

Printing Pages : 2

Paper Code: BP-601T

A

(SVSU:2024-25/R)

Enrollment No.

B. PHARM**IIIrd YEAR, VI SEMESTER EXAMINATION****Subject Name: MEDICINAL CHEMISTRY – III****Code: (BP601T)****[Time: 3:00 Hours]****[Max. Marks: 75]****I. Long Questions: Answer Any Two****[10×2=20]**

1. Compare and contrast the SAR of β -lactam antibiotics with aminoglycosides.
2. Explain the mechanism and structure-activity relationship of chloroquine and primaquine.
3. Discuss the role of prodrug design in improving the efficacy of antiviral agents.

II. Short Questions: Answer Any Seven**[5×7=35]**

1. Explain the stereochemistry of penicillin.
2. Write the chemical degradation pathway of erythromycin.
3. Describe the SAR of tetracyclines.
4. Discuss the structure of pyrazinamide and its mode of action.
5. Identify the role of lamivudine in viral infections.
6. Differentiate between natamycin and nystatin.
7. Illustrate the chemical structure of metronidazole and explain its mechanism.
8. Describe the SAR of quinolones.
9. How does amphotericin-B exert antifungal activity?

III. Objective Questions: Answer All**[20×1=20]**

1. 4-aminoquinolines type of antimalarial drug is
a.) Mefloquine b.) Quinine c.) Chloroquine d.) Other
2. Which one is a β -lactamase inhibitor?
a.) Ampicillin b.) Clavulanic acid
c.) Oxacillin d.) Sulbactam
3. Which drug inhibits DNA gyrase in bacteria?
a.) Ciprofloxacin b.) Rifampicin
c.) Isoniazid d.) Ethambutol
4. Which of the following is a macrolide antibiotic?
a.) Erythromycin b.) Amikacin
c.) Neomycin d.) Cefixime
5. Nitrofurantoin is used for
a.) Fungal infections b.) Viral infections
c.) Urinary tract infections d.) Parasitic infections

6. What is the mechanism of action of acyclovir?
 - a.) Cell wall inhibitor
 - b.) Reverse transcriptase inhibitor
 - c.) DNA polymerase inhibitor
 - d.) RNA polymerase inhibitor
7. Streptomycin acts on
 - a.) 30S ribosome
 - b.) 50S ribosome
 - c.) Cell wall
 - d.) DNA
8. Which of the following is a polyene antifungal?
 - a.) Griseofulvin
 - b.) Amphotericin B
 - c.) Fluconazole
 - d.) Clotrimazole
9. Primaquine is active against
 - a.) Erythrocytic stage
 - b.) Gametocyte stage
 - c.) Liver stage
 - d.) All of these
10. Which drug is classified as a prodrug?
 - a.) Metronidazole
 - b.) Isoniazid
 - c.) Erythromycin
 - d.) Azithromycin
11. Which antiviral is a nucleoside analog?
 - a.) Acyclovir
 - b.) Amantadine
 - c.) Ritonavir
 - d.) Indinavir
12. Which of the following is not a tetracycline?
 - a.) Minocycline
 - b.) Doxycycline
 - c.) Azithromycin
 - d.) Chlortetracycline
13. Ethambutol is primarily used to treat
 - a.) TB
 - b.) Malaria
 - c.) HIV
 - d.) UTI
14. A drug acting on ergosterol in fungi
 - a.) Ketoconazole
 - b.) Amphotericin B
 - c.) Rifampicin
 - d.) Metronidazole
15. PAS stands for
 - a.) Para amino salicylic acid
 - b.) Paracetamol analog
 - c.) Penicillin substitute
 - d.) None
16. The active form of INH is
 - a.) Hydrazine
 - b.) Isonicotinic acid
 - c.) NADH adduct
 - d.) Isonicotinic aldehyde
17. Which drug is used to treat amoebiasis?
 - a.) Atovaquone
 - b.) Metronidazole
 - c.) Clotrimazole
 - d.) Tinidazole
18. Which of the following is a urinary antiseptic?
 - a.) Methanamine
 - b.) Ciprofloxacin
 - c.) Clindamycin
 - d.) Neomycin
19. Lamivudine is used to treat
 - a.) Fungal infections
 - b.) TB
 - c.) HIV
 - d.) Helminths
20. Drug used for treating cestode infestation
 - a.) Ivermectin
 - b.) Mebendazole
 - c.) Praziquantel
 - d.) Metronidazole

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Paper Code: BP-602T

B

(SVSU:2024-25/R)

Enrollment No.

B. PHARM**IIIrd YEAR, VIth SEMESTER EXAMINATION**

Subject Name: Pharmacology-III,

Subject Code: BP-602T

[Time: 3:00 Hours]

[Max. Marks: 75]

I. Multiple Choice Questions (MCQ)

[20×1=20]

1. Which of the following antimicrobial drugs is synthetic?
a. Sulfanilamide b. Penicillin c. Actinomycin d. neomycin
2. Structurally all penicillin have only beta-lactam ring present in them.
a. True b. False
- 3 Which of the following is not used in the HIV-1 treatment?
a. Delavirdine b. Zidovudine c. Rimantadine d. Stavudine
4. Which of the below are inhaled corticosteroids?
a. Mometasone b. Beclomethasone c. Ciclesonide d. All of the above
5. Codeine is used clinically as:
a. Analgesic b. Antitussive c. Antidiarrheal d. All of the above
6. Chloramphenicol is particularly effective in the treatment of
a. Diphtheria b. Tuberculosis c. Emphysema d. Rickettsia diseases
7. Which of the following conditions would be a contraindication for the use of nasal decongestants?
a. Allergic rhinitis b. High blood pressure
c. Common cold d. Sinus infection
8. Which of the following inhibits protein synthesis by combining with the 50S subunit ribosome?
a. Streptomycin b. Tetracycline c. Chloramphenicol d. Penicillin
9. The most important toxicity of amphotericin B is:
a. Nephrotoxicity b. Neurotoxicity
c. Hepatotoxicity d. Bone marrow depression
10. Which of the following is a short-acting respiratory stimulant used to treat acute respiratory insufficiency in COPD patients?
a. Theophylline b. Doxa pram c. Caffeine d. Aminophylline
11. Ciprofloxacin _____
a. Is a defluorinated analogue of nalidixic acid
b. Inhibits topo-isomerases 2 and 3
c. Has no gram-positive cover d. Has a bioavailability of 30%
12. Which of the following antiviral drug is used to treat influenza A?
a. Dextran sulfate b. Amantadine c. Ganciclovir d. Cidofovir
13. Which of the following receptor is blocked by drug during a peptic ulcer?
a. H1 b. H2 c. Proton pump d. H2 and proton pump

14. What is the mechanism of action of docusate?

- a. Stimulates peristalsis
- b. Increases water absorption
- c. Softens stool by lowering surface tension
- d. Increases intestinal motility

15. Which of the following are involved in both innate and acquired immune responses?

- a. B cells
- b. T cells
- c. Macrophages
- d. All above

16. Which of the following is a potential side effect of using appetite suppressants?

- a. Increased appetite
- b. Weight gain
- c. Insomnia
- d. None

17. Which of the following is a digestive enzyme that is secreted by the pancreas?

- a. Pepsin
- b. Lipase
- c. Amylase
- d. Trypsin

18. Mutation may reflect in

- a. Transcription
- b. Translation
- c. Replication
- d. All of the above

19. Which of the following is one of a major cause of UTI

- a. E. Coli
- b. Entamoeba Histolytica
- c. H. Influenza
- d. None of the above

20. The most common target organ of toxicity is the ----

- a. heart
- b. lung
- c. CNS (brain and spinal cord)
- d. skin

II. Long Answers (Answer 2 out of 3)

[2×10=20]

1. Discuss the pharmacology of β_2 agonists in the management of COPD, including their mechanism of action, benefits, and potential side effects.

2. Compare the pharmacological properties of first-line antitubercular agents, highlighting their mechanisms of action, and classify them as bactericidal or bacteriostatic agents, explaining the implications of these classifications for tuberculosis treatment.

3. List the different classes of beta-lactam antibiotics. Describe the spectrum of activity, of each class with examples.

III. Short Answers (Answer 7 out of 9)

[7×5=35]

1. Give a note on antitussives with one example.

2. Explain the anti-emetic drugs.

3. Describe the mechanism of action, uses, and adverse effects of fluconazole.

4. Give the mechanism of action, pharmacokinetics, and adverse effects of common chemotherapeutic agent.

5. Define mutagenicity and explain its relationship to genotoxicity and carcinogenicity.

6. Explain how circadian rhythms influence physiological processes (e.g., hormone secretion, metabolism).

7. Write the importance of supportive care in the management of poisoning, including monitoring and stabilization of vital signs.

8. Give Discussion on the potential benefits and limitations of targeted therapies.

9. Explain the pharmacokinetics of metronidazole.

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B (SVSU:2024-25/R)

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B.PHARM

IIIrd YEAR(6th sem.) EXAMINATION

Herbal Drug Technology (BP-603T)

[Time : 3:00 Hours]

[Max. Marks : 75]

Long question: Answer Any Two

[10x2=20]

Q1) Discuss the case study of Neem and its significance in traditional medicine. Analyze the benefits and limitations of using Neem as a herbal medicine.

Q2) Define Nutraceuticals. Write a note on Health benefits and role of Nutraceuticals in ailments like Diabetes and CVS diseases.

Q3) Discuss the patenting aspects of traditional knowledge and natural products. Analyze the challenges and opportunities in patenting traditional knowledge.

Short question: Answer Any Seven

[7x5=35]

Q1) Illustrate the preparation of Ayurvedic formulation Aristas or Bhasma.

Q2) Explain Alfalfa and Amla as health food.

Q3) Discuss the definition of: Patent, IPR, and Biopiracy.

Q4) Analyze the benefits and risks of using herbal medicines, with examples.

Q5) How does phytosome technology improve the bioavailability of herbal drugs?

Q6) Elaborate the components of GMP (Schedule - T) and its objectives.

Q7) Describe the different types of herbal formulations and their characteristics.

Q8) Explain the impact of pests on medicinal plants and describe effective pest management strategies.

Q9) Elaborate general introduction to herbal-drug and herb-food interactions.

Objective Questions: Answer all question:

[20x1=20]

1) There are ——— Types of Vedas

A) 4

B) 3

C) 2

D) 1

2) GAP stands for

A) Good Artificial Practice

B) Good Agriculture Policy

C) Good Agriculture Practice

D) Great Agriculture Practice

3) Which statement is true about synthetic drug

A) They can be patented

B) They are difficult to synthesize

C) They are usually more expensive to produce than natural sources

D) All of these

4) How much of the world's population depends on herbal medicines?

A) 80%

B) 40%

C) 60%

D) 20%

5) These are the herbal based Industries except.

A) Dabur

B) Biotique

C) Himalaya

D) Ipca

- 6) Good Manufacturing Practice of Indian systems of medicine comes under
 A) Schedule-Z B) Schedule-T C) Schedule-M D) Schedule-P
- 7) Microscopy is used to determine the _____ features of botanicals.
 A) Structural B) cellular C) internal D) All of the above
- 8) Is the component of IPR
 A) Patent B) D&C C) Biopiracy D) Farmers right
- 9) Is an example of natural colorants.
 A) Titanium dioxide B) Saffron C) Tartrazin D) Erythrosine
- 10) Biodynamic agriculture is introduced in
 A) 1922 B) 1924 C) 1926 D) 1928
- 11) Which of the following herbs is used to treat immune disorders?
 A) Ashwagandha B) Tulsi C) Ginger D) All of the above
- 12) What is the role of ASU DCC in herbal medicine?
 A) To regulate herbal medicine B) To promote herbal medicine
 C) To provide guidelines for herbal medicine D) None of the above
- 13) Which of the following is a type of herbal formulation?
 A) Arista B) Asawa C) Churna D) All of the above
- 14) What is the role of ICH guidelines in herbal medicine?
 A) To provide guidelines for clinical trials B) To regulate herbal medicine
 C) To promote herbal medicine D) None of the above
- 15) Which of the following herbs is used to treat neurological disorders?
 A) Brahmi B) Ashwagandha C) Jatamansi D) All of the above
- 16) Which of the following is a regulatory requirement for herbal drugs in India?
 A) Schedule T B) Schedule Z
 C) Both A and B D) None of the above
- 17) What is phytosome?
 A) A novel dosage form for herbal drugs
 B) A conventional dosage form for herbal drugs
 C) A type of herbal excipient D) None of the above
- 18) Which of the following herbs is used to treat diabetes?
 A) Ginger B) Fenugreek C) Garlic D) All of the above
- 19) Which of the following is a benefit of good manufacturing practice (GMP) in herbal industry?
 A) Ensures product quality B) Ensures product safety
 C) Ensures product efficacy D) All of the above
- 20) Which of the following herbs is used for its antioxidant properties?
 A) Turmeric B) Ginger C) Rosemary D) All of the above

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Paper Code: BP-604T

A

(SVSU:2024-25/R)

Enrollment No.

B.PHARM

IIIRD YEAR, VITH SEMESTER EXAMINATIONSubject: BIOPHARMACEUTICS & PHARMACOKINETICS
(CODE-BP604T)

[Time : 3:00 Hours]

[Max. Marks : 75]

Q1. Long Question : Answer Any Two

[10×2=20]

- What is non linear pharmacokinetics? Describe Michaelis –Menten method of estimating pharmacokinetic parameters.
- What is tissue permeability of drugs? Discuss various factors affecting drug distribution in detail.
- Describe the equations to derive all pharmacokinetic parameters after IV bolus administration of drugs.

Q2.. Short Question: Answer any Seven

[5×7=35]

- Explain the limitation of pH-partition hypothesis.
- Explain total body clearance.
- BCS classification of drugs with examples.
- Calculation of loading and maintenance dose of drugs for sustained release products.
- Define Volume of distribution. Write its mathematical expression and significance.
- Explain Facilitated diffusion.
- Explain various levels of correlation
- Classify various mathematical models in Pharmacokinetics study.
- Define and explain Blood-placental barrier.

Q3.. Multiple choice question.(Answer all)

[1×20=20]

- What is the driving force of Pore Transport?
 - Hydrostatic pressure
 - Concentration Gradient
 - Electrochemical gradient
 - Charge equilibrium
- Which is the other name of "cell drinking"?
 - Transcytosis
 - Phagocytosis
 - Pinocytosis
 - Endocytosis
- Proteins interact with which part of the cell membrane?
 - Hydrophobic tail
 - Polar head
 - Non polar head
 - Hydrophilic tail
- Dissolution can be expressed by which equation-
 - Modified Noyes-Whitney's
 - Lambert law
 - Handerson Hasselbalch equation
 - None of above
- Which one of these is an example of Enteral Route?
 - Skin
 - IV
 - Gastrointestinal
 - Inhalation

- vi. The solvate can exist in different crystalline forms called as _____
a) Solvates b) Pseudo polymorphs c) Lacuna d) Hydrate
- vii. Which form of a drug has Least solubility?
a) Anhydrous b) Solvates c) Crystalline d) None
- viii. Which tablets have minimum Disintegration time?
a) Enteric coated tablets b) Uncoated tablets
c) Sugar-coated tablets d) Sustained release tablets
- ix. Which drugs get absorbed in the stomach mostly?
a) Basic drugs b) Acidic Drugs c) Neutral drugs d) None
- x. Which of the following drug is not intended for pulmonary administration?
a) Bronchodilators b) Anti-allergics
c) NSAIDs d) Anti-inflammatory steroids
- xi. The maximum amount of solute dissolved in a given solvent under standard conditions of temperature, pressure, and pH is known as _____
a) Dissolution rate b) Intrinsic dissolution
c) Rate limiting step d) Absolute or intrinsic solubility
- xii. Who has higher fat content?
a) Infants and elders b) Adults of age more than 20
c) Adults of age above 70 d) Children at puberty
- xiii. Who has poorly developed BBB?
a) Infants b) Adults of age more than 20
c) Aged d) Children at puberty
- xiv. Which one of the following has a high perfusion rate?
a) Fat b) Muscle and skin c) Lungs and kidney d) Bone
- xv. Which of the given drugs bind to A1 globulin?
a) Steroidal drugs b) Vitamins A, D, E, K
c) Ferrous ions d) Carotenoids
- xvi. In which model compartments are joined in series?
a) Catenary model b) Compartment model
c) Physiologic model d) Mamillary model
- xvii. What is the equation to find out the apparent volume of distribution?
a) Amount of drug in the body/plasma drug concentration
b) Plasma drug concentration/amount of drug in the body
c) $1 / \text{plasma drug concentration}$
d) $1 / \text{Amount of drug in the body}$
- xviii. Which organ comprises the peripheral compartment in a two compartment model?
a) Liver b) Lungs c) Kidneys d) Muscles
- xix. Which one of these are correct Michaelis-Menten equation?
a) $-dC/dt = V_{\max} C / K_m + C$ b) $dC/dt = V_{\max} C / K_m + C$
c) $-dC/dt = V_{\max} C / K_m$ d) $-dC/dt = K_m + C / V_{\max} C$
- xx. Patient-related factors of drug absorption do not deal with which one of these?
a) Age b) Gastric Emptying time
c) Intestinal transit time d) Pharmaceutic ingredients

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B

(SVSU:2024-25/R)

Enrollment No.

B.Pharm

IIIrd YEAR, VIth SEMESTER EXAMINATION

Subject Name- Pharmaceutical Biotechnology,

BP-605T

[Time : 3:00 Hours]

[Max. Marks : 75]

I. Multiple Choice Questions (MCQ)

[20×1=20]

1. Which of the following deals with biotechnology?
(a) Crop Production (b) Vaccination (c) Animal breeding (d) All
2. Which of the following product is biotechnologically derived?
(a) Bread (b) Cheese (c) Yogurt (d) All
3. Liposomes are used in which Method of Enzyme Immobilization?
(a) Adsorption (b) Covalent Binding (c) Membrane Confinement (d) All
4. The carrier Calcium Alginate is used in which method?
(a) Adsorption (b) Covalent Binding
(c) Membrane Confinement (d) Entrapment
5. The sensitive biological material used in a Biosensor is known as-
(a) Amplifier (b) Processor (c) Sensor (d) None
6. Protein Engineering involves the change in the sequence of-
(a) DNA (b) Amino acids (c) Nucleic Acids (d) None
7. Microbial cells can be broken down by physical means in recovery stage of Enzymes by-
(a) Purification (b) Heating (c) Sonification (d) Radiation
8. The genes & the genetic code is present in-
(a) RNA (b) DNA (c) Mitochondria (d) Ribosomes
9. DNA Recombinant Technology is also known as-
(a) Chemical Engineering (b) Liquid Engineering
(c) Genetic Engineering (d) None
10. The information passed from DNA to mRNA is called as-
(a) Transcription (b) Translation (c) Both (d) None
11. Which of the following are produced using Genetic Engineering?
(a) Insulin (b) Hepatitis B Vaccine (c) Rice (d) All
12. Joining pieces of DNA together is done by-
(a) Restriction Endonuclease (b) DNA Ligase (c) Vector (d) None
13. The immunity in which antibodies are gained from outside is known as-
(a) Natural (b) Passive (c) Both (d) None
14. The immunity which is due to activation of B-Cells is-
(a) Humoral (b) Cell Mediated (c) Both (d) None

15. Mutation may occur in-
(a) Initiators (b) Modulators (c) Mutagens (d) All
16. The agents which cause Mutation are known as-
(a) Form 12 (b) Form 12A (c) Form 12AA (d) Form 12B
17. Which of the following is used to generate useful products in Fermentation-
(a) Proteins (b) Microbes (c) Plants (d) Synthetic Chemicals
18. Fermenters are also known as-
(a) Bioreactors (b) Biomachines (c) Biogenerators (d) None
19. The freezing of dried human plasma in degree centigrade is done at-
(a) -2 (b) -6 (c) -12 (d) -18
20. Which of the following is an important example of Plasma Substitute-
(a) Lactose (b) Glucose (c) Dextran (d) Starch

II. Long Answers (Answer 2 out of 3)

[2×10=20]

1. Explain Biosensor and their types along with applications.
2. Write a note on DNA Recombinant Technology & its applications.
3. What do you mean by Immunity? Give its types.

III. Short Answers (Answer 7 out of 9)

[7×5=35]

1. Differentiate between Prokaryotes and Eukaryotes.
2. What are Biosensors? What are their applications?
3. Write a note on-(a) Restriction Endonuclease (b) DNA Ligase
4. Give a brief account of PCR.
5. Give a brief account of Hypersensitivity reactions & its different types
6. Give a note on Blood Products & Plasma Substitutes.
7. What is mutation? Write about its different types.
8. Write a note on Fermentation. Also give its applications in industry.
9. Write in detail different methods of enzyme immobilization.

Printing Pages : 2

Paper Code: BP-606T

A

(SVSU:2024-25/R)

Enrollment No.

B. PHARM

6th SEMESTER, 3rd YEAR EXAMINATION

Quality Assurance (BP606T)

[Time : 3:00 Hours]

[Max. Marks : 75]

I Long Question : Answer Any Two

[2×10=20]

1. Explain Good Warehousing practices.
2. Discuss the objectives and scope of GLP in Pharmaceutical industry.
3. Discuss in detail about Total Quality Management.

II. Short Question: Answer any Five

[7×5=35]

1. Give difference between Quality Assurance & Quality Control.
2. What is control of contamination?
3. Write the significance of personnel hygiene in pharmaceutical industry
4. Describe the equipment selection and purchase procedure
5. Explain the protocol for conduct of non-clinical laboratory study
6. Explain the quality control tests for containers and rubber closures
7. Discuss the handling of return goods
8. Explain the importance and scope of validation
9. Write a note on Quality Management System.

III. Multiple Choice Question: Answer All

[20x1=20]

1. Which guideline stands for evaluation of stability data
a) Q1B b) Q1D c) Q1E d) Q1C
2. Which quality is measured as a foundation of requirement:
A. Software B. Programmers C. Hardware D. None
3. While setting Quality objective, _____ to be considered.
A. Material quality B. Feedback
C. Development of standards D. Customer Satisfaction.
4. Select which option is not true about SQA:
A. Evaluations to be performed
B. Documents that are produced by the SQA team.
C. Audits & reviews to be performed by the team D. None.
5. Control chart is a:
A. Process monitoring tool B. Process control tool
C. Both (a) and (b) D. None
6. Software quality assurance consists of which function of management:
A. Reporting functions B. Auditing functions
C. both a and b D. None

7. Which of the following is not included in prevention cost:
 A. formal technical reviews B. equipment calibration and maintenance
 C. test equipment reviews D. None
8. Capacity planning is concerned with:
 A. how much labor required B. how many machines required
 C. None D. Both
9. Process control is carried out:
 A. during production B. before production.
 C. after production control D. All of the above
10. Total Quality Management (TQM) focuses on
 A. Employee B. Customer C. Both (a) and (b) D. NONE
11. What does QA and QC stand for?
 A. Quality Assurance and Queuing Control
 B. Quality Adjustment and Quality completion
 C. Quality Assurance and Quality control
 D. Quality Adjustment and Queuing control
12. The objective of ISO-9000 family of Quality management is:
 A. Customer satisfaction. B. Employee satisfaction
 C. Skill enhancement D. Environmental issues
13. P-D-C-A stands for
 A. Plan-Do-check-Act B. Plan-Do-correct-Act
 C. Proceed-Do-check-Act D. Proceed-Do-correct-Act
14. Physical dimension of equipment and accessories- comes under which qualification?
 A. Design qualification (DQ) B. Installation qualification (IQ)
 C. Operational qualification D. Performance qualification (PQ)
15. TQM Stands for :
 a. Total Quality Management b. Total Quality Management
 c. Total Quality Measurable d. None of these
16. GMP Means:
 a. Good Manufacturing Protocols b. Good Manufacturing Practices
 c. Good Manufacture Planning d. None of these
17. The objective of ISO-9000 family of Quality management is
 a) Customer satisfaction b) Employee satisfaction
 c) Skill enhancement d) Environmental issues
18. Which of the following option is correct regarding QA and QC:
 a) QC is an integral part of QA
 b) QA is an integral part of QC
 c) QA and QC are independent to each other
 d) QC may or may not depend on QA
19. GCP Means:
 a. Good clinical practice b. Good clinical patient
 c. Good client practice d. none of these
20. The term calibration is used for
 a) Equipment b) Processes c) None of these d) Both a and b