

(BPH30112)

B.Pharmacy DEGREE EXAMINATION,
JANUARY 2019.

Third Semester

Paper I: PHARMACEUTICAL CHEMISTRY – II
(ORGANIC – II)

(Regulation 2012 – 13)

Time : Three hours

Maximum : 70 marks

Answer ALL questions.

(5 × 14 = 70)

1. (a) Write short notes on :

(i) Chirality

(ii) Resolution of racemic mixture.

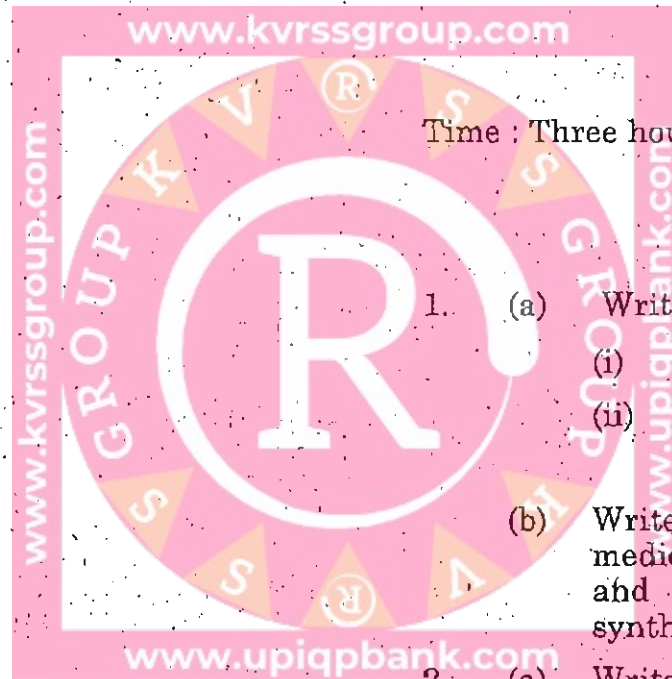
Or

(b) Write the significance of stereochemistry in medicinal chemistry? Explain the principle and methodology involved in asymmetric synthesis.

2. (a) Write four methods for preparation and reactions of amines.

Or

(b) What are diazonium salts? Write in detail on their methods of preparation and synthetic applications.



3. (a) Give reasons for the following :
- Aniline decolorizes bromine water but not benzene
 - FC acylation is preferred over FC Alkylation to obtain monosubstituted products
 - Napthalene is more stable than anthracene or phenanthrene.

Or

- (b) Explain the following :
- Carboxamides (CO-NH) are neutral but sulphonamides are acidic
 - Phenols are less acidic than carboxylic acids
 - Diázotization reaction is performed at $<10^{\circ}\text{C}$.

4. (a) Write in detail on methods of preparation and reactivity of furan.

Or

- (b) Explain the synthesis and properties of pyridine. Add a note on importance of pyridine heterocycles in medicinal chemistry.

5. (a) Write in detail on :

- Philips reaction
- Mannich reaction.

Or

- (b) How do you achieve the following conversions?

- Napthalene to pthalic anhydride
- Phenol to salicylic acid
- Aniline to chlorobenzene.

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B.Pharmacy DEGREE EXAMINATION,
JANUARY 2019.

Third Semester

Paper II — PHARMACEUTICAL ENGINEERING — I

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(Regulation 2012-2013)

Time : Three hours

Maximum : 70 marks

Answer ALL questions.

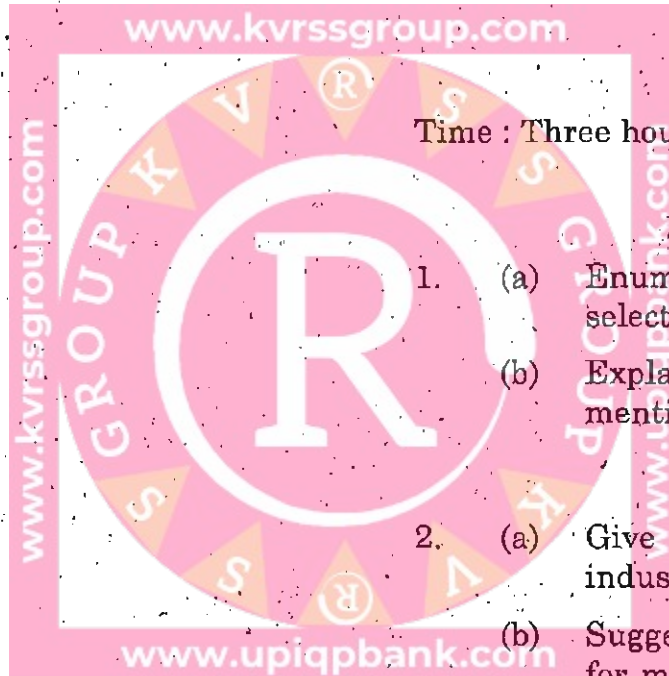
1. (a) Enumerate the factors influencing the selection of mixers for solid-solid mixing. (7)
- (b) Explain the working of rotocube mixer and mention its advantages. (7)

Or

2. (a) Give the differences between pilot and industrial scale operations. (7)
- (b) Suggest a suitable mixer with valid reason for mixing of viscous masses and explain its working. (7)

3. Give the classification of equipment used for transportation of solids. Explain the working of bucket elevators and write their advantages.

Or



4. (a) Write about the working of venturimeter and orifice meter and give the salient differences between them. (9)
- (b) Write about air binding and cavitation. (5)
5. (a) Write the causes for electrical and chemical hazards and discuss methods for their prevention in pharmaceutical industry. (9)
- (b) Write about accident records and their significance. (5)

Or

6. (a) Give the classification of glasses used in pharmaceutical industry and their applications. (7)
- (b) Mention the reasons for popularity of plastics in packing and discuss their applications in pharmaceutical packaging. (7)
7. (a) Write about factors influencing the wet bulb temperature. (5)
- (b) Write the refrigeration principle and explain the working of refrigeration equipment. (9)

Or

8. (a) Explain the theory of air conditioning. (6)
- (b) Explain the methods for determination of humidity. (8)

9. (a) Explain the sedimentation theory for determination of particle size. (6)
- (b) Suggest a suitable size reduction equipment for thermolabile substance and explain its working. (8)

Or

- (a) Write about forces responsible for size reduction with suitable examples. (7)
- (b) Explain the laws of size reduction. (7)

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B. Pharmacy DEGREE EXAMINATION,
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Third Semester

Paper III — PHARMACEUTICAL MICROBIOLOGY

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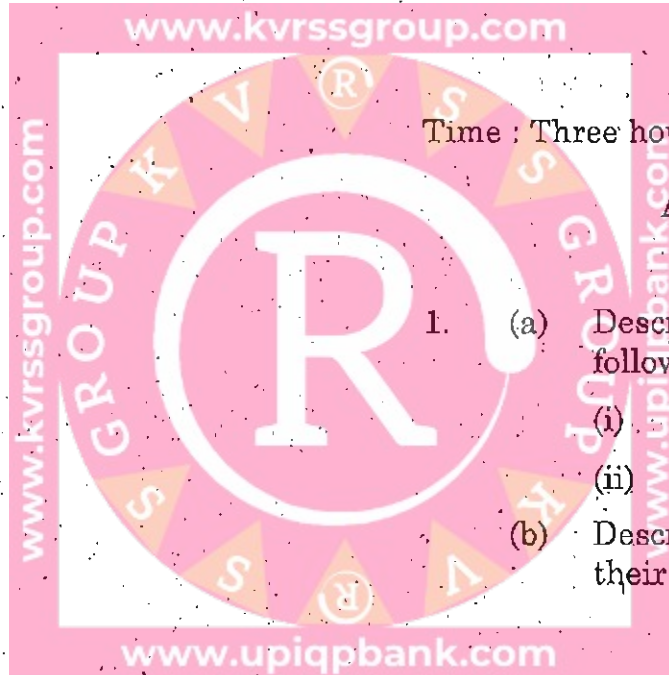
(Regulation 2012-2013)

Time : Three hours

Maximum : 70 marks

Answer ALL questions.

(5 × 14 = 70)



1. (a) Describe the structural characteristics of the following
- (i) Actinobacteria
 - (ii) Virus
- (b) Describe different types of mutagens and their mechanism.

Or

- (c) Describe in detail about batch type bacterial growth curve.
- (d) Describe in detail about bacterial transformation.

2. (a) Write the principle involved spore staining and how it differs from Gram staining.
- (b) Write the effects of the following on bacterial growth (i) metal ions (ii) temperature.

Or

- (c) Describe in detail any one method used for quantification viable bacteria.
- (d) Explain the principle involved in test for coliform bacteria to check the purity of drinking water.
3. (a) Explain the terms 'antiseptic' and 'disinfectant'. Write construction and working principle of hot air oven.
- (b) Write the mechanism of action, merits and demerits of the following disinfectants (i) formaldehyde (ii) chlorine gas.

Or

- (c) Write the conditions used, mode of action and applications of the following sterilization methods:
- (i) By gamma radiation
- (ii) By ethylene oxide
- (d) Explain the terms 'bacteriostat' and 'bactericide'. Write the factors affecting disinfection.

4. (a) Differentiate between passive and active immunity. Add note on structure of antigens.
- (b) Write the principle of the following serological reactions.
- (i) Neutralization
- (ii) Complement fixation.

Or

- (c) Explain the action of carriers in transmission of disease with examples.
- (d) Write the general methods of immunization.
5. (a) Write etiology, diagnosis, source of infection, mode of transmission, prevention and control of the following diseases.
- (i) Tuberculosis
- (ii) Hepatitis
- (iii) Polio.

Or

- (b) Write etiology, diagnosis, source of infection, mode of transmission, prevention and control of the following diseases.
- (i) Gonorrhoea
- (ii) Cholera
- (iii) AIDS.

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**B.Pharmacy DEGREE EXAMINATION,
JANUARY 2019.**

Third Semester

Paper IV – ANATOMY AND PHYSIOLOGY

(Regulation 2012-13)

Time : Three hours

Maximum : 70 marks

Answer ALL questions.

1.
 - (a) Describe briefly about different systems of human body.
 - (b) What are the different types of epithelial tissue? Describe in detail about physiology of epithelial tissue.

Or

 - (c) Write a note on the membrane permeability.
 - (d) Describe the properties and functions of nervous tissue.

2.
 - (a) Write a note on the Physiology of hearing.
 - (b) Describe the functions of parasympathetic nervous system.

Or

- (c) Write a note on the physiology of smell.
- (d) Explain the pathways of neurotransmitters and their functions in the CNS.
3. (a) Write a note on the structure and functions of blood vessels.
- (b) Describe the mechanisms of blood coagulation.

Or

- (c) Describe the structure and functions of the heart.
- (d) What is cardiac cycle? Describe the events of the cardiac cycle using ECG recordings.
4. (a) Describe the parts and functions of respiratory system.
- (b) Explain in detail the about the neuronal control of respiration.

Or

- (c) Write a note on the movements of the alimentary canal.
- (d) Write a note on the secretions of the digestive system and their physiology.

5. (a) Write a note on the secretions of endocrine portion of the pancreas.
- (b) Write a note on the hormones of the anterior pituitary gland and their functions.

Or

- (c) Write a note on the physiology of parathyroid gland.
- (d) Explain the physiology of urine formation and describe the factors affecting urine output.

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**B.Pharmacy DEGREE EXAMINATION,
JANUARY 2019.**

Third Semester

**Paper I — PHARMACEUTICAL ORGANIC
CHEMISTRY – II**

(Regulation 2017–2018)

Time : Three hours

Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

Write about the following.

1. Explain why carboxylic acids are more acidic than phenols.
2. Explain the limitations of Friedel-Crafts alkylation.
3. What is Huckel's rule?
4. Define acid value.
5. Write structure and uses of Resorcinol.
6. Basicity of amines.

7. Explain why chair form is more stable than boat form.
8. Write the structure and uses of saccharin.
9. Write the structure and uses of DDT.
10. Explain RM value.
16. Explain about effect of substituents on acidity of aromatic acids with examples.
17. Write the general methods of preparations of carboxylic acids.
18. Explain the mechanism of nitration of benzene.
19. What is freidal crafts alkylation and acylation?

SECTION B — (2 × 10 = 20 marks)

Answer any TWO questions.

11. Write about effect of substituents on reactivity and orientation of mono substituted benzene compounds with suitable examples.
12. What are the various characterisation of fixed oils? Define, write their significance and principle involved in determination.
13. Explain Baeyer's strain theory. What are its limitations? Explain about Sachse Mohr's theory.
20. Write important reactions of fatty acids.
21. Important reactions of phenols.
22. Write the structure and uses of Naphthalene, Anthracene and Phenanthrene.

SECTION C — (7 × 5 = 35 marks)

Answer any SEVEN questions.

14. Write the reactions of cyclopropane and cyclobutane.
15. Synthesis and reactions of any two polynuclear hydrocarbons.

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**B.Pharmacy DEGREE EXAMINATION,
JANUARY 2019.**

Third Semester

www.kvrssgroup.com Paper II — PHYSICAL PHARMACEUTICS – I

(Regulation 2017-2018)

Time : Three hours

Maximum : 75 marks

SECTION I — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define solubility and mention its significance in pharmacy.
2. What are eutectic mixtures and give two examples?
3. Give the differences between ideal and real solutions.
4. Write the significance of polymorphism in pharmacy with suitable example.
5. Give the differences between adsorption and absorption.
6. What is spreading coefficient?

7. Write two applications of complexes in pharmacy.
8. What are chelates?
9. Define buffer and buffer capacity.
10. Write the about Sorensen's pH scale.
16. Explain the method for determination of interfacial tension.
17. Write about inorganic complexes.
18. Write about biological buffers.
19. Write about distribution law and its applications. Mention its limitations.

SECTION II -- (2 × 10 = 20 marks)

Answer any TWO questions.

11. Name the methods for determination of stability constants of complexes and explain pH titration method.
12. Write about different types of adsorption isotherms.
13. Explain the methods for improving the solubility of poorly soluble drugs.
20. Mention the significance of HLB value and write its usefulness in selecting the suitable surfactant.
21. What are liquid crystals? Write about their classification, properties and applications.
22. Derive buffer equation for an acidic buffer.

SECTION III — (7 × 5 = 35 marks)

Answer any SEVEN questions.

14. Write about factors influencing solubility of gases in liquids.
15. Define refractive index and optical rotation and explain their pharmaceutical applications.

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**B.Pharmacy. DEGREE EXAMINATION,
JANUARY 2019.**

Third Semester



Pharmaceutical Microbiology

(Regulation 2017-2018)

Time : Three hours

Maximum : 75 marks

I. Answer ALL the questions : (10 × 2 = 20)

1. Write any four major differences between prokaryotes and Eukaryotes.
2. Write the principle of electron microscopy.
3. Write the principle of IMVIC biochemical reactions.
4. Write the mechanism of action of gamma rays caused for sterilization.
5. Define the terms "disinfection" and "bactericide".
6. Name the media and methods used in test for sterility as per IP.
7. Explain class 1000 area.

8. Write the principle involved in microbiological assay of amino acids.

9. Mention different types of spoilage of pharmaceutical products.

10. Name the media used for growth of animal cell lines in the laboratory.

II. Answer any TWO questions : (2 × 10 = 20)

11. Describe various methods used for isolation of pure culture. Write notes on total count and viable count.

12. Write the conditions applied, source, mechanism involved, advantages, limitations, equipment used and applications of ethylene oxide sterilization.

13. Write the factors affecting disinfection process and any one method in detail for the evaluation of disinfectant activity of a compound.

III. Answer any SEVEN questions : (7 × 5 = 35)

14. Write the morphology and cultivation of fungi.

15. Write notes on endotoxins.

16. How do you evaluate microbial stability of oral liquids?

17. Write the working principle, design and applications of laminar airflow unit.

18. Explain the method/s for assessment of a new antibiotic.

19. Write the applications of animal cell cultures in pharmaceutical research and their maintenance in the laboratory.

20. Write notes on preservation and maintenance of pure cultures.

21. Write the mechanism of action of chlorine and heavy metals in controlling of bacterial growth.

22. Write the principle involved in and procedure for Gram's staining.

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B. Pharmacy (III Semester) EXAMINATION,
JANUARY 2019.

Paper – IV : PHARMACEUTICAL ENGINEERING

www.kvrssgroup.com

(Regulation 2017–18)

Time : Three hours

Maximum : 75 marks

SECTION – I

Answer ALL questions. (10 × 2 = 20)

1. What is Stefan-Boltzmann equation?
2. Suggest a suitable size reduction mill for herbal drug with valid reason.
3. What is evaporator efficiency?
4. What is Kozeny's equation and mention its significance.
5. Define bound and unbound moisture.
6. Define sieve number and give example.
7. Mention the causes for vortex formation and give two methods for their prevention.

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8. Why the use of asbestos is prohibited in pharmaceutical industry?
9. Give the classification of steels used in pharmacy.
10. Write the principle of centrifugation and mention its significance.

SECTION – II

Answer any TWO questions.

(2 × 10 = 20)

11. What is mixing? Explain the importance of mixing in pharmacy. Name the mixers used for pastes and ointments and describe the working of anyone of them.
12. Give the classification of materials of construction. Discuss their relative merits and drawbacks citing suitable examples from the pharmaceutical industry point of view.
13. Write the principle of distillation and explain the working of fractionating column. Mention the uses of fractional distillation.

SECTION – III

Answer any SEVEN questions.

(7 × 5 = 35)

14. Explain the principle of film evaporators.
15. Write the uses of non metals in pharmacy.

16. Define Fourier's law mention its applications.
17. Enumerate the factors influencing rate of drying.
18. What is critical speed in ball mill? Mention the uses of ball mill in pharma industry.
19. Describe the working of double cone blender.
20. Give the construction and working of plate and frame filter.
21. What are the uses of cyclone separator? Describe its working.
22. Write about filter aids.