

Q.P. CODE:

Reg. No:

Second Year B. Pharm Degree Examinations

Model Question

Pharmaceutical Chemistry - III

(Advanced Organic Chemistry)

Time: 3 Hrs

Max. Marks: 100

- Answer all questions
- Write equation wherever necessary

Essay:

(3×10=30)

1. Define and classify configuration. Explain the sequence rules with examples
2. Explain the various named reduction reactions with examples and their mechanism
3. Mention heterocyclic compounds. Explain the methods of preparation and reactions of imidazole

Short notes:

(14×5=70)

4. Explain asymmetric synthesis with examples
5. Explain stereochemistry of biphenyl compounds
6. Discuss the various rearrangement reactions
7. Mention the various methods of preparation of furan
8. Discuss the important reactions of pyrazole
9. Discuss the aromaticity of naphthalene
10. Explain the electrophilic substitution reactions of pyridine
11. Explain Mannich reaction and Darzan's reaction
12. Walden Inversion
13. List the various methods for the resolution of racemic mixture
14. Modern theory of double bonds
15. Explain the method of preparation for • Phenothiazine • Acridine
16. Discuss the chemical nature of • Azepines • Oxepines
17. Comment on quinolones and quinazolones

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Model Question

Pharmaceutical Analysis - I

Time: 3 Hrs

Max. Marks: 100

- Answer all questions
- Write equation wherever necessary

Essay:

(3×10=30)

1. Explain the various steps involved in gravimetric analysis, citing the estimation of barium as barium sulphate as an example.
2. Why the non-aqueous titrations are of immense importance in pharmaceutical analysis. Mention the principle and types of solvents employed in non-aqueous titrimetry.
3. Explain the different methods used in the detection of endpoint in argentometry.

Short notes:

(14×5=70)

4. State and explain the Law of mass action.
5. "A precise analytical method need not be accurate". Comment.
6. Why arsenic trioxide is regarded as a primary standard in analysis.
7. Define pH .in the titration between std.HCl and std.NaOH what will be the pH at equivalence point and give reason.
8. Mention the role of buffers in pharmaceutical analysis. How will you prepare an acidic buffer.
9. Titration of a polyprotic acid.
10. List the use of dimercaprol and formaldehyde in complexometry.
11. State Nernst equation. Explain an application of 2,6-dichlorophenol-indophenol in analysis.
12. Explain the factors to be considered in the preparation and storage of standard sodium thiosulphate solution.
13. Explain in detail the principle involved in Karl-Fischer titration.
14. Explain the chromophore theory of pH indicators with examples.
15. Explain the construction of Hempel burette and pipette.
16. Differentiate co precipitation and post precipitation.
17. Mention the steps to be taken to minimise systematic errors in an analytical procedure.

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Model Question

Pharmaceutics –II

(Physical Pharmacy)

Time: 3 Hrs

Max. Marks: 100

- Answer all questions
- Write equation wherever necessary

Essay:

(3×10=30)

1. Define order of a reaction. What is shelf life. How do you calculate shelf life of a pharmaceutical product which under go first order degradation. Discuss the effect of temperature on reaction rate.
2. Define surface tension. Classify surfactants with examples write on their pharmaceutical application.
3. Explain reology of pseudoplastic system.

Short notes:

(14×5=70)

4. Explain working of one multipoint viscometer.
5. Discuss plug flow.
6. Discuss the principles of controlled flocculation in the formulation of suspension.
7. Define emulsions and explain the theories of emulsification.
8. Explain specific surface. Discuss the determination of surface area by air permeability method.
9. Describe passive diffusion in the transport of drugs.
10. Describe drug dissolution process and add a note on sink condition.
11. Describe Type-I dissolution apparatus with a labeled diagram.
12. Explain electrical properties of colloids.
13. Describe derived properties of powders.
14. Define thixotropy and mention its importance in pharmaceutical formulations.
15. Classify complexes with suitable examples and add note on complexation & drug action.
16. Explain the method of particle size determination using Andreason pipette method.
17. What is Angle of Repose and mention its applications.

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Model Question

Pathophysiology , Health Education & Community Pharmacy

Time: 3 Hrs

Max. Marks: 100

- Answer all questions
- Write equation wherever necessary

Essay:

(3×10=30)

1. Describe the etiology, pathophysiology and clinical significance of diabetes mellitus & rheumatoid arthritis.
2. List the different causes of cellular injury. Explain in detail about the morphology of irreversible cell injury.
3. Define demography and explain the various methods adopted for family planning in a developing country like India.

Short notes:

(14×5=70)

4. Differentiate between metaplasia and dysplasia.
5. Causes of acute inflammation.
6. Steatosis
7. Syphyllis
8. UTIS
9. Ulcerative colitis
10. Etiology of leukemia
11. CPR
12. National immunisation schedule
13. Dots therapy
14. Indicators of health
15. Etiology, prevention and control of blindness
16. Causative organism and mode of transmission of the following:
 - . Malaria • .Chicken pox • . Influenza • . Ascariasis • .. Plaque.
17. Balanced diet

Reg. No:

Second Year B. Pharm Degree Examinations
Model Question

Mathematics, Biostatistics & Computer Applications

Time: 3 Hrs

Max. Marks: 100

- Answer all questions
- Write equation wherever necessary
- Write **SECTION A** and **SECTION B** in separate Answer books. Do not mix up questions from Section A and Section B.

Q.P. CODE:

Section A

Marks:50

Essay:

(1×10=10)

1. Six pairs of husbands and wives selected at random and their intelligent quotients were recorded as follows

Pair	1	2	3	4	5	6
IQ of husband	105	112	90	92	116	110
IQ of wife	102	108	100	96	112	110

Does the data suggest that there is no significant difference in average IQ between the husband and wife. Use 1% level of significance

Short notes:

(8×5=40)

2. Find the derivative with respect to x of the following • $\sqrt{x} + \frac{1}{\sqrt{x}}$ • $e^{\tan ax}$
3. Find $\frac{dy}{dx}$ when $x = a [\cos t + \log \tan \frac{t}{2}]$ and $y = a \sin t$
4. Evaluate • $\int \frac{x^3}{\sqrt{1+x^2}} dx$ • $\int x \log(1+x) dx$
5. Solve $(x^2 + 1) \frac{dy}{dx} + 2xy = 4x^2$
6. Solve $\frac{d^2y}{dx^2} - 5 \frac{dy}{dx} + 6y = e^{4x}$
7. Find the laplace transform of $\sin 2t \sin 3t$
8. Find the mean, median and coefficient of variation of the following data – 8, 6, 10, 4, 12, 9, 7, 8.
9. Calculate the coefficient of variation between height (in inches) and weight (in kilograms) from the data given below

Height	60	63	65	66	68
Weight	50	54	60	67	70

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Q.P. CODE:

Section B

Marks:50

Essay:

(2×10=20)

1. Discuss in detail about different computer networking systems
2. Explain in detail about the application of computers in pharmacy

Short notes:

(6×5=30)

3. Explain briefly about optical character recognition (OCR)
4. Mention the types of operating systems
5. Describe the computer embedded systems and their applications briefly.
6. Printers as output devices
7. Differentiate between primary and secondary memory
8. Discuss assembly languages .

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Second Year B. Pharm Degree Examinations

Model Question

Pharmaceutics III

(Pharmaceutical Technology)

Time: 3 Hrs

Max. Marks: 100

- Answer all questions
- Write equation wherever necessary

Essay:

(3×10=30)

1. Describe the principle and construction of a centrifugal pump. Compare centrifugal pump with reciprocating pump.
2. Describe the construction, working, advantages and disadvantages of a fluid energy mill.
3. Explain the term multiple effect evaporation. Discuss the methods of feeding multiple effect evaporators.

Short notes:

(14×5=70)

4. State and explain Fourier's law of heat conduction
5. Differentiate between black body and grey body and add a note on Stefan Boltzmann law
6. Describe the principle of pneumatic conveyor with the help of a neat sketch.
7. Describe the five factors that influence size reduction.
8. Discuss filter aids with suitable examples and add a note on precoat filter
9. List five pharmaceutical applications of industrial centrifuges and describe the theory of centrifugation.
10. Describe the principle of steam distillation.
11. Describe the construction and working of any one type of film evaporator.
12. Explain the principles of nucleation and crystal growth in crystallization
13. Discuss the principle of freeze drying and mention its advantages .
14. List the reasons for vortex formation. Drawbacks of vortex and to suggest solutions for this problem.
15. List the possible industrial hazards and how can it be prevented.
16. Explain the importance of stainless steel in pharmaceutical industry.
17. Define – absolute humidity, percentage humidity, dew point , wet bulb temperature

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Model Question

Applied Biochemistry and Molecular Biology

Time: 3 Hrs

Max. Marks: 100

- Answer all questions
- Write equation wherever necessary

Essay:

(3×10=30)

1. Describe the metabolism of sulphur containing amino acids with their metabolic disorders
2. Classify lipids and discuss in detail with their structure
3. Explain Protein Biosynthesis in detail.

Short notes:

(14×5=70)

4. Briefly explain the urea cycle.
5. Discuss enzymes and classify it.
6. Classify amino acids.
7. Enumerate the TCA cycle with its energetics.
8. Describe the biosynthesis of heme.
9. Explain: • Transamination • Deamination
10. Molecular methods of disease diagnosis
11. Explain the mechanism of oxidative phosphorylation.
12. Discuss briefly the de novo synthesis of purine nucleotides
13. Elaborate on beta oxidation of fatty acids.
14. DNA replication
15. Describe polymerase chain reaction with its applications
16. Various factors affecting enzyme action.
17. Explain the HMP shunt with its biochemical significance
