Sc. BIOTECHNOLOGY
THIRD SEMESTER (SPECIAL REPEAT)
PHARMACOLOGY
MBT-306 (MDC)
[USE OMR SHEET FOR OBJECTIVE PART]

SET A

Duration: 3 hrs.

Full Marks: 70

(**Objective**)

Time: 30 mins.

Marks: 20

Choose the correct answer from the following:

1 × 20 = 20

1. The PCR technique was developed by.........................
   a. Kohler
   b. Altman
   c. Milstein
   d. Kary Mullis

2. Thermus aquatics is the source of...............
   a. Vent polymerase
   b. Primase enzyme
   c. Taq polymerase
   d. Both a and c

3. Western blotting technique is used for:
   a. To detect specific DNA in a sample
   b. To detect specific RNA in a sample
   c. To detect specific Protein in a sample
   d. All of the above

4. Percolation is:
   a. Slow passage of a liquid through a filtering medium
   b. The process of extracting the soluble constituents of a powdered drug by passage of a liquid through it
   c. Used in isolation of compounds from herbal sources
   d. All of the above

5. In maceration:
   a. Plant species is immersed in water
   b. Plant needs to be cut into small pieces
   c. Only a
   d. Both a and b

6. NSAID stands for:
   a. Non-steroidal anti-inflammatory drugs
   b. Non-sterile anti-inflammatory drugs
   c. Non-sterile antigen induced drugs
   d. None of the above

7. ED 50 is:
   a. Median effective dose
   b. Dose effects 50% of the population
   c. Both a and b are true
   d. Lethal dose

8. According to Lipinski's rule which of the following is correct?
   a. No more than 5 hydrogen bond donors
   b. No more than 10 hydrogen bond acceptors
   c. A molecular mass less than 500 daltons
   d. All are true

9. Acute toxicity studies are conducted to determine:
   a. Long-term adverse effects of a drug
   b. Short-term adverse effects of a drug
   c. Both a and b are correct
   d. None of the above

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10. To determine the effects of a substance following prolonged and repeated exposure
    ....study is conducted.
    a. Acute toxicity
    b. Sub-acute toxicity
    c. Chronic toxicity
    d. All of the above

11. Mechanism of drug action is explored by:
    a. Pharmacokinetics
    b. Pharmacogenetics
    c. Pharmacoeconomics
    d. Pharmacodynamics

12. Dosage forms comprise of:
    a. Active ingredients
    b. Inactive ingredients
    c. Both a and b
    d. Only a

13. Types of dosage form based on method of administration:
    a. Solid dosage forms
    b. Liquid dosage forms
    c. Topical dosage forms
    d. Semi solid dosage forms

14. A liquid dosage forms may be:
    a. Suspensions
    b. Gels
    c. Aerosols
    d. Nebulizer

15. Branch of Pharmacology that deals with absorption, distribution, metabolism and
    excretion of drugs is:
    a. Pharmacodynamics
    b. Pharmacokinetics
    c. Pharmacy
    d. Pharmacogenetics

16. "*Pharmakos*" meaning:
    a. Pharmacy
    b. Pharmacokinetics
    c. Medicine or drug
    d. None of the above

17. According to Beer Lambert's law, light absorbed is:
    a. Directly proportional to Concentration   b. Inversely proportional to the
       of the solution   concentration of the solution
    c. Directly proportional to both the   d. Directly proportional to Path length
       Concentration and Path length

18. A colorimeter is used for the study of:
    a. Concentration of a solution
    b. Determining the rates of reaction
    c. Determining the growth of bacterial
       cultures
    d. All of the above

19. Who constructed the first mass spectrometer?
    a. Leeuwenhoek
    b. J.J. Thompson
    c. Alexander Fleming
    d. Robert Hook

20. Screening of newborns for metabolic disorders can be examined through:
    a. Mass spectroscopy
    b. UV Vis spectroscopy
    c. Chromatography
    d. Colorimeter

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(Descriptive)

Time : 2 hr. 30 mins.   Marks : 50

[Answer question no.1 & any four (4) from the rest]

1. Explain briefly the Northern, Southern and Western blotting   10
    techniques.

2. Define PCR. Explain the steps of PCR with suitable diagram.   2+8=10

3. Define dosage forms. Discuss briefly the types of dosage forms.   2+8=10

4. Explain briefly the drug screening methods involved in the   5+5=10
    evaluation of:
    a) Anti-ulcer drugs
    b) Anti-cancer drugs

5. a) Define Beer-Lambert's law. Write the principle of UV-Vis   2+5+3=10
       Spectroscopy.
    b) Write applications of UV vis spectroscopy.

6. Write short notes on the following: 5×2=10
    a) Pharmacokinetics
    b) Pharmacodynamics
    c) Pharmacogenomics
    d) Pharmacognosy
    e) Toxicology

7. Describe briefly the methods involved in the development of new   10
    drugs.

8. Describe the following methods used in isolation of compounds   5+5=10
    from herbal sources:
    a) Percolation
    b) Maceration

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